CS619-New Project Titles for Fall 2016 Semester

Project Titles

Online Air-Travelling Reservation System

Project Domain / Category
Web based Application

Abstract/Introduction
"Online Air-Travelling Reservation System" is web based application that offers services to reserve airline ticket from given source and destination locations. After reservation customers will collect the tickets from customer care office.

Stakeholder
1. Administrator
2. Front Desk Officer
3. Buyer

Functional Requirements:

Buyer:
1. User can view the information about fares, source and destination locations and airline flight plans.
2. To reserve a ticket, user first will register him/herself. After registration, a user now promoted as potential buyer in this system.
3. A buyer can reserve a ticket online. After reservation customer will collect the ticket from customer care office.
4. After collecting tickets from office the front desk officer sets his ticket status as "Ticket Received".
5. To cancel a ticket, a buyer would have to visit the office and ask for ticket cancellation. (This system can be improved latter for online ticket cancellation and refunds).

Administrator:
1. Updates airline schedule, ticket fares, and related information
2. Manages buyers and front desk officers' accounts
3. Generates reports from system
4. Performs system related activities

Front Desk Officer:
1. Views and verify the buyer info
2. Issues the tickets to the buyers and take the receiving from buyer
3. Sets the status of buyer to "Ticket Delivered"

[NOTE: Student can add/enhance requirements as per needed.]

Tools:

WAMP server, PHP, MySQL, HTML editors (Dreamviewer, Notepad++).

Supervisor:
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Climate Based Yield Production and Reporting Analysis

Project Domain / Category
Web based Application

Abstract/Introduction
Agriculture sector is the largest sector of economy. Crop reporting analysis helps in not only the total production in an area but also it will help in analyzing the reasons and estimation of crops in overall Pakistan. Through accurate information of climate, production of crops can be increased. This project will deal with the crop reporting and analysis on climate based reasons. This tool will help departments e.g. agriculture, water resource management and energy sector departments), for making their policies, strategies, and management decisions.

The project is focused on the web based development of a most optimal and most accurate crop reporting system that would facilitate many activities and sub-activities that are dependent on the crop productions, and timely reporting with climate conditions and alert generating facility on farmers.

Functional Requirements:
1.1 Selecting the area for analysis.
1.2 Overall Crops production.
1.3 Crop Reporter wise information handling.
1.4 Crop category wise
1.5 Climate condition wise production analysis
1.6 Climate reporting.
1.7 Database connectivity to store useful information in database.
1.8 Suggestion to farmers
1.9 Policy management

Tools: PHP,HTML, MySQL, Java Script etc.

Supervisor:
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School Management System

Project Domain / Category
Online Web Based Application

Abstract/Introduction
Education system outlines the backbone of every nation. Technology can play a very crucial role in streamlining the whole system of education. Exploring the technological approach to education, streamlining education process and spiraling acquaintance amongst students, staff, parents and management becomes essential for today's fast growing educational environment.

Today every school needs to manage more information than ever before. Without a solid internal infrastructure for teachers, administrators and departments to share data, critical school and student information can be lost, or worse — communicated incorrectly — leading to a host of problems that can affect your school's image and endurance. To remain competitive, school needs a simple solution that can run individual functions, connect their entire operation, use the web as a key communication tool and simplify day-to-day operational responsibilities, giving staff more time with students.

The proposed project will be a simple state of the art solution to these problems. Implementing all the operations from basic to advance, it will be a great help for schools at various level to automate their routine tasks including examinations process, grading system, fee payment, student attendance, and news and event management.

Functional Requirements:

School Management System will be a web based online application which is divided into modules and every module providing following tasks:

Module – 1: User Management
Students, parents and teachers will have to register with system to use it. Admin staff member will create account of students, teachers and share account details with them. Parents will be able to register from any location which will be approved by admin.

Module – 2: Class Room Management
Student class information like record of each class and subjects offered in particular class. Students in each class and teachers information for particular class will be maintained in this module. Admin staff will able to maintain information of all courses offered, creation of class like which students are in a particular class, courses offered and teachers who will teach the class.

Module- 3: Examination Management
Exams scheduling, date sheet, and results will be manage in this module. Students, teachers and parents will be able to see the report/result card. Teachers will enter student's marks through this module and admin will manage exams schedule and date sheet.

Module- 4: Time Table Management

Scheduling of class time, exams date sheet and schedule generation, students will be managed in this module. Teacher will be able to maintain the attendance records of students. Admin will be able to maintain attendance record of teachers and parents will be able to see the attendance of their children.

Module 5: Financial Management

All financial activities like student fee and other financial management will be performed by this module.

Module 6: Announcements and News Management

All announcements and news about any activity like start of classes, holidays, exams etc. will be managed through this module.

Non-Functional Requirements:

This system provide stability of interface on all major browsers and devices, security, user friendly interface and quickly response of any type of information retrieval.

Tools:

Microsoft.Net, SQL Server

Supervisor:

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Online Store

Project Domain / Category
Web application

Abstract/Introduction
The Internet is an important factor of our lives. Through Internet we can communicate with each other, share different type of information and resources. In the today's ecommerce world, different types of organizations are going to build their businesses through Internet. For this purpose, different types of ecommerce webpages/ websites are developed to sell their products and services etc.

In this project, we will build an easy to use website for an online store for the organization in order to sell their products and services over the Internet. Through the online store website the users/buyers buy different type of services and products via Internet. The main purpose to build an online store is to facilitate interactions and transactions between business and its customers.

The online store project is basically divided in two main factors, i.e. business owner and customers. The business owner interface will be different from the customer interface. In the business owner interface, the business owner can perform different operations like; login, uploading and editing different services and products, managing inventory and managing different orders received from the customers. In the customer interface, the customer/buyers can perform different operations like; create an account, login, logout, Brows different products and services etc.

Functional Requirements:
1. The business owner must login to his/her portal.
2. The business owner can add or delete different products and services.
3. The business owner manage inventory and manage different orders of customers.
4. The customer can create account.
5. The customer can login and logout.
6. The customer can add different products and services to the shopping cart.
7. The customer can edit the shopping cart.

Tools:
PHP, MySQL.

Supervisor:
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Online Event Management System

Project Domain / Category
Web based Programming

Abstract/Introduction
The field of Event Management in Pakistan is in its emergent stage as compared to other conventional professions such as medicine, accounting and law etc. However, it is a rapidly growing area in Pakistan and across the world where thousands of professionals are now associated who are responsible for planning, organizing, and evaluating of many events throughout the year.

FESTIVA is an event management company working on large scale in the country. The company deals with the Birthday parties and marriage ceremonies. They want to automate their system. You are required to develop a web based database application for the company so they can take orders online.

Functional Requirements:

1. Client can register him/herself for booking an event.
2. There must be a login process for admin and clients to avoid unauthorized access.
3. System should save all the necessary information of the clients.
4. Clients can change any of their requirements any time.
5. System should record the order details.
6. There must be a list of all types of services the company is dealing with the available themes.
7. System should display list of available venues.
8. System should ask for Catering and Food Presentation.
9. There website should display the photographs of the events held by company.
10. Clients can provide feedback about services.

Tools:
C#
SQL Server
(Any modern language tools)

Supervisor:
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GYM Buddy

Project Domain / Category
Web Based Application System

Abstract/Introduction
Gym Buddy is a user friendly website with the main target to help those who are following some fitness plans. It not only helps the Gym makers to manage their activities but also assist its members in their day to day activities. Gym members can now monitor their whole day diet and exercise plans. The performance graphs keep their pace up to achieve their goal. If the diet plan cannot be followed for some reasons, system will modify exercise plans accordingly. Members are now able to be connected 24/7 with their instructors and their class through this website.

Functional Requirements:
Functional requirements can be divided into three parts with respect to the roles of the users.

Admin
Following actions can be done by the admin:
1) He can add gym members and gym instructors and create personal accounts of them.
2) He can create new classes and assign instructor to them.
3) He can keep the records of balance paid and to be paid by members and instructors.
4) He can add new exercise details and update the old ones.
5) He can add food details (calories associated) and update the old ones.
6) He can schedule class timings and any change will be communicated to users through inbox messages.
7) Any medical history of the user can be added by admin.

Note: New features are subject to be added from time to time in this domain.

Instructor
Following actions can be performed by the instructor:
1) He can generate general diet plan for the class.
2) He can assign specific diet plan to specific member.
3) He can generate exercise plan for the class as well as for specific member depending upon the history of an individual.
4) He can view medical history of his students.
5) He can share motivational quotes with the class.

Note: New features are subject to be added from time to time in this domain.

GYM Member
Following actions can be executed by the gym member:
1) He can see new notifications in his inbox.
2) He can update his status any time (like he enjoy something during exercise) which can be seen by other members of the class.
3) He can check his payment records and pay online.

4) He can set his target weight and the number of days suggested by him to achieve the target. Proper check and balance should be offered by the system
5) He can insert body weight weekly so that he can check his progress through graphs generated by the system.
6) He can follow recommended exercise plan from the instructor or can follow auto-generated one by the system. He can select by clicking which exercise is done per day and for how much duration. In this way, proper estimate can be calculated by the system for the target set weight.
7) He can follow the diet plan recommended as well as auto-generated by the system. He can make a food log taken per day so that calories burnt per day can be estimated with the input calories taken by the user in terms of food item. The system will calculate the estimated days to be exercised according to the plan followed for achieving the target weight.
8) The auto-generated exercise plan should be robust enough to accommodate changes in the diet plan done by the user.
9) Any queries can be directly asked from the instructor through mailbox.
10) Any promotions made by the gym should be seen in notification area.

Note: New features are subject to be added from time to time in this domain.

Tools:
Visual Studio (latest version) with .net Framework + SQL Server (latest version)

Development Language:
C# (C sharp) with SQL.

Supervisor:
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VOTING SYSTEM

Project Domain / Category

This project belongs to Database category.

Abstract/Introduction

"VOTING SYSTEM" is a way to cast vote by citizens of a country or state. In this system people who have citizenship of Pakistan and whose age is equal or above 18 years can cast his or her vote through computer rather than through ballot papers in polling station.

Functional Requirements:

A set of functional requirements of the proposed system may include the following.

1. There must be login process for administrator and authorized users to avoid unauthorized access to the system.

2. The administrator would enter detail of citizens.

3. The administrator would enter detail of candidates

4. The administrator would enter detail of election symbols (signs)

5. The administrator would enter detail of constituency.

6. The system would allow voter to cast his/her vote.

7. The system would compile and view the result of polling.

Tools:

(SQL Server 2008, VB.Net ect)

Supervisor:

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Recipe Maker

Project Domain / Category
Web Based Application System

Abstract/Introduction
In our daily lives we often find situations when we have some ingredients and want to make something delicious. When we search for recipes on internet then most of the time, recipes we found are not doable because one or more ingredients for that cuisine are missing. So, we are going to make a website which will be unique in its functioning. Main purpose of project will be to provide some recipe for the available food items. You will input your main food items in website and the website will generate some (one/more than one) recipes which are possible with the existing items. At first we will be dealing with 50 food recipes.

Functional Requirements:
1. First you have to choose some specific ingredients to work on them
2. After choosing a number of food items, you have to make a database of every possible recipe which can be made with those food items
3. In your website, users should be able to choose food items from available list of items
4. Your application should produce a valid recipe for the selected items
5. No such items should be listed in the menu which does not have any corresponding recipe
6. All recipes which contain chosen items should be displayed when searched
7. If there will not be any valid recipe then user should be properly informed about this
8. General spices/ingredients which are almost easily available like salt, pepper, onion, garlic, water etc will be ignored while searching for the recipe match

Tools:
Microsoft.Net(C#) + SQL Server/MySQL + php

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Information mining and retrieval

Project Domain / Category
Information mining and retrieval.

Abstract/Introduction
Search Engine actually is an information retrieval system that helps users to find information stored on computer system or systems. The search results commonly known as "hits" are presented in the form of a list to the users. The current search engines like Google, Yahoo and MSN hits millions of records against a single query. Among these millions of records it's very difficult and time consuming for the users to find the relevant information. These search engines search information based on key words mentioned in the query. Date sensitive search engines have the capability to give priority to the dates mentioned in the query. It will consider only dates mentioned inside the text (page contents) and not the date on which page is updated, created or published.

Student should be very careful while crawling web for creating indexes and plucking of dates from contents that mentioned in the contents because they may have different formats. There is need to handle all form of dates and dates references and convert them to ISO standard (ISO-8601) like YYY – MM – DD. Student need to maintain a list or local data base for storing dates and offsets at which they occur in document.

Students are required to select/specify a particular dataset to test and evaluate their project.

Main modules and their functions:
This project has the following basic modules:

1. Web Crawler:
   Web search engines work by storing information about many web pages, which they retrieve from the html itself. These pages are retrieved by a Web crawler which is an automated Web browser which follows every link on the site. The contents of each page are then analyzed to determine how it should be indexed.

2. Front end for query processing and their results:
   The front-end presents a search bar for users and the query processor parses the request and executes the search. The results are displayed by the front-end.

3. Data base:

   i.   Maintaining a list or database for storing dates specific information.
   ii.   Data about web pages are stored in an index database for use in later queries. The purpose of an index is to allow information to be found as quickly as possible.

Tools:

The following tools can be used for developing the above project.

1. Microsoft.Net, SQL Server
2. Java, SQL Server/MySQL

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Web Based E-Commerce Site

Project Domain / Category
Web based e-commerce site

Abstract/Introduction
Through the web site, user will be able to buy different products such as cell phones, electronics, jewelry etc. The site will offer shopping cart, different subscription options for membership, and membership discounts.

Functional Requirements:
This site should offer the user a variety of products through proper navigational structure. It means that each product should be listed under the appropriate category. For example the product LED TV should be under the Electronics category. Your site should allow the admin to create any number categories and products but initially it should be showing maximum of 5 to 6 categories. The following points should be strictly followed while developing the site

1. The content should be visible to everyone (member/non-member)
2. The site should have a registration/membership page where different types of memberships should be offered to the user
3. Membership types will include Bronze, Silver and Gold which will offer 5%, 7%, and 10% discount respectively on each product that user will buy
4. In case of non-member the user should be charged with full price of the product
5. In case of member user, he/she should be offered discount on the products according to the type of membership.
6. User should be able to buy a single product or add multiple products into a shopping cart and then buy all at once
7. In either case, the user will be taken to the checkout page where the user will finalize the purchase of the selected product(s)

Tools:
HTML, CSS, PHP, Dream viewer, Notepad++, Wordpress, Wamp Server, My SQL

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Online Sales Information Web Portal

Project Domain / Category
Web Programming

Abstract/Introduction
Online Sales Information web portal is a web application dedicated for a unique experience of identifying sales on various products. Sale is a noteworthy part of the buying and selling process. Every organization put a greater amount of their energy in developing new ideas for Sale than they do for different things, on the grounds that they realize that individuals are more inspired by sales, discounts and promotion deals than the normal purchasing and offering. The product alerts people of all the 'available sales, discounts and promotions' on the leading brands in Pakistan at all the time. They can discover, rate and comments on all sale details on the website apart from it they can also subscribe with an option of SMS alerts on their cell phones.

Functional Requirements:
8. Admin, a brand representative and a subscriber shall be able to manage account.
9. Admin shall be able to manage users
10. Admin shall be able to manage all brands info.
11. Visitor shall be able to browse website to get info about latest sales.
12. Visitor shall open account on website to get latest update through email.
13. Visitor able to edit subscription, ratings, posted comments.

Tools:
HTML
CSS
JavaScript
PHP
Adobe Photoshop

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Online Job Portal-2

Project Domain / Category
Web based Application

Abstract/Introduction
The online Job portal will help both the Job Seekers and Employers in posting and searching the job. In fact it will be an online HR solution for Employers short listing the suitable candidates while job seeker can have job searching options with maintaining its CV and having appropriate CV format according to the profession with CV rating.

Functional Requirements:
* There must be a login process for admin, employer and job seekers to avoid unauthorized access.
* The job seekers should be allowed to edit and view his/her personal information with login access.
* The employer should be allowed to maintain company information with posting the jobs with login access.
* The system should allow the search jobs for Job seekers of both registered and unregistered (guest) category.
* The record means personal and educational information of the Job seekers, employers and jobs posted.
* The system should allow the users to add new record, update record, delete and save records.
* The system should allow viewing the reports like Short listed candidates (based on education and experience) for the employer and the CV for the job seeker.
* The job seekers should be able to view their position in the job applicants list.

Tools: Microsoft.Net, SQL Server and any other supporting tools

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Smart Study Planner

Project Domain / Category
Android Mobile Application

Abstract/Introduction
Smart Study Planner is a mobile app available as a cross-platform planner designed to make your study life a lot easier to manage. It allows you to save your assignments, classes and exams in the cloud and synchronizes them across all your devices so you can access them wherever you are. It is very useful application for students of all levels which could help increase your study habits significantly.

Smart Study Planner also allows teachers to create and share their timetables securely with students in the same institute.

Unlike a paper planner or school diary, Smart Study Planner integrates all areas of your academic life, see homework due and overdue for classes, classes which conflict with your exams and even add revision tasks for a specific exam, easy to use application.

Smart Study Planner seamlessly syncs your data between devices, allowing you to use the app even when offline. You can add a task on the move from your phone or tablet and it will be instantly available on the web app.

Functional Requirements:
The main objective of the proposed mobile app is to help the users in the study. This mobile app will allow following features to users

1. **Track your tasks**: homework, assignments, reminders and revision. Store your tasks with ease in the cloud, accessible anywhere.
2. **Assignment:** record the due assignments and notify the incomplete task, widgets to quickly access the assignments.
3. **Calendar:** record the class schedule, when enter the course ID it shows the weekly schedule of that course.
4. **Store exams**: keep those all important exams alongside your classes, tests, quiz and revision tasks.
5. **Manage your classes** - your paper planner, turbocharged. Supporting day and week rotation timetables advanced academic year/term support and integration into tasks
6. **Notifications**: reminders for unfinished tasks, upcoming exams and classes before they even start.
7. **Customize menu:** A list of common links that are usually displayed as the main navigation for your app.
8. **Share** - Smart Study Planner allows teachers to create and share their timetable securely with students in the same school.

<u>Tools:</u>

Software specifications:

Development environments / IDEs for Android application

Java and xml

<u>Supervisor:</u>

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Digital Classroom

Project Domain / Category
Mobile Apps

Abstract/Introduction
Digital Classroom will be an online android-based mobile phone application for academia including faculty members, students and parents. The overall objective of this app is to provide online platform for teachers, students and parents to manage and stay informed about teacher/student educational activities, keep-in-touch with class, schedule, electronic resources, announcements, and communication among themselves along with reporting feature. This application will engage all users in a collaborative social environment to improve overall learning experience through online interaction. Moreover, it will inform all registered participants with latest updates about class activities, schedules, results anytime anywhere, help students to track their performance, assist teachers to manage e-resources as well as students at the same time.

Functional Requirements:
1. The system shall provide facility for users to online register and manage profile in a secured, reliable manner.
2. The teacher shall be able to upload and/or share online class resources for their students including; course contents / overview, notes (handouts), FAQs, course books, grading scheme. (i.e. supporting popular formats including Microsoft Word, PowerPoint, Excel, Adobe).
3. The students shall be able to access (view and/or download) online class resources uploaded by teacher.
4. The system shall provide facility for parents to stay informed about all educational activities of their children.
5. The system shall have functionality for online communication and collaboration among all users in a secure and reliable way through Online forum, SMS feature, Email, Facebook / Twitter etc.

Tools:
1. IDE: Android Studio 2.1 (or later) for Windows; including Android Software Development Kit (SDK)
2. Programming language: JAVA
3. Database: SQLite
4. Unified Modeling Language(UML): Microsoft Visio, IBM Rational Rose

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Lecture Scheduler

Project Domain / Category
Web Application

Abstract/Introduction
Lecture scheduler application intends to provide a web-based solution for scheduling of lectures in a typical conventional university. In conventional universities, at the start of each semester, a schedule is (manually) developed that caters: students enrolled in offered courses, faculty members instructing the offered courses, classrooms and labs where lectures are delivered to students. The proposed lecture scheduling application intends to create schedule on the basis of information of: courses' enrollment, faculty members' course preferences, available classrooms and labs.

The application will:

- take as input, through Web: courses to be offered, students enrolled in offered courses, details about faculty members and their courses' and day preferences, classrooms and labs available their capacities, and
- output a lecture schedule

Functional Requirements:
The application should be able to:
1. manage record of offered courses
2. manage record of students
3. manage record of faculty members and their courses' and day-time preferences
4. manage record of classrooms and labs
5. Calculate a lecture schedule on the basis of given data.
6. Provide User Management facility. Stakeholders of the application are Admin, faculty member, class coordinator, student (to view the class roster) and Assistant Academics.

Tools:
Students may use any Web development tool and its relevant DBMS

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Recommendation based Online Grocery Point

<u>Project Domain / Category</u>
Web Programming

<u>Abstract/Introduction</u>
This project is a web-based E-commerce application providing a platform for online shopping of grocery products. Online Grocery Shopping refers to the use of retailers websites for purchasing grocery products. Customers can make order of their choice after viewing the available products, where they will be just one click away from their desired products. Registered customers can benefit from membership discounts, other customers' reviews and products suggestions based on our recommendation system.

This project aims to develop a recommendation system for online grocery shopping by incorporating two additional considerations, i.e., product replenishment and product promotion. The proposed recommendation system will provide customers a better recommendation list to fit their consumer expectations, needs, and budget considerations and will finally boost online shopping.

<u>Functional Requirements:</u>
- Login process/ authentication for administrators and customers (Sign up and Sign in/ Sign out) to avoid unauthorized access
- Administrators can add and remove products along with product details
- Administrators can manage the sale/shipment/payment processes and return/exchange
- Customers can search products (along with details), select and de-select products (to/from shopping cart) online
- Customer can make payments online via debit/credit card or cash on delivery
- Product searching criteria (for customer) based on customer's interest/ shopping history and our recommendation system
- Special Offers Products Management
- Gifts Management (in case of lucky draws)
- Product Recommendations based on customer's interest/ shopping history and product replenishment and product promotion

<u>Tools:</u>
Server side programming language: PHP, HTML and CSS
Client side scripting: JavaScript and JQuery
Database: MYSQL
IDE: PHP Storm
Local host Server: WAMP

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Virtual Library for VU

<u>Project Domain / Category</u>
Virtual Library / Web based Database Application

<u>Abstract/Introduction</u>

This software project is a Virtual Library with all the basic as well as some innovative features for managing a library. It consists of a large database of various books required by students in various subjects of their study program. It also provides the facility of delivering recommended books and handouts in hard-copy to respective students. The system keeps track of all the books readily available. The system also handles books database of every department of Virtual University of Pakistan. If the student needs a book, she/he can initiate the request for home delivery by just filling an online form. In case of cancellation of online order after certain time period, this system will calculate fine depending on the order amount and number of days. This fine will be added in their fee voucher.

<u>Users:</u> Administrator, Faculty Members, Students, Guest

<u>Functional Requirements:</u>
- **Admin login:** The system will be under sole control of the admin. Admin can add or remove books from the system and also maintains records of the book available in the library. The admin can even update the books details if required.
- **User login:** User has to first create an account in the system to gain access. User can explore and search for the books he wants. He can place order for the books.
- **Tracking the user record:** The system can track the user activity (search history, downloaded books, delivery orders etc.) on Virtual Library.
- **Quantity Update-** The quantity is updated by the system depending on the quantity available and ordered.
- **Alerts:** The system will have facility of alerts;
    1. *Stock Alerts:* This system will generate alerts for administrator when quantity of any particular falls below certain threshold value.
    2. *Availability Alert:* This system will generate alert to any user whenever his/her required book is arrived/available in Library.
    3. *Dispatch Alerts:* User will receive an alert whenever his/her order is dispatched.
- **View Order information:** The system will maintain record of all the orders placed by users. Users can view their order records as well.
- **Online search and order form:** The user may order the book online. The system provides a search option where user can order online.
- **Online payment:** User can make payment via various online methods.
- **Fine calculation:** If the user has placed an order and later cancelled it, system automatically calculates the fine that the user has to pay for subsequent days.
- **Database Connectivity:** The application will be connected to a database at backend which will store all the information about registered users and available books in the repository.

Tools & Language:

SQL Server, Visual Studio, Any language of your choice

Supervisor:

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Mobile (Android) based image compressor

Project Domain / Category
Mobile Apps

The images captured by the recent cameras often exceed 2 MB. Using such images frequently results in Out of Memory Exception, short of storage and also sharing such images may consume more bandwidth. To deal with these issues we need to compress the image size without any significance loss to its quality.

Mobile based image compressor software will select single, multiple images or full album for image compression and on tap of a button it will reduce the image size showing the progress bar. After compressing the image size it will save the newly compressed images into a directory and at the end will show a message showing No. of images compressed, and saved space.

Image compressor functional requirements:
Following are the required features of this project:

1. Must have a built in directory browser to access only images from internal or external storage of phone.
2. Must have a built in image browser to show images of internal and external storage
3. Must have a selection feature to select single, multiple images or full album of images from internal or external storage of mobile phone
4. Must have a setting feature where a user could select the default directory to store the compressed images
5. There should be a progress bar feature to show the progress of image compression
6. After images are compressed a message should be displayed showing No. of images compressed, and saved space.
7. Should have a sharing feature to share the compressed images
8. Compressing the image should only reduce the image file size and not the resolution.

Supervisor:
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Application Type	Tools & Technologies
It will be an android based application	Android Studio\ Eclipse

"E- Library Management System"

Project Domain / Category
Web Application

Abstract/Introduction
E-Library Management system is used to provide a medium for the libraries to computerize their entire functioning and would contribute as a first step in digitalizing their libraries. Libraries had their entire records on paper which again required maintenance and the problem of finding relevant information proved to be a difficult task. Even if the required information was found it was usually at cost of much valuable time. E-Library Management would not only simplify this process but also speedup the entire functioning of the library. It will also contribute towards increasing the efficiency of the libraries a whole, right from the data entry to maintaining the historical records. One major purpose is to provide user or the library members the opportunity to not only search through the books online but to reserve books that are issued by other users and also request newer books.

E-Library Management System is a web based application. Here the student having an account can request the book and the librarian can issue the book based on his request. If the student does not return the book on time fine will be added. Student can search for other books or can view the details. If the book is not available the student can reserve the book for them.

Functional Requirements:
The main objective of the proposed system is to help the user. The system can facilitate the user in the following ways:
- ➢ To provide multi user login facility and a user friendly system.
- ➢ To manage the details about the previous issued books, requested books and returned books etc.
- ➢ To generate reports based on the records available.
- ➢ Reduce the manual work and time consumption

Module Description
- ❖ **Books:** This module consist the details of the books available in library and their categories. It also contains the list of books in each category and their details.
- ❖ **Manage Books:** In this module you can check which book is available and issued.
- ❖ **Student Account:** To issue a book from the library, one should have an account in the library. The registration contains all the details about the student like registration number, name, address, contact number etc.
- ❖ **Book Request:** This module is used by the student to request a book from the library. The search can be performed by using name of the book, author name, and subject name.

- ❖ **Issue of books:** This module is used by the librarian to issue a book based on the request made by the student.
- ❖ **Renewal of books:** This module is used by the admin to renew the book. If the book is already reserved for others then that book should not be renewed
- ❖ **Returning Books:** In this module the librarian maintains the details of the books returned by the student, which also includes the fine details, damage book details, lost book details.
- ❖ **Reports:** This module includes the details about the issued books, returned books, student reports, fine reports, or details of the book which are not returned.

E-Online Library Management Software can be applied to large databases with more information. Hence it reduces time consumption and speed up the work

Tools:

Software specifications:
- *Technology Implemented   : Apache Server*
- *Language Used   : PHP 5.3*
- *Database   : My SQL 5.5*
- *User Interface Design   : HTML, AJAX ,j query*
- *Web Browser   : Mozilla, Google Chrome, IE8*
- Software   : XAMPP Server

Hardware requirements:
- Operating System   : Windows XP/Windows 7 or above
- 40 GB hard disk and above
- 1 GB RAM and above
- Peripheral devices

Limitations
- Internet connection is required.
- If the server is down it takes time for loading.

Future scope of the project
- Book reading facility can be provided through on-line

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B2C Online Store

Project Domain / Category

Web Application

Abstract/Introduction

The business-to-consumer aspect of electronic commerce is the most valuable business use of the World Wide Web. The primary goal of an online store is to sell goods and services online. Keeping the features of an e-commerce site, online bookstore website software project acts as a central database containing various books in stock along with their titles, authors and costs. It provides customers online book(s) shopping facility from their homes. A customer can sign up for free, login to his / her account, can browse books of his / her own interest, can view prices and other details of selected books, place books into shopping cart and pay bill using his / her credit card details.

This website project will be developed using ASP.NET as the front end and SQL as a back-end. The SQL database will store information about the books and other details. Any customer visiting the bookstore website can see a wide range of books arranged in corresponding categories

Actually, it's a virtual store on the Internet where customers can browse the catalog and select books of interest. At checkout time, the items in the shopping cart will be presented as an order to the customer. At that time, more information will be needed to complete the transaction. Usually, the customer will be asked to fill a form containing information about shipping address and other details, and payment information such as credit card number etc. An e- mail notification will also be sent to the customer as soon as the order is placed.

Functional Requirements:

1. The system shall provide convenient interface for User Registration, Book Search, and Payment.
2. The system shall be capable to generate invoice bill and Customer shall be able to pay it online.
3. The system shall provide Password Recovery facility through customer email id.
4. The customer shall be able to trace his / her order later on. Administrator shall also be able to trace any order easily.
5. The customer shall be convenient to search books using an easy search interface.
6. Every order shall be allocated a unique identifier *(ORDER_ID)* which the user shall be able to copy to the account's permanent storage area.
7. Both admin and customer shall have different views. i.e. Administrator View and User View
8. Customer shall be able to get notifications on his / her email id.

Tools: ASP.NET, C#,VB.NET, SQL Server

Supervisor:

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Cooking Website

<u>Project Domain / Category</u>
Web Based Application

<u>Abstract/Introduction</u>
"Recipes Management System" will allow Administrator to manage the user and recipe Management Record. With this website, users can view different recipes by categories of Cuisine type, chefs and ingredients based. Registered users will be able to add new recipes and add their reviews. System will suggest similar recipes relevant to user's search.

<u>Functional Requirements:</u>

- User will be able to search recipes by categories, by Chefs
- User will be able to view videos of recipes
- User will be able to view profile of different Chefs
- Website will also manage "Most popular recipes"
- System will suggest similar recipes based on user's search
- User will be able to submit reviews on recipes
- User will be able to make login
- Registered user will be able to add new recipes

<u>Tools:</u>
Microsoft.Net, SQL Server

<u>Supervisor:</u>
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Online matrimonial service provider

Project Domain / Category
Mobile Application

Abstract/Introduction
This application is basically online matrimonial service provider for all registered members freely. Once you register your matrimonial profile on an online match-making application installed on your mobile, they will notify you with all the requests made by fellow users. Although the application will also find the members requirements and intimate them on periodically basses.

Functional Requirements:
1. It should be a mobile base application.
2. The user will register himself to find matrimonial records according to requirement.
3. The software should give the option for more than one matrimonial registrations.
4. The software should give the option to all members to create their matching list for their considerations.
5. The software should give the option to deal with missing values or to edit any record at any time. Once a record will be updated a notification of updated record should be sent to all matching members.
6. The software should give the option to deal with non-serious members who reported as unethical behavior according to concerned rules.

Tools:
Development environment:
Android Studio, Eclips, Java, Microsoft.Net framework, or any other modern programming language

DBMSs
SQL Server, MS Access, MySQL, Oracle

Supervisor:
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Clinical Decision Support System

Project Domain / Category
Decision Support System

Abstract/Introduction
Clinical Decision Support System (CDSS) is a system that provides clinicians, staff, patients and other individuals with knowledge and person-specific information, intelligently filtered and presented at appropriate times to enhance health and health care. Over the past few decades there has been a significant shift towards developing intelligent systems to help humans in decision making in different domains of life. CDSS is one of them. These kinds of software use relevant knowledge, rules within a knowledge base and relevant patient and clinical data to improve clinical decision making on topics like preventive, acute and chronic care, diagnostics, specific test ordering, prescribing practices etc. A CDSS correlates data about patient traits with a trustworthy knowledge base to guide a clinician with patient-specific advice, assessments or recommendations. Clinicians, health-care staff or patients can manually enter patient characteristics into the computer systems; alternatively, electronic medical records (EMR) can be queried for retrieval of patient characteristics. These kinds of decision-support systems allow the clinicians to spot and choose the most appropriate treatment.

The value that CDSS brings to clinicians, patients, medical staffs and health organizations is immense and proven. Hence, health organizations around the globe always pursue to implement CDSS to improve quality of care and thereby improve patient satisfaction, to reduce costs and finally to attract and maintain medical staff. The purpose of this project is to develop an indigenous state-of-the-art CDSS to help practitioners, at any level, in their daily life clinical decision making and thus improve the health care in developing countries like Pakistan where health conditions are already alarming. This simply means that clinicians will interact with a CDSS to analyze and reach a diagnosis based on patient data.

Functional Requirements:
The proposed CDSS will be complete application providing state-of-the-art decision support services to practitioners at various levels. The main services provided by the proposed application will be:

1) Diagnostic assistance:
Based on the patient's data and the system's knowledge base, the CDSS will provide likely diagnoses. This is beneficial when the clinician is not confident with his or her knowledge on a certain condition or when the patient's symptoms are complex or seemingly unrelated.

2) Drug dosing or prescribing:
Overall prescription of medication is one of the commonest tasks of a physician. CDSS will have the power to reduce toxic drug levels, reduce medical errors and change prescribing in accordance to guideline recommendations. Such systems have been widely accepted, since they are well integrated into a routine part of the clinician's workflow.

3) Test selection:

Based on the patient data/history, the system will be able to suggest relevant medical tests. Test will be selected on the basis of pre-defined protocols and guidelines already present in the system.

4) Alerts and reminders:

A CDSS will alert the doctor or physician when certain input data is alarming or a potential risk to the patient. For example, if a patient has a history of cardiac issues and the system reads that their blood pressure is abnormally high it can alert the doctor of the abnormality.

5) Logical Reasoning:

One of the problem faced by many practitioners is to provide logical reason in case if any of the standards or recommendation is deviated. System will provide complete reason or root followed to reach a decision.

High Level Architecture:

Architecture will comprise of three main components.

Working memory: Working memory will contain the current facts and figures taken from the patient. This will be a temporary memory to store current patient data.

Knowledge Base: Knowledge base will be the actual data store for the CDSS containing the rules and protocols for actual diagnostics. Rules will permanently be saved here. This will be dynamically updated i.e. knowledge base will be updated every time new facts are discovered.

Inference engine: This is the actual processing unit that will perform diagnostics using the facts from working memory and rules from knowledge base. User will interact inference engine to perform different tasks.

Note: Same architecture (described above) will be followed for all modules. Figure below shows the architectural diagram of the system.
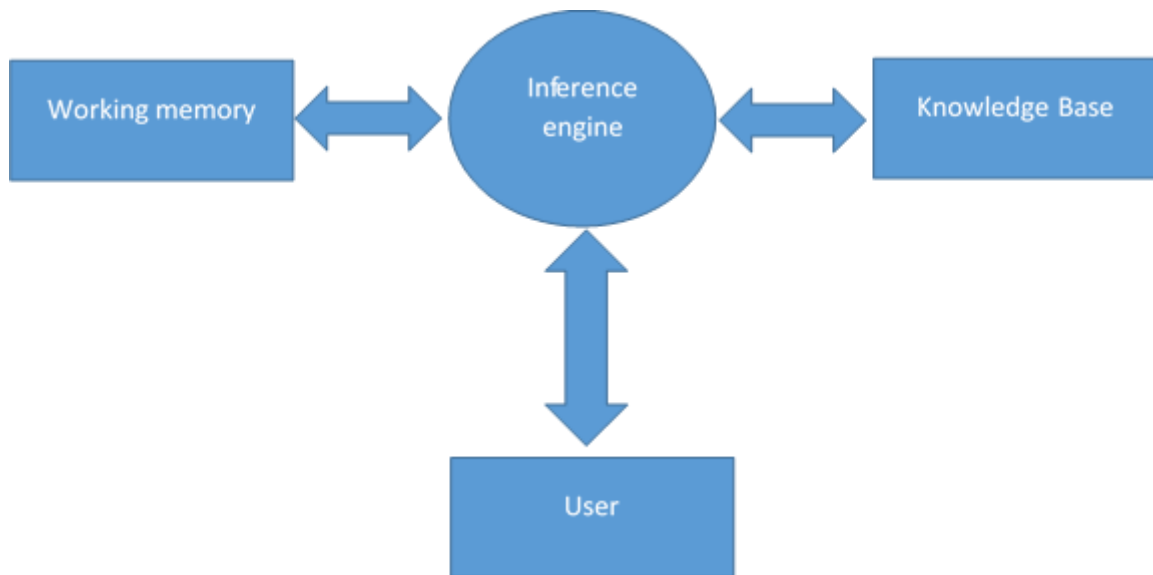
Release details:
As the project is very broad in scope, so keeping time duration of semesters in mind, project may be developed in release where each release will comprise of a single module described in functional requirements section.

Tools:
Microsoft.Net, SQL Server

Supervisor:
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Virtual Tuition Management System

<u>Project Domain / Category</u>
Web Based Application

<u>Abstract/Introduction</u>
Current mode of tuition is either home tuition service or joining a tuition academy for doing tuition. Problem with this system is the limited availability of high class tutors who are gurus in their subject.

Virtual Tuition Management (VTM) system is a system that provides the services of tuition over the internet. The proposed system will provide a virtual communication channel between students and the tutor over the internet. Students that have no or less access to high quality tutor related to their subject can take benefit of this system.

<u>Functional Requirements:</u>
Virtual Tuition Management (VTM) will be a web based application providing following tasks:

Modules

1. User Management
   Five types of users will interact with this system:
   - Administrator
   - Accountant
   - Teacher (Tutor)
   - Student
   - Parents

   Administrator will perform all management related activities. Teachers will register and build their profile. After verification, the tutor performs other activities according to his requirements. Students will register and can select tutor for tuition according to their requirements. Parents can view the progress of his child.

2. Schedule Management
   Schedule management is performing at different levels. At first level the tutor will advertise his availability timing. Administrator will advertise final schedule after students in particular course tuition is finalized.

3. Financial Management
   Financial management will be done by accountant. This module includes the management of tuition fee of the student and teachers pay accordingly.

4. Resource Management
   Resource management includes the activities related to resources required for tuition i.e. a teacher may upload some material related to course tuition.

5. Test management
   This module will allow teacher to take quiz or other assessment mechanism in order to test the learning of the students accordingly.

6. Announcements
   This module will deals will all the announcement related to class schedule, vacations, and so on.

Tools:
ASP.Net, SQL Server

Supervisor:
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Virtual Physics Lab for High School (Electronics)

Project Domain / Category
Desktop Application/ Intensive Programming

Abstract/Introduction
Through Virtual Physics Lab for High School (Electronics) student of school level will be able to perform various electronics related experiments in virtual environment. This will be very helpful project distance learning at school level. It will be basically a circuit simulator but the main focus will be all the circuit related study at schools of Pakistan.

Functional Requirements:
1. Software will simulate the basic circuit theory.
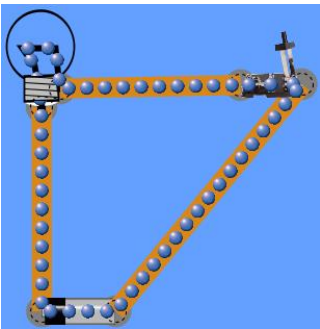
2. This software will simulate Series and Parallel circuits
3. Will be able to simulate simple components like Resisters and Capacitors.
4. Will provide functionality of basic Voltmeter.
5. Student will be able to rearrange the components or change the values of resisters , capacitors, LEDS & Batteries.
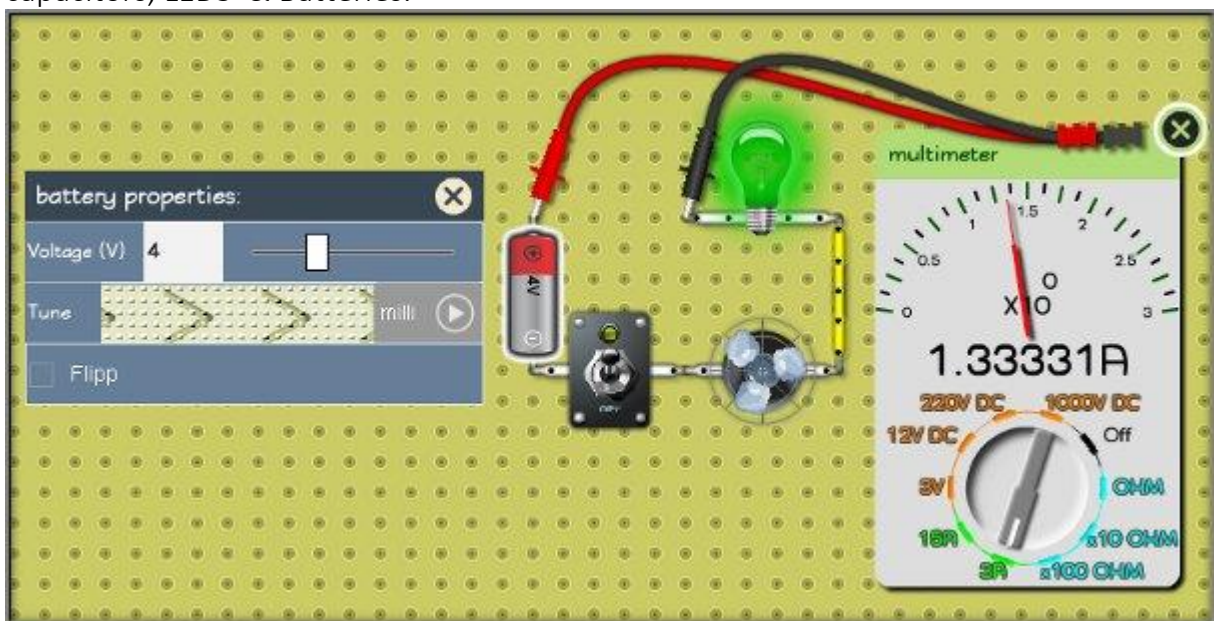
Tools: Java, ASP.NET,
Supervisor: Name: Muhammad Imran Email ID: mimran@vu.edu.pk
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Online Rental vehicle system

Project Domain / Category
Web based Application

Abstract/Introduction
Online Rental vehicle system is a web based application that facilitate customer to rent a vehicle from everywhere through web and to help people who are looking for cheap and comfortable rides with verified and trusted driver. As we know that public transport is not good in Pakistan so this system will provide vehicle rental platform for everyone. This also tells the position of vehicle through GPRS in a vehicle. This web based application will use best navigation tools or techniques in order to fulfill the principles of Human computer Interaction .

Functional Requirements:
This system has two types of users Admin and customer or passenger. Admin can do vehicle management, Fleet management, as well as customer or passenger management.

1. Vehicle management
   This involves registering vehicle on a website by its number, model and type etc. Vehicle management will Add, Update and Delete vehicle .This also add and update rental agreement which will offered to passenger or customer before reservation of a vehicle.

2. Fleet Management
   Fleet (vehicle) management can include a range of functions, such as vehicle maintenance, vehicle   tracking through GPRS, driver management, and fuel management.

3. Vehicle Reservation
   Customer first get registers on a website by accepting the rental agreement, and confirm vehicle reservation.

4. Feed back
   In this tab customer will give feedback regarding the service vehicle as well as driver. In this tab complaints also managed.

Tools: Java/net Framework And Sql server.

Supervisor:
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B2B Web Application

<u>Project Domain / Category</u>
Web Application

<u>Abstract/Introduction</u>

In day to day life we buy a lot of products from shops, in today's busy life sometimes it looks very hard to spare extra time and go to market for shopping, in such situation so many people prefer online shopping. In order to solve this issue B2B website's development started. By using these websites we can easily buy products just and visiting the website and can order the products online and make online payments of these products.

Online shopping system helps in buying products from the listed products from different categories given on the website.

<u>Functional Requirements:</u>

This bulleted list should contain all the functional requirements of the project. These should be detailed and comprehensive about the proposed project. Very small or very large list of requirements is not recommended.

1. Customer be secured with registration number and can easily navigate through pages.
2. Secured payment methods.
3. At admin side, admin can add delete or modify the website according to the available products.
4. Admin can also keep the record of sale products, in order to watch their total income or loss.
5. This application could both be easily accessed on desktop and on mobile.

<u>Tools:</u> Microsoft.Net, Java, PHP, SQL Server, MySQL etc.

<u>Supervisor:</u>
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Opinion Mining for Social Networking Site

Project Domain / Category
Web Based Data mining

Abstract/Introduction
Opinion Mining for Social Networking Site is a web application. Here the user will post his views related to some subject other users will view this post and will comment on this post. The System takes comments of various users, based on the opinion, system will specify whether the posted topic is good, bad, or worst. User can change his own profile picture and can update his status. These changes can be viewed by various users. We use a database of sentiment based keywords along with positivity or negativity weight in database and then based on these sentiment keywords mined in user comment is ranked. Once the user logins to the system, user can view his own status as well as he can view the topics posted by other users. When the user clicks on a particular topic user can give his own comment about the topic. System will use database and will match the comment with the keywords in database and will rank the topic. User can edit his own profile and can change his profile picture. The role of the admin is to add post and adds keywords in database. This application can be used by users who like to post view about some events that is already held, or can post about the events that is going to be held. This application also works as an advertisement which makes many people aware about the topic posted. This system is also useful for the user's who need review about their new idea. This system is also useful for the user's who need review about any particular event that is posted.

Functional Requirements:
1. **Admin Login: -** Admin login's to the system using his Admin ID and password.
2. **Add Post:** - Admin can post topics.
3. **Add Keywords:** - Admin add keywords in database so that system will match the comment with the keywords in database and will rank the topic.
4. **User Login: -** User login's to the system using his user ID and password.
5. **Comment:** - User will post comment on the topic.
6. **View Comment:** - User can view comment of other user's.
7. **Rating Calculation:** - System will match the comment with the keywords in database and will rate the topic.
8. **Edit Profile:** - User can edit his profile and can change his profile picture.
9. **Status:-** User can view status and can change his status.

Tools:
- Windows Xp, Windows 7
- Sql Server 2008
- Visual studio 2010

Supervisor:
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Performance evaluation and prediction of wireless communication networks

Project Domain / Category
Wireless Communication networks

Abstract/Introduction
In wireless communication mobility is the most important feature where continuous service is achieved by supporting handoff from one cell to another. Handoff / Handover is the mechanism of changing channel associated with the current connection while call is in process. Handover is initiated when mobile terminal moves from one cell to another or the signal quality deteriorates. The rejection of an ongoing call is more objectionable and had diverse effect on QoS than a new call. A number of priority schemes have been devised to improve performance of wireless networks.

In this project students will do simulations to check the validity of Analytical priority schemes devised.

Functional Requirements:

1. Mean number of packets/calls in queue
2. Mean number of packets/calls in system
3. Mean number of packets/calls in service
4. Waiting time
5. Number of blocked packets/calls

Tools: NS2, Omnet

Supervisor:
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A Tic-Tac-Toe Game between two computers

Project Domain / Category
Game Programming/Network Programing

Abstract/Introduction
The Tic-tac-toe is a simple and interesting board game which is played between two players in n x n grid of squares. The square can be filled by different symbols such as tick (✔) and cross (X). One player can use only one symbol, while other symbol is used by other user. The game is played in turns between two player giving them chance to mark their moves. This process of alternating moves is done until one of the players has drawn a row of three symbols in a horizontal, vertical, or diagonal row.

In this project, this game will be played by two users on two systems. First system will be server while other will be client. One user will play on server machine while other user will play on client machine. The game will contain two levels, basic and advanced. In a basic level, players can play in 3 x 3 grid. Advanced level will allow players to play in 4 x 4 grid. The players will be allowed to choose any of the symbol. The game will be started by any of the user and then it will be played in turns until any of the player gets succeeded in placing three of his/her marks in a horizontal, vertical, or diagonal row.

Functional Requirements:
1. The server system should be started and client systems should be connected to it.
2. The players should be designated as Player1 and Player2.
3. The system should allow both players to start the game.
4. There should be an interface showing game levels and help menu.
5. The help menu should contain all instructions to play the game.
6. The players should select any of the game level.
7. The same level should be selected by both players.
8. In case of basic level, a board comprising of a 3 x 3 grid of squares should be drawn on screen.
9. In case of Advanced level, a board comprising of a 4 x 4 grid of squares should be drawn on screen.
10. The system should allow players to select their respective symbols to mark.
11. The system should allow Player 1 to start the turn by placing his/her symbol on any of the squares.
12. The marked square box should be locked by the system so that other user could not mark it again.
13. The system should allow player 2 to get the turn the turn and mark his/her symbol on the remaining empty squares.
14. The system should allow both players make their turns alternately.
15. The system should declare winner player if any player gets the three respective symbols in a horizontal, vertical, or diagonal row.

16. If both players fails to place their respective marks in a horizontal, vertical, or diagonal row, then game should be terminated or user should be asked to play again.

Tools:
Microsoft.Net (C#). Etc.

Supervisor:
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Smart Call Management

Project Domain / Category
Android Mobile App

Abstract/Introduction
Call Management application will allow user to analyze his/her call history and block any unwanted call by blacklisting the number. With the help of this application, user can analyze call details (such as dialed calls, received calls or missed calls along with their time stamps and duration). In case of unwanted calls, user can block or mute the caller so that whenever a black listed number makes a call to phone; the application should automatically disconnect the incoming call. The application will allow user to enter the numbers manually to mark it as a blacklist number and also allow user to blacklist any incoming call directly. Furthermore, user can unblock any blacklisted number. A database will be maintained to store these records.

Functional Requirements:
With the help of this application, a user should be able to:

1. Analyze call details of any particular phone number.
2. Add any phone number to block list and make it blacklisted (A database should be maintained for storing blacklisted numbers).
3. Automatically block the unwanted incoming call.
4. View all blacklisted phone numbers stored in the databases.
5. Delete any blacklisted phone number from block list.

Student may include additional features to make this application more effective for consumers.

Tools / Technologies:
Android Studio

Supervisor:
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Calculation of Islamic Salah times.

Project Domain / Category
Database Application

Abstract/Introduction
Daily time keeping and time calculation of major events in advance has been very important since ancient times when human knowledge was passing through an age of infancy. Telling the occurrence of several forthcoming solar and lunar eclipses was known even in the times of prehistoric civilizations such as the Babylonians and Egyptians. The use of calendar was also known in these societies.

For the Muslims, calculating the clock-times of *Salah*, the most important *ibadah* (worship) in Islam, and having them tabulated was very appealing so they laid down rules and principles for their accurate and precise calculation. Similarly, the prediction of crescent visibility was another source of interest to them, because another important ibadah i.e., keeping the fasts of *Ramadan* was associated with the visibility of the new moon. The correct time of crescent visibility has thus been critical to the initiation of the new month as sometimes erroneous observations would lead to conflicts among laymen. The great Muslim astronomer *Abu Raihan Muhammad bin Ahmad Al-Beruni* was one of the earliest people who worked considerably on this issue.

The project aims at calculating precise and accurate salah times for the entire world or a country by developing an easy to use and intuitive GUI application, named "*Salah Times 2016/17*" which is backed by the well-known and powerful MySQL database server. Currently, the data about all geographical locations is unavailable to the project but the program will offer the facility to its users to supply just a nominal set of data such as *latitude*, *longitude* and time *zone* for their geographical location of interest and enjoy the full power of the program.

Functional Requirements:
1. On booting the software will get the current date and time from the system and will show it to the user.
2. The user will provide coordinate plus zone information, if the coordinates are not listed in the software.
3. The software will produce a text file of a single day, month and a year as well depending on the requirements of the user.
4. Other information will be hardcoded like lunar information in the system, it should be known to the programmer not user.

Tools:
Programing Language: Java SE 6 (jdk1.6.0_11) – The Most Popular Open-Source Platform-Independent Programming Language of Sun Microsystems, MySQL Server.

Supervisor:
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Skype ID: to_shah

Network User Monitoring System (NUMS)

Project Domain / Category
Networks / Desktop Application

Abstract/Introduction
In a business enterprise, managers always want to keep track of the day-to-day work. These days, enterprises are wired enough to make their employees use computers and the Internet. All this makes the business to sail smoothly (at least in theory).

But, from the other end, use of IT makes the job of managers and analysts more miserable because they have to check what their employees are doing with their computers. For instance, an accounts clerk may be surfing the Internet all the time.

The system will be multi-tier, network software. It will be implemented for PCs running under Microsoft's server class operating systems. It should be a system with a small footprint. The socket interface will be used to connect client and the server. Server will be multi-threaded. TCP packets must be used to send compressed images to the server at a certain frequency. MPEG-1 stream can be used but will require CBR (constant bit rate) and more bandwidth. It might be considered as an addition to the system later.

The daemon running on the client must be well aware of the activities performed and must use a XML protocol to send that information to the server. The server might be able to store its logs and the stations' logs in a database or in files.

Functional Requirements:
The proposed Network User Monitoring System (NUMS) Server will be a multithreaded server implemented as a windows application using MFC. It will use TCP/IP suite to communicate among the clients and the server. It will have a standard windows interface and will be user-friendly. It will have a user's manual and a help system. It will have a TCP socket interface to send and receive packets. In addition, the architecture of the server is component based.

The important tasks of the server include:

1. Receiving compressed image from the client from its TCP port.
2. Examine the headers to identify the host.
3. Registering/Un-registering the client.
4. Rendering image to icon/full-screen.
5. Send receive messages from TCP port.
6. Web browser history.
7. Client machine information.

The proposed Network User Monitoring System (NUMS) client will be a special agent running as a service in the client workstation when it boots up. No one except administrators can remove or control this service. In other words, it, is like a daemon process.

The important tasks of the Client include

1. Capture screen's bitmap image. Compress it using Jpeg, Jpeg 2000, PNG or GIF compression. Package it into a TCP datagram. Locating server on the network. Send it to the port on the server at optimal frequency.
2. For the messaging sub-system, it must host a TCP socket to accept/send messages to and from the server.
3. Capture Web browser history to the request of server.
4. Capture machine information.

<u>Tools:</u>
Microsoft .Net framework, Visual C++. NET, Microsoft Visio

<u>Supervisor:</u>
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Skype ID: jawadzaheerch

Android Cache Clear Application.

Project Domain / Category
Android Mobile application.

Abstract/Introduction
Cache Clear is an Android mobile application clear your mobile cache memory very easily, Cache clear is easier to manage. It allows you to clear your mobile cache and clean-up cache data of the applications. As your mobile fill with junk files it slow down the working of your mobile. Cache clear" is a fast clearing tool which can help you clean up cache and traces. After cleaning up these data, you phone system will be effectively optimized, so it runs more efficiently! "Cache clear" is Android phones' good helper! We hereby notice you that the product needs "contacts permission" to clear your call & SMS log.

Functional Requirements:
- One touch clear: clean-up app cache and Internet traces by just one touch without extra steps, fast and easy to use!
- Cache clear: clean-up cache data of the applications, user-friendly design!
- Traces clear: you can clear traces of Internet alone, Internet traces includes: browsing history, Gmail, search records, Market search records, Google Maps search records and the clipboard.
- Auto clear: you can select auto clear on/off in settings.
- When auto clear is enabled, this app will clear according to the frequency you set. (The default clear frequency is every day)
  Note: Auto clear can only process when the phone is on
- Desktop Widget: By touching Desktop Widget, you can quickly clean up (data cache and Internet traces) without opening the main page. Easy to use!

Tools: Android Studio, Eclipse, SQLite (if required), etc.

Supervisor:
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Security system for android phone using GPS tracking

Project Domain / Category
Mobile Apps

Abstract/Introduction
Security system for android phone using GPS tracking

This is an application which will tell you when you trigger it. This application has enlistment module where client can enroll them self utilizing their name, telephone no, email id, and secret key. What's more, you will access web application and additionally application access. On the off chance that one fine day your telephone gets lost then you will need to login into web application and trigger the lost telephone catch. And after that application will take a photo first and after that will send the GPS co-ordinated to the web application utilizing which client can track the telephone. Also, when client changes sim card the application will consequently run itself and its telephone no and it is not accessible then sim no and send it by means of sms to the enrolled no and alt number. What's more, this utilizing web application client can find the hoodlum. Web application will contain login structure utilizing which client can trigger the application. Furthermore, it additionally permits client to see the area and picture of the criminal.

Functional Requirements:
Two applications will be developed:
a. Android application
b. Web application

1. First client needs to enroll their name, telephone no, email id, and secret key in the application.
2. This information will be stored in the android phone and web application.
3. Adroid application can take photo and send GPS coordinates to web application.
4. Android application can also track number and send sms to alternate number in case of sim change.
5. The owner can have photo, GPS location and number of the theif.

Tools: PHP and android development (Android studio and Android SQLite Database).

Supervisor:
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Classified Sales Automation System

Classified Sales Automation System

A Desktop Application for inventory control and sales management automation process.
This software is developed to construct a public or semi-public friendly automation system. In this system we add the new user as admin or as a simple sale man. Sale men are just performing the sales in our outlet or the admin are control all the system. In this automation we can search the garments item by name and by first value. Check the sales and purchases in daily basis, monthly or yearly basis. The admin can add the new user in our system and check as well as the stock information. The admin can perform the different operation in different tables for example save the data or entries and delete the data from all the tables and update information in customer or dealer tables.

Abstract/Introduction
The "Classified Sales Automation System" is a type of discount store or a readymade garment shop for children, women, teenage girls, kids, gents and boys. The clothing line that is unique, special, comfortable, and fun. The application able to computerized the whole sale system and the inventory of the store.

This new system is imposing new features:
1. Complete inventory and sales management.
2. Access to database will be based on login-id and password.
3. Also the system is intended to take very few inputs from the user.
4. User friendly.
5. Easy to printing the customer invoice.
6. Flexible and error less application.

Functional Requirements:
1. Login User or admin:

   - System asks for User ID and password.
   - System should ask for user level.
   - System authenticate and response as per input.
2. Sales:
   - System registers the customer first.
   - System authenticates the customer information, to check validity.
   - System enables the selection of customer.
   - System shall set rate according to the purchase of customer.

3. Purchase from dealer:
   - System registers the dealer.
   - System authenticates the dealer information, to check validity.
   - System enables the selection of dealer.

1. View Purchases and Sales:
   - System show daily transitional detail.
   - System provide detail according to specify dates (From date to date).
   - System show summery detail at the end of report.

<u>Tools:</u> C#, SQL SERVER 2005 & VISUAL STUDIO 2010, UML, MS VISIO

<u>Supervisor:</u>
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Medical Care Center Management System

Project Domain / Category
Data base system

Abstract/Introduction
Medical Care Centers are an integral part of our society. The use of management systems with stations connected to each other over LAN has made it easier for doctor's to open patient record, check for updated reports and maintain record, management has been made easier as well; all records and billing system is a click away. On the other hand patients don't need to carry reports for record. An efficient and robust Medical Care Center management system plays vital role in day to day running of MCCs in todays fast pace world.

For the aforementioned reasons students are assigned to develop a Medical Care Center management system with functional requirements mentioned below.

Functional Requirements:
1. Registration
   In this module we manage activities related to patient admissions and assign ID to these patients.
   - Add patients
   - Assign ID
2. Checkout
   In this module we manage activities related to signing-out patient ID and update available beds list.
   - Sign out Patient ID
   - Add to beds-available list
3. Report generation
   Depending upon the organizational needs following reports can be generated

   - There can be daily reports
   - Weekly reports
   - Yearly reports
4. Database
   In this module we manage activities related to patient history and current checkup status
   - Patient Mandatory Information
   - Update Patient Information

Tools:
C#, SQL Server, (Any modern language tools)

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Automation of ANY Pharmaceuticals (Pvt.) Ltd

Project Domain / Category
Web based paper less environment application.

Abstract/Introduction
Automation of ANY Pharmaceuticals (Pvt.) Ltd. Lahore is a database solution to the problem faced by ANY Pharmaceuticals. Company is performing all its activities manually. Sales of medicines purchase of raw material and machinery and payroll of employees are all recorded on registers. So this course of action is very time taking. The users of this application will be the managers of company and registered distributors and doctors. All the users will have to go through the authentication process to get secure access. The infrastructure and technologies, which are going to be used for the development of the application, are easily available to the users of application. Implementation of the project will not face any hurdle in its course
The main objectives of the system are

- To reduce the extra paper work.
- To retrieve the desired information quickly.
- To reduce the number of documents and registers.
- To convert the manual processing into the computerized processing.

Functional Requirements:

1. The system shall be provided convenient interface for User Registration, medicine Search, and Payment.
2. The System will provide different user authentication like guest user, temporary user, regular user, administrator user etc.
3. The system will be provided paperless environment in the Sales, Raw Material Purchase and Customer Relations departments' activities by helping the employees to keep track of the various transactions used without going through large piles of files and registers, thus providing them handy information within no time.
4. The system will be able to generate all necessary reports about the products and functions and maintain their records for example their date of sale, their stock records etc.
5. The system will be maintaining the record of new visitors.

Tools: ASP.NET, HTML, CSS, JavaScript, Crystal report, SQL Server,

Supervisor:
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Password Manager

Project Domain / Category
Mobile Apps

Abstract/Introduction
A **password manager** is a software application that helps a user store and organizes passwords. Password managers usually store passwords in encrypted form. This application will require the user to create a **master password**. This is a single, ideally very strong password which grants the user access to their entire password database on the server. This application will also protect your private information from hacking and data theft.

Functional Requirements:

- User registration with Email
- Set\Update the Master password
- Add\Delete\update new record for web site password saving
- Open Web site (for which password is saved) from within application on browser
- The information should be saved/stored on server database.
- Photo gallery to selects pictures for encryption
- Encrypt\Decrypt pictures into safe vault (Encrypt pictures should only be visible the within application.
- Encrypted photos should be saved locally (in the device)
- Access your information anywhere, on any device with secure access login using Master Password.

Application Type	Tools & Technologies
It will be an android based application	Android Studio/Eclipse .

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Resource Monitoring system (RMS)

Project Domain / Category
Networking

Abstract/Introduction
Resource Monitoring System (RMS), The desire is to monitor and evaluate the utilization of the resources like CPU and RAM usage. a great deal of system administration revolves around resources and their efficient use. By balancing various resources against the people and programs that use those resources.

Functional Requirements:
- Resource Monitoring System (RMS)will be a desktop application providing following tasks:

Module:
User management
- The system will have two types of user
- Administrator that could monitor system
- Simple user

Communication Management
- Communication between clients and server of application

Resource Monitoring
- Monitoring resources.

Report Management
- Reports generated in the form of graphs

Tools:
- VB.net or JAVA, etc.

Supervisor:

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Flight Information Display and Ticket Reservation System

Project Domain / Category
Web Application

Introduction:
This system will provide flight information to small and medium sized airports via remote website. The concept is to provide complete web software solution with built in 24/7 system maintenance and customer support, without the complications and expense of having on-site servers and data interfaces. All that is required from the airport is a good solid internet connection, display monitor and a PC.

Functional Requirements:
This system will have the following features:

1. Public arrival and departures
2. Staff arrivals and departures
3. Ticket desk display
4. Ticket Reservation
5. Gate Display
6. Baggage claim display
7. Visual paging/Advertisements

Tools: PHP + My SQL
Application Type: Web Application.

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Embedded System

Project Domain / Category
Embedded System Programming

Abstract/Introduction
Tachometers are devices that are used to find out the speed and velocity of vehicles. Tachometers normally represents speed in revolution per minute i.e. RPM. There are two types of tachometers available in vehicles i.e. Analog and digital tachometers. The problem with Analog tachometer that is used in most vehicles is that it does not show exact speed at any movement and shows a rough reading. On the other hand digital tachometer uses LED which is a latest development in the field of computer science and electronics. Digital tachometers and interactive and shows exact speed and any moment in the form of digits. These types of digital tachometers can only be found in expensive and luxurious vehicles due to the high cost. In this project we are going to develop a low cost tachometer which can be used in cars which is hoped to be installed in low cost vehicles.

Functional Requirements:
1. Find speed by measuring the shaft rotation of vehicles
2. Show speed in three digits.
3. Display speed on LED/LCD

Tools:
- Microcontrollers (Intel 8051/8052 series).
- C/C++ Programming Language.
- Assembly Language.
- Circuit Designing Software (Orcad Pspice etc).
- Keil Embedded Development Kit.
- Microcontroller Burner Kit.
- Circuit Components (Resistors, Capacitors etc).
- LEC
- LCD

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Classified Website

Project Domain / Category
Classified Website

Abstract/Introduction
Classified websites are the types of websites which allow users to place their ads. Seller and buyer both can post their ads on it, but to post their ads they have to setup and free account. Seller can post ad on it for the particular which he/she wants to sell. Buyer can also post ads about the product which he/she wants to purchase. This kind of website is dynamic in nature where user interacts with this kind of website. Website also gives the facility of send SMS alerts or emails both the buyers and seller, for example a seller posts an ad for a mobile. Buyer like this ad and give is offer to seller then this offer is send to seller in the form of SMS alert or email alert. Similar in case of buyer if buyer wants to buy some product which ad is not yet available on site, he/she posts the ad on site and if a seller has that particular product then that seller can send him SMS alert or email through this Website.

Functional Requirements:
1. Admin shall be able to manage users
2. Visitor should be able to registered with website
3. Site should also give the facility of manage different product categories, so that buyer/seller can post ads or see ads under desire product category
4. Latest add should be show in right side of home page
5. All ads will be phone verified
6. User may inform admin that product advertised on website has been sold so admin can update status of this product as Sold or this facility can be provided to user.
7. User can view ads city wise, minimum and maximum range of price

Tools:

PHP
Adobe Photoshop

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Online Advertising Website

Project Domain / Category
Web Based Application

Abstract/Introduction
Online Advertising is a form of marketing, used for advertising the goods and services using Internet. Due to key benefits of Online Advertising such as low cost as compared to offline advertisement, global scope of advertisement and rapidity, this is becoming a key interest of the sellers / service providers and the buyers / clients. People now can sale anything from like mobiles, home appliances, clothing, furniture, computers / laptops, electronic accessories, cars and property etc. through online advertising websites. So, the purpose of this project is to develop effective Online Advertising Website providing advertising facilities and underlying benefits of online advertising.

Functional Requirements:
Following are the key functional requirements of proposed Project:

1. Sign In and User Registration

   There will be three types of users of the website:
   - Unregistered User
   - Registered User
   - Administrator

   Unregistered user can visit the web pages and can search for advertisements (Ads) through different filters.
   Registered user can post Ads on web page and can perform Ad management related tasks.
   Administrator will be the user of website having all the rights of Ad management as well as user management.
   There will be Sign In interface for registered users and Registration interface for unregistered users.

2. Email Notification: An unregistered user will register him/her. On filling the registration form an email notification will be sent to the user for confirmation.
3. Email verification / confirmation will be done by the user who applied for registration
4. There will be interactive forum / interface for ad posting
5. Ad posted by the user will be verified by the Administrator
6. The website will allow maximum four pictures against one Ad
7. There will be run time generation of Ad pictures
8. There will be an interactive user panel for Ad management

9. There will be a separate interactive Admin Panel for Ad verification, Ad management and user Account Management.
10. There will be rich search facility through different filters.

Tools:
Microsoft.Net, SQL Server
Java, HTML,
PHP, MySQL

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Online Virtual Laboratory for eLearning Practical Courses

Project Domain / Category
Web Programming, Automation

Abstract/Introduction
Online Virtual lab is a web based application which will provide a simulation to the e-learning students to enhance their degree of excellence in distance learning education and to improve their practical skills related to science and technology fields. This web application will give an online laboratory environment, where an e-Learner performs practical work.

This solution overcomes the problems faced in rural areas due to insufficient time and practical instruments/apparatus used in science laboratories. It is also beneficial for enhancing the students research oriented studies. By using this application lab experiments can be taught more efficiently and less expensively. The virtual labs can be made available to students with no access to physical labs or where equipment is not available. ELearning students can access these online experiments at home, anytime and anywhere.

Functional Requirements:
- The application should have graphical user interface which have apparatus and practical instrument objects
- The admin , Lab assistant and student should be login to enter the graphical interface of Lab
- The application should provide the list of practical courses from computer science domain (select any one course e.g. digital logic design , computer programming, networking courses etc
- The admin should manage lab assistant and Lab assistant should manage all practical lab material, procedure and topic contents
- The interface should provide selection of practical courses and under this select the introduction ,experiment lists of selected topics, procedure of performing experiments, tutorials, reference materials etc
- The interface should provide the simulator and animation interface for performing experiments
- The interface should provide the online quiz after attempted experiments and save the students records in each session
- The interface should automatically save the activity of student while performing practical task
- The interface should allow adding new student record, updating record, deleting and saving records.
- The admin should view the performance and print the report of the student
- The students will be able to view their position in the practical lab

Tools:
Microsoft .net Framework and Sql Server

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Online Job Portal-1

Project Domain / Category
Web based application

Abstract/Introduction
Online Job Portal is a Web based application. It is an application designed for job seekers and employers. This application provides the platform where an employer finds the right applicants according to the need of their company/organization. Employers contain a profile that includes the information about their company profile. The job seeker is able to create the resume by using automatic CV builder or upload his or her own Resume. The applicants can search the jobs by using job search filter and finds the jobs according to their interests. This application also contains a referral system where an applicant can refer to another applicant for Job.

Functional Requirements:

Employer Panel:

1. Create/View/Edit Profile
2. View Applicants
3. Active Jobs
4. Expired Jobs
5. Search Resumes
6. Quick Search
7. Advance Search
8. Educational Search

Job Seeker/Member's Panel:

1. Create/View/Edit resume: Free Resume Posting and Premium Resume Posting
2. Restrictions of few fields for "Premium Resume Posting"
3. Automatic CV builder
4. Manage Search Criteria
5. New Applications
6. View Applications Status
7. Search Jobs
8. View Message Boards
9. Candidate to Candidate referral system, where we can see, how many candidates have been referred by a candidate.

Language, Tools and Technology:

- PHP
- MySQL

- Dreamweaver
- Xamp/Wamp
- Microsoft Visio/Rational Rose

Supervisor:

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Blood Donation Services

Project Domain / Category
Web Based Development

Abstract/Introduction
This system will provide an online platform to provide information to the blood seekers and donors. By using this system donors can update their profile, blood donation history and medical report. Blood seekers can see the details of the available donors, find nearest blood banks, hospitals and other health care centers. Seekers could contact to the donors by searching the profile of appropriate/relevant donors. Admin will authenticate and approve the sign up requests from the Donors, seekers, hospital or health care centers.

The new online system will be easy to manipulate and will decrease the time to manage the blood seeker/ donor record. It will provide standard online system benefit like accuracy, efficient mechanism to manage existing records etc. It will help to reduce the record management effort.

Functional Requirements:
Here are three modules in Blood Services System:
- ➢ Administrator Module.
- ➢ Donor Module.
- ➢ Seeker Module

The Functionality of each module of Online Blood Services system is as follows:

1. Administrator Module:
The administrator has the full-fledged rights over this Online System.

Roles of the Administrator:
- ➢ Administrator can register new Users (Donor and Seeker).
- ➢ Administrator can update both Donor and Seeker's data.
- ➢ Administrator can delete both Donor and Seeker's data/profile.
- ➢ Administrator can search both the Donor and Seeker's records.

2. Donor Module:
The Donor can view his/her Profile data and further can update it into the online system.

Roles of the Donor:

- ➢ Donor can view his/her Profile and can update it.
- ➢ Donor can change their username and password.

3. Seeker Module:
The Seeker can view his/her Profile and further can update it into the online system.

Roles of the Seeker:

- ➤ Seeker can view the Profile and can update it.
- ➤ Seeker can change their username and password.

Tools

1. Html
2. PHP
3. CSS
4. JavaScript
5. Adobe Dreamweaver
6. My-SQL
7. Adobe Photoshop
8. MS Visio

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E-Medical Record

Project Domain / Category

Web Application

Abstract/Introduction

The purpose of this software is to keep medical records of the patients. Medical record may include personal information, medical history, medication, laboratory test result, allergies, radiology images and vital signs.

This software maintains data accuracy and captures the patient information time to time. Proper use of this software will eliminate the need of paper based medical record. Therefore, the risk of loss of paper record will be finished. Single centralized data storage facility will eliminate data redundancy. By using the search facility of the software, user would be able to extract medical data for the examination of possible trends and long term changes in a patient. Population-based studies of medical records may also be facilitated by the widespread adoption of this software.

Functional Requirements:

Some of these functions include, but are not limited to:

- Maintain patient record
- Manage patient demographics
- Manage patient-specific problem lists
- Manage medication lists
- Manage medical procedural/surgical, family history including the capture of pertinent positive and negative histories, patient-reported or externally available patient clinical history.
- Create, addend, correct, authenticate and close, as needed, transcribed or directly-entered clinical documentation and notes.
- Incorporate clinical documentation from external sources.
- Present organizational guidelines for patient care as appropriate to support order entry and clinical documentation.
- Provide administrative tools for organizations to build care plans, guidelines and protocols for use during patient care planning and care.
- Generate and record patient-specific instructions related to pre- and post-procedural and post-discharge requirements.

Tools/Language:

You can use any language which supports the development of web applications.

Supervisor:

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Route Navigation Application for Android

Project Domain / Category
Mobile Apps

Abstract / Introduction:

When cellular phones were first introduced, they were bulky devices that were designed to perform a single function. In the intervening decades, they have transformed into multipurpose handsets that provide access to the Internet, productivity software, and many other features. The rise of the smart phone also coincided with an increasing public interest in GPS navigation which most of the major service providers and hardware manufacturers were quick to take advantage of.

The Application is a Self-Accessed Route Navigation Application in android operating system using GPS. It provides the users a rich user experience by offering them an easy, smooth and time saving navigation. It uses both hardware, software, and many technologies to support the task at hand. This App will be able to help the users to travel from a specific location to their destination by recommending the shortest routes, alternative routes, and by avoiding the busy roads. Users can also communicate with the other users using this application. Tourists can also get help regarding their trips using this application.

Functional Requirements:

. This system will have the following features:
1. Provide the users a rich user experience and ease in navigation i.e
     - Geo tagging
     - Alerts generation
     - Shortest path to destination
     - Multiple paths if available
     - Traffic status and the platform for the users to interact with other users.

2. The usability of our application is specially taking care of users to give them high precision and accuracy, easy to use and rugged enough to meet the demands.

Tools: Android Studio + Java + PHP + My SQL

Supervisor:

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Online Mobile Shop

Project Domain / Category
Web based Application

Introduction
In this era of technology, Mobile Phones are becoming almost a necessity for every person. Due to advancements in technology, people always remain in the search for new mobiles and accessories. Many people often pass through the process of buying and selling the mobiles. For this purpose, majority of people search for online shops that may fulfill their requirements in efficient way.

The project entitled "Online Mobile Phone Shop" enables customer to buy mobiles and accessories from anywhere through web. This application allows the user to access all the products available. To buy products, customer has to create an account. Those who does not have an account, they can only view the available product. They can't buy it. This application helps customer to find different mobiles and their features easily. The admin has the authority to Add, Delete, and Update etc. The application will help in easy maintaining and updating products in the website for the administrator.

Functional Requirements:
Following are the key functional requirements of proposed Project:
There will be three types of users of the website:
- o Unregistered User
- o Registered User
- o Administrator

Admin:
The admin has the authority to Add, Delete, and Update etc. Admin will enter the Login Id and password then application will verify login Id and password is valid or not. If both things (ID and Password) verified then admin will be directed to next page where he can add, delete or update the products.

Unregistered User:
Unregistered users means those who does not have an account, they can only view the available product. They cannot buy it.

Registered User:
Users have to register on the website in order to make a transaction. Registered users not only can view the products, they can also add the product to the cart and also can place an order to buy those products. The account creation will be done by filling the registration form with user details such as name, phone, email etc.

Following are the features which must be present in this application:

1. There will be a drop down list box for login from where a user has to select ADMIN or USER option.
2. Products must have information regarding the mobiles such as its name, model, color, price information, and its features etc.
3. Accessories of the Mobile phone will be available with its name, pictures and price information etc.
4. There will be a search option that will help the user to search based on budget or interest. The search can be done on different categories like mobile company name, model number, color, price etc.
5. There will be option of magnifying the pictures of mobile phones and accessory items.
6. There will be the option of comparison between two mobile phones.
7. There will be option for users that they can select any number of available Mobiles and accessory items and add to the cart. They can also remove an item from the cart if they dislike it later.
8. There will be Payment information that will include information like the model purchased, quantity, mode of payment etc.
9. There will be Stock Option that will give the details regarding the products available for sale. In case if item is not available in stock then it will show "out of stock message".
10. There will be a feedback option for users where they will be able to submit their feedbacks regarding website.

Tools:
Microsoft.Net, Java, HTML, PHP, SQL Server, MySQL

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Virtual Student Assistant (Mobile App)

Project Domain / Category
Android Mobile app

Abstract/Introduction
Virtual student assistant is personal aide for students, keeping the routine organized with this app. Students can easily remember their next assignment/test/quiz etc and which lectures/topics to study for their upcoming exams. Student can keep track of their assignments, classes, notes etc.

Virtual student assistant will remind students about the upcoming test/quiz etc, calculate GPA accordingly, chart the progress throughout. The calendar view permits the students to see a monthly calendar with all the assignments/tests/quizzes etc in every course.

The menus include; agenda, calendar, notes, progress, upcoming assignments/test etc.

There are evaluation types i.e. assignments or homework, quiz, GDB or any discussion marks, presentation (if any) etc. students can rename the evaluation accordingly.

Functional Requirements:
1. Customized menus
2. Weighted grades and evaluation types
3. Predict grades
4. Google calendar sync
5. Google Drive sync
6. Password protection

Tools:
Android development IDE
Example: Eclipse ,Xml

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Online Boutique

Project Domain / Category
Web-based application

Abstract/Introduction

Online boutique is a great place for stylish people to shop for interesting items which are not available in big department stores. Online boutique is designed to manage your boutique online through the computerization of the clothes inventory and sales, etc. Online Boutique will be a very user friendly. You can directly buy your clothes at home via online boutique. Through Online Boutique your time will be saved as there is no need to go to market for buying clothes. In a click, your clothes will be delivered at your door step.

Functional Requirements:

1. A client must make his online account first before buying clothes so they can purchase, edit, delete or refund the clothes.
2. Through online account client can make his profile and can see the status of his order id and his purchase history.
3. Online Boutique account for clients must be secured and password authenticated.
4. Checkout system of the online boutique needs to be much easier for clients.
5. Clients must see the selection of the clothes very well before purchasing the clothes.
6. To attain the client attention it must contain multiple view photographs and customer ratings.
7. To satisfy the client you have to provide multiple images of the clothes from different angles.

Tools:
Any modern tool and technology set used for developing the Online Boutique using any Database

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Virtual Doctor

Project Domain / Category
Web Based Application

Abstract/Introduction
Virtual Doctor or Telemedicine is defined as, the delivery of e-health services, where distance is a critical factor, by all e-health professionals using telecommunication technologies for the exchange of medical information for diagnosis, treatment, prevention of diseases and injuries all in the interests of advancing the health of individuals and their communities. In simple words, telemedicine is the use of medical information exchanged from one site to another via electronic communications to improve a patient's clinical health status. Telemedicine includes a growing variety of applications and services using two-way video, email, smart phones, wireless tools and other forms of telecommunications technology.

Many developing countries have inadequate health care and medical services and suffer from a shortage of doctors and other health care professionals. Unfortunately Pakistan is one of them. The unsatisfactory patient to doctor ratio and inadequate distribution of doctors/specialists makes it more difficult to provide health care in remote and rural areas.

The proposed project will help solve the problem by virtually connecting patients to doctors, providing clinical support to clinical-staff by experts/specialists, overcoming geographical barriers and thus improving the health service standards in remote areas. The one of the major strengths of virtual doctor is improved assess i.e. a doctor can connect to more number of patients and a patient can connect to specialists which in most rural areas of Pakistan is not possible otherwise and all that within limited cost.

Functional Requirements:
Virtual Doctor will be a web based application providing following tasks:

1) Appointment Request:
A patient will have to register an appointment request. A local staff member will help patient in requesting such appointment which based on the patient will enter patient's personal information and will assign him to a virtual doctor at central location.

2) Virtual Waiting Room:
Virtual Waiting Room will simulate the real world hospital waiting room where patients wait for their turn to meet the doctor. Virtual waiting room will help doctors to find all of the patients waiting for them and call their next patient.

3) Virtual Diagnosis:
Once the patient is called by the doctor (through proper messaging system on the remote computer), patient will go live with the doctor who based on patient history may suggest certain

tests or prescribe a treatment plan. In case of any test suggested by doctor, once the test is conducted, patient data will be entered and doctor will suggest treatment plan.
Note: later version of application will also include video conferencing of patient with doctor.

4) Patient Data Entry:
Proper interface will be provided to enter patient data and medical history .e.g blood pressure, sugar level, temperature etc. each patient will be given a unique registration key which will remain same and will help track patient history. Similarly Interface will be provided for all suggested tests.

5) Emergency:
In case of emergency treatment required, the doctor can skip any number of patients and immediately treat the patient who needs urgent treatment.

6) Home care:
Later versions will also provide interface to connect a patient from home. Such patients will be billed for any type of treatment they get.

Tools:
Microsoft.Net, SQL Server

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Old Exam Repository and Quiz (Mobile APP)

Project Domain / Category
Academic Mobile Application

Abstract/Introduction

Old Exam Repository is the unique mobile app that offers services through which students can get old annual exam papers of all Education Boards of Punjab and Quizzes.

Functional Requirements:
Through **Old Exam Repository and Quiz**, Students of any level can get Preparation Level for any test or exam like old exams of last five years and quiz. After clearing all of quizzes, Student will be able to pass exam with extremely good grades.

In this mobile application, Students will choose only one class/grade from 5th, 8th, 9th, 10th and intermediate subjects or Entry Tests like Engineering, Medical and NTS for mobile app development.

The candidates who are going to attempt a competitive exam can also prepare for their compulsory subjects through this Mobile app.
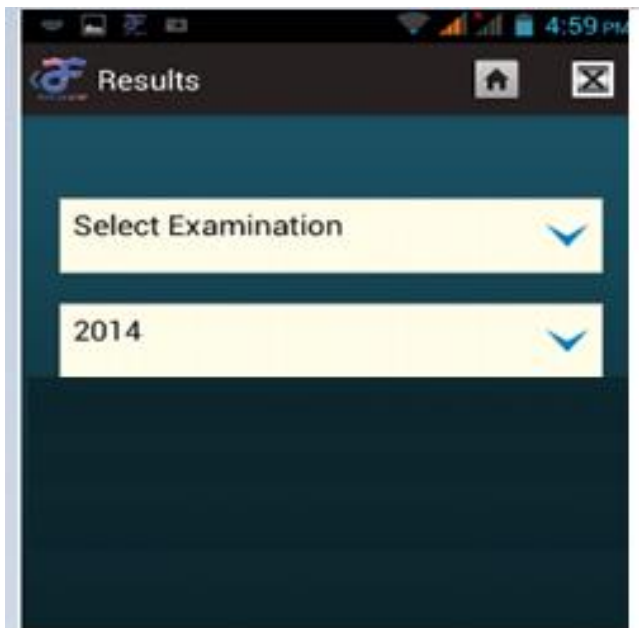
9th Class (Ninth)

Math	English	Physics	Chemistry	Biology
Computer Science	Urdu	Islamiat		

Geometry

Time left: 28 minutes and 29 seconds

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

Math

1. Triangle in which one of the internal angle is of 90° is called:

○ Equilateral triangle

◉ right angle triangle

○ isosceles triangle

○ scalen triangle

Question 1 of 15

Next >   See Answer

Apart from this, complete guidance and online preparation tests for Professional Fields or Entry Tests like Engineering, Medical and NTS are also available in this application.

Note;

The scope of this application is very large. Each group will develop single module as mentioned earlier.

Tools:
Android Studio

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Student attendance in class using Face recognition system

Project Domain / Category
Computer graphics application/Image Processing

Abstract/Introduction

In this project we want to implement the idea of image manipulation, image recognition, analysis and visualization for Face Attendance system in School / College.

It will be a face recognition technology to instantly identify students in a class. It will provide a touch-free hygienic alternative to fingerprint and hand readers. It wil eliminate finger punching, need for cards and badges. It will use a standard ethernet connection to our existing computer network and High Definition Web Cam or Security Cam. This system will be integrated with desktop / online software for editing / runnig reports and payroll software.

The system will not only provide the fastest and most reliable verification, but it will also ensure that it can not be fooled by 2D images or photographs, this precision verification system will be even accurate enough to differentiate between identicals.

Functional requirements:

This system must have following functionalites:

- This system should monitor and control the entrance of students and teachers when class time start
- The system should keep the visit record of students.
- Mark Attedance of authorized users(Students/ Faculty).
- Register the use of special privileges of the system.
- Emit alarm signs when a not authorized person wants to accede.
- Manage students and teachers entrance/exit schedules
- Have information about time, hour, person who has entered/exit class
- To locate teacher and students which has not been identified (they do not have arrived to the class) by the use of a visualization screen of the persons that are late.
- Week summary, e-mailed to each teacher course or headship, with a list of persons who have been missing of class or have been late.

Tools and Technology:
Visual Studio, C#, .Net Framework, MySQL or MSSQL Server,HD Cam

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Note:hardware requirements are arranged by student,itself not provided By VU

Context aware mobile application

Project Domain / Category
Android App

Abstract/Introduction
There is a context aware mobile application which provides services to users about nearby restaurant for lunch/dinner using sensor/s. Let's consider a scenario in which the application list the number of nearby restaurants at lunch time, but, if someday the person is busy in a meeting or have no hunger or he/she is driving. Then, by taking advantage of context awareness that application should provide a usable interface to user. It is usually seen in many similar applications that "application doesn't provide a usable reply to user".

Actually application provides a list of nearby restaurants list to user which is a usability problem and so not required in said context. Thus, we can say, that application didn't provide a usable reply to user.

Now, let's try to find out way. First we need to know why application didn't provide intelligent reply to user. What are the root causes? Whether application didn't discover and take advantage of contextual information? Whether sensors are working properly? Or these aren't linked with application? Or linked with application but not designing an intelligent decision mechanism.

Intelligent reply might be "application don't provide list of restaurant to user" or application provide an interface to user by saying" although you are in a meeting noe, if you get free soon, do you like to see list?

Functional Requirements:

1. Application can find nearby restaurants by taking advantage of sensors like GPS, accelerometer, time, etc.
2. Application will take context aware decision based upon user's location, activities, etc.

Tools:
Android Studio

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Workflow

Project Domain / Category
Business process automation

Abstract/Introduction
Workflow is a view or representation of real work. It is the definition, execution and automation of business processes where tasks, information or documents are passed from one participant to another for action, according to a set of procedural rules.

An online retailer ABC need work flow application to serve their customer and process their daily orders. The customer submit order(s) for products online, then the company verifies the address and billing information at their end, upon success, they initiate the transfer of product request to sales section, the sale section finally deliver the product(s), however if there is/are problem(s) in the process, then the appropriate customer and concern support officer is informed about the activity.

Workflow components:
A workflow can usually be described using formal or informal flow diagramming techniques, showing directed flows between processing steps. Single processing steps or components of a workflow can basically be defined by three parameters:
1. Inputs (the information, material and energy required to complete the step)
2. Rules (rules which may be carried out by people or machines, or both)
3. Output (the information, material and energy produced by the step)

Functional Requirements:
1. Only authorized users can use/access the process.
2. The process should display list of company products.
3. Ability to gather order information from customer.
4. Have document attachment feature.
5. Notification emails.
6. Process orders at company end.

Tools:
You can use share point or K2 for the workflow application. Following are the necessary tools:-
- Share Point 2010/2013 OR SharePoint Online/Office 365.
- SharePoint Designer 2010/2013.
- Visual Studio 2010/2012 with SharePoint extension.
- SharePoint management shell.
- K2 Black Pearl.
- K2 designer.
- K2 Studio.
- Microsoft outlook.

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Traffic Signal Control System using Microcontrollers

Project Domain / Category
Automation / Embedded System Programming

Abstract / Introduction
In the present days automated systems or embedded systems have fewer manual actions. They are much more flexible, reliable and much accurate as compared to our manual systems. Due to increase in demand of such reliable and flexible systems, we prefer an automated control system.

In Pakistan, controlling traffic system is one the basic challenge. The monitoring and control of city traffic signals are becoming a major problem in many cities and with the increase in the number of vehicles on the road, the Traffic Control and Monitoring Authority has to find new automated methods of overcoming traffic related problems.

The main aim of this project is to design an intelligent traffic light controller using embedded system. Which will also aim to design a safe and efficient traffic flow and to assign the right way and minimizes the delay or waiting time at the road.

Functional Requirements

- Control signal light delays
- Control signal pass through mechanism
- Remotely camera observation mechanism
- Emergency Diversion
- Remotely linked with other signals using wireless interface.

Tools

- Microcontrollers (Intel 8051/8052 series)
- C/C++ Programming Language
- Assembly Language
- Circuit Designing Softwares (Orcad Pspice, WorkBench)
- Keil Embedded Development Kit
- Microcontroller Burner Kit
- Circuit Components (Resistors, Capacitors, oscillators etc.)
- Wireless interface devices (ZigBee etc.)

Note: Virtual University of Pakistan will not provide any kind of hardware for this project, student has to arrange required hardware by himself/herself.

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Down the Memory Lane

Project Domain / Category
Android Mobile App

Abstract/Introduction
The aim of the project is to connect elderly people with their adult children who are not living with them. The parents (or even children) may tag a location on map and record a video about that location. This video will be associated with that location. Whenever a family member comes to that location, he/she will receive a pop up message (from the application) that there is a video associated with the location where he/she is present at the moment. Now the family member will be able to see the video if he agrees to. For example, you live in Islamabad for your job. Your father lives in Lahore. Your father once had spent some time at a place in Islamabad for some training during his job. He decides to record a video about his past (training at that location) and associates this video with that location. Now one day you happen to go to that place by chance, suddenly a pop up will appear on your smart phone indicating that your father has recorded a video about that place. You can see this video. This is a very novel way of sharing your memories with your loved ones.

Functional Requirements:
1. A user must be able to get registered in the application.
2. The application must allow searching for friends and family from the list of registered users. Users must be able to search their friends and family (who are also registered users) through names, location, age etc.
3. A registered user must be able to send friend request to some other registered user.
4. Upon receiving a friend request (from some other registered user), a user must be able to accept/reject the request. If a user accepts the friend request of another user, he/she will receive prompts regarding the recorded videos of his/her friend(whenever he/she come to a location to which his/her friend has associated a video with).
5. A registered user must be able to associate a pre-recorded video with any location on the map (which can be viewed by his/her friends whenever they will come to that location).

Tools: Android IDE, Java, SQL Lite

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LifeSaver Blood Bank (Android Application)

Project Domain / Category
- Mobile App

Abstract/Introduction
This is an android based project which will play an important role in saving life of human beings and which is also its main aim. We want to develop an android application which will help the users to locate different blood banks in their locality and then request for the blood in case of emergency. The users will be able to view information about different blood banks along with the blood available in their repository, the information of the registers users who need blood in case of emergency and the blood donors who wish to donate blood when required.

Main Users: Administrator, Registered User, Blood Bank, Blood Donors

Functional Requirements:
1. The system will be under direct control of administrators and can add/remove information about any patient, donor or blood bank.
2. A guest is only allowed to search the information about different blood banks in his/her nearby locality.
3. The application will allow the users to register itself in the application to initiate the request for blood.
4. The system will allow all the registered users to login to the system.
5. The registered user (patient) can search for the blood required and then send the request to the blood bank for the required blood.
6. The registered user (patient) can view/search the information about registered blood banks such as name, address and information about available blood.
7. The blood bank can register itself in the application and store information about available blood in their repository.
8. The blood donors can also register in the application using their personal information along with their details of blood group and other medical information of donor.
9. If any user fails to find the blood in any blood bank, he can initiate a request to all the registered blood donors. The blood donors will receive a SMS alert on their mobile phones and can then contact with the person who requested for blood.
10. The application will be connected to a database at backend which will store all the information about registered users, registered blood banks along with their blood repositories and registers donors.
11. This project requires internet access and thus there is a disadvantage of internet failure.

12. The main aim of developing this application is to reduce the time to a great extent that is spent in searching for the right donor and the availability of blood required. Thus this application provides the required information in no time and also helps in quicker decision making.

Tools:
Android SDK, SQL Lite

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University Network Management System

Project Domain / Category
Networks

Abstract/Introduction
To design and configure a network for University having different where all members and students in the department receive appropriate dynamic IP address from DHCP Server (Windows 2008) or Router. Each department uses **different** IP network address.

There are two servers on the network for a social network application and file sharing. The social network application is accessible by web browsers with appropriate username and password. The file server is accessible using FTP client.

The organization uses Cisco switches and routers.

Functional Requirements:
1. Create VLANs and InterVLAN routing using Cisco routers and switches.
2. Classify IP addresses for each department.
3. Map the network address with respective VLANs.
4. Configure DHCP server on Windows 2008 or Cisco Router for dynamic IP address allocation to users belonging to respective VLAN.
5. **All departments are connected and interactive sessions like video and voice calls are being made**.
6. **Evaluation of the performance of the network with defined parameters like bandwidth, server capacity, traffic intensity.**
7. **Calculation of through put, delay and jitter.**
8. **Recommendations to improve QoS and Resource utilization on the basis of results**

 Tools: Packet Tracer or GNS3.

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Online Quiz application

Project Domain / Category
Web-based Application

Abstract/Introduction
The application will generate a quiz by randomly picking Multiple Choice Questions (MCQs) from database. User will attempt the quiz and result will be displayed. User can also view results of previously submitted quizzes.

Functional Requirements:
- The application will provide Signup and Login features. There will be two types of users; Admin and user.
- Admin should be able to manage users' accounts and add/update/delete MCQs. While saving an MCQ, its correct answer should also be saved.
- New user should register through Signup option.
- Already registered users will login through Login option. After the user is logged in, s/he can either start a new quiz or view results of already submitted quizzes.
- By clicking on start a new quiz, a quiz will be generated by randomly picking MCQs from database.
- Once the user submits quiz, user-answers will be compared with already stored correct-answers and final result will be displayed.

Tools: PHP, HTML, JavaScript, CSS, MySQL

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Online Vehicle Sales Management System

Project Domain / Category

Web Application

Abstract/Introduction

This system is responsible for managing the sales of vehicles. Registration process that includes information on vehicle registration number, the type of that vehicle, and other related information. Besides, the system is responsible for managing the login and logout function for the user who uses this system. The staffs that use this system will have access to key in the information of new vehicles, and keep track the record of the vehicles problem. Besides that, the proposed system also provides data analysis during a certain period of time. For example, the system might be able to help the staffs at the department to analyze and mark out the data in the database maybe when a vehicle is sold.

Functional Requirements:

1. Your system will allowed different users to use the web application having different roles and rights. Like Supervisor will keep track of all the rented vehicles. Users that are allowed to see the list of available vehicles. Account manager will keep track of all the financial transactions.

2. System will keep record of all the vehicles that are rented out. Supervisor can see the status of all the vehicles that are rented out and also show the available vehicles.

3. Web application also manage different vehicles having some problems. Supervisor can see the list of vehicles having problems. System is also able to see the sorted list of vihicles having problems. Like engine, tyres and battery related problems.

4. Web application is also able to display and analyze the sold out vehicles. In case of new purchasing system is able to display newly purchased cars in the fleet.

5. System is also able to handle the special discount in case of Army, doctors or Teachers. These persons are offered with special discounts.

6. User can see the price list of all the vehicles to be rented out. Price list include the hour based and date wise details of different vehicles.

7. System keeps record of historical data of users. Supervisor be able to search the previous users on the basis of CNIC number. In case of any damage to the vehicles these users are to be blocked in future.

8. In case of repairing of damage vehicles supervisor is able to search out the nearly located workshops.

Tools: JSP, Tomcat Webserver, SQL Server.

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