FINAL YEAR PROJECTS 2020

Department of Software Engineering Mehran University of Engineering and Technology

Editor
Chairman Software

Compiled By
Abdul Samad

Designed By
Fiza Azam
Asad Rajput
Asad Ali Jatoi

MESSAGE FROM THE DEAN

It is a matter of great pleasure to address on the occasion of publication of Final Year Project (FYP) Catalogue by Software Engineering Department. This catalogue showcases the state of the art projects in the field of Software Engineering addressing the problems currently faced by our society.

Software Engineering field is growing at an exponential rate and has touched the lives of millions of people around the globe. It is to be proudly mentioned that the department of Software Engineering is contributing significantly towards the growth and development of software at the graduate level, with focus on research, and innovation. The success of the department lies in the aspirations of students, the hard work of outstanding faculty members and the unwavering support of the leadership.

sIt gives me immense pleasure and satisfaction to see that the students of F16 SW Batch have made such wonderful and innovative projects which can greatly contribute towards the betterment of the society.

MESSAGE FROM THE CHAIRMAN

In the current era, there is a growing need for talented software engineers across the globe. Software engineering has deeply penetrated in almost every application domain ranging from finance and banking to healthcare and national security.

Our department's vision is to produce professionals who have a mastery of principles, theory, practices and processes necessary to produce quality Software systems.

Department of Software Engineering prepares its students to proficiently apply their engineering and interpersonal skills to design, develop, deploy and maintain software applications. The department also aspires to develop a capacity for innovation, research and a passion for lifelong learning in its graduates.

The final year students (F16SW) of Software Engineering Department have applied tremendous efforts to build valuable final year projects catering solutions to diverse problem areas ranging from healthcare to business and commerce.

I would like to express my gratitude to all faculty members for their valuable suggestions and supervision to the final year students.

Diabetes Early Prediction using Optimal Features Selection

Abstract:

Diabetes mellitus is a condition in which the person undergoes from hyperglycemia (high blood glucose level), this is mainly due to either the body has insufficient production of insulin (a hormone which regulates blood glucose level) or has become immune to insulin. There is no quick way to tell with precision if a person can be diabetic or not in Pakistan, which leads to unawareness of their sugar levels and the guilty pleasure of consuming more of it. To solve this problem, this research project analyses data collected from LUMHS Jamshoro and through various surveys dedicated towards people of Sindh, make use of feature selection and, creates a prediction system through machine learning algorithms to output the possibility of a person being positive or negative for diabetes. Algorithms used are Naïve Bayes, Random Forest, and Support Vector Machines. Moreover, the accuracy of algorithms is calculated.

Technologies: Python, Machine Learning

Group Members:

- Haris Ahmed Qureshi (GL) F16SW200 haris.qureshi96@gmail.com
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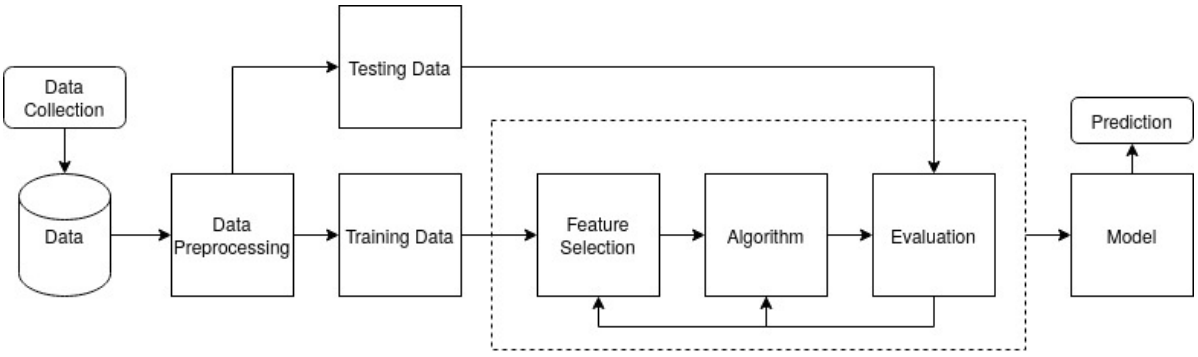
- Usama Arain F16SW38 usamaarain056@gmail.com

System Workflow Diagram:



Supervised By:

- Engr. Amirita Dewani

Teaching Cars to See; A future of self-driving cars – Lane Detection system using Road lane edges

Abstract:

A self-driving car is a vehicle that is able to operate without any human intervention. It is able to perceive its environment with the use of different sensors and then act according to that perceived environment. This project presents a simulated approach to self-driving cars where a system is designed for a vehicle to perceive and map its environment, plan its motion towards the destination, control its actions throughout the journey and reach to the destination by avoiding any casualties safely. This project specifically focuses on the lane detection for the vehicles. The proposed system is able to detect the road lanes and objects using artificial intelligence techniques such as neural networks. The simulated vehicle is able to calculate the desired steering angle, throttles and breaks according to its surroundings.

Technologies: Python, Carla Simulator, Neural Networks, Pillow, Numpy, Protobuf, Pygame, Matplotlib. Future, Scipy.

Group Members:

- Mashal Zainab Bhatti F16SW37 mashalbhatti@gmail.com
- Yar Muhammad Memon F16SW95 yarmohd888@gmail.com
- Wahaj Ahmed Shaikh F16SW193 awahaj039@gmail.com

System Workflow Diagram:

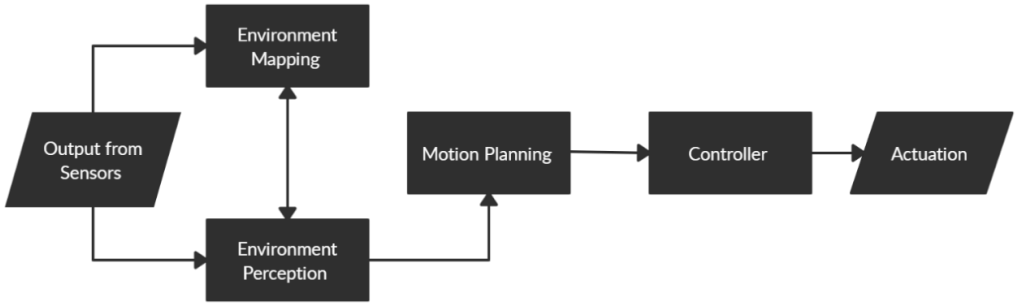


Figure 1. Architecture of a self-driving vehicle.

Supervised by:

- Engr. Samita Bai

This Project is funded by _____National Grassroots ICT Research Initiative (NGIRI) 2019_____

Sports Event Management System

Abstract:

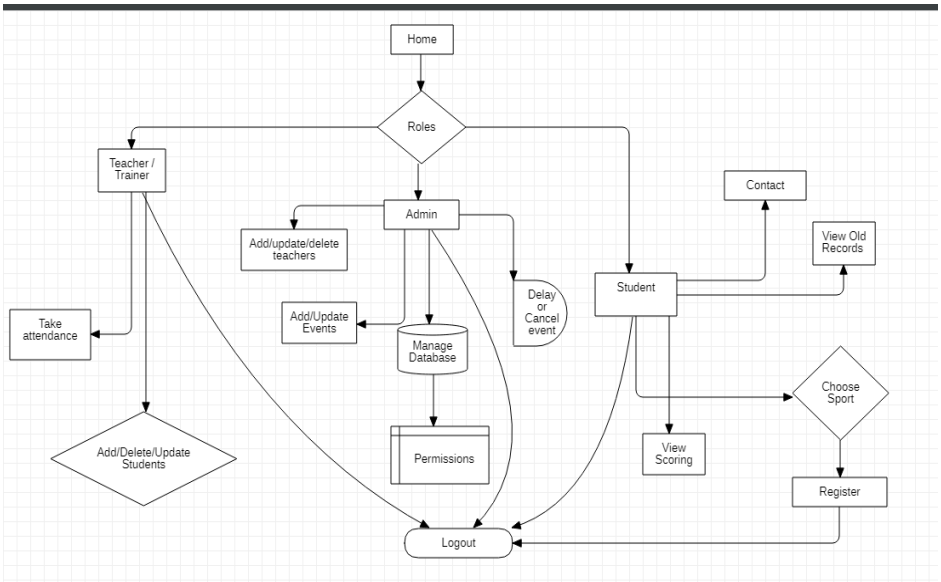
As we are progressing into the era of technical advancement, we have made almost everything digitized. From simple file record system back in 1960s to current data warehouses, we have been bringing every day's work "online". Sports event management in Mehran University is one of if not the heftiest and time-consuming tasks that gets carried out by the management. Our final year project takes the traditional method of sports event management and shifts it into a web portal that basically mimics every task that gets carried out manually and makes them easier to execute. The web portal will consist of information regarding current, upcoming and past events in multiple categories, 3 level hierarchical management involving site manager to teacher to the student itself, functionality for the students to register for events themselves, live standings and fixtures, well-structured attendance system and a notification system. The web portal will be supported by multiple relational databases. It is not like other websites are not necessarily capable of executing sports event management, but it becomes generic and our web portal basically eliminates the generalization. Our web portal focuses Mehran University only, maximizing the precision and accuracy of event management and serving its purpose.

Technologies: HTML, CSS, JavaScript, PHP, Bootstrap

Group Members:

- Bilal Kashani F16sw159 bilal456shaikh@gmail.com
- Ali Siyal F16SW163 alisiyal1998@gmail.com
- Sahil Dodai F16SW179 dodaisahil0@gmail.com

System Workflow Diagram:



Supervised By:

- Engr. Shafiya Qadeer

This Project is funded by _____Mehran University of Engineering and Technology_____

An AI Based Mobile App for Alzheimer's Disease Patients to Assist in Reminiscence

Abstract:

The most common type of Dementia is Alzheimer's Disease (AD) and about 50 million people throughout the world are suffering from it. It is researched that every 1 of the 3 persons is expected to have this disease and it is now the 5th leading disease that cause death for people with the age of 65 or older. AD progresses in seven different stages and with every successive stage the patient tends to rely more and more on the caregiver, which makes it very difficult for the caregivers to manage the patient alongside their own lives. To cater this problem, we propose our idea of developing an Artificial Intelligent (AI) based Android application, both for assisting AD patients as well as for lowering down the burden of their caregivers. The application includes various features such as Pill Reminder, Location Tracking, Customized Image Gallery, AD Related Knowledge, Face Detection, Voice Navigation through application, and Therapist Chatbot. The aim behind this application is to not only benefit the AD patient but, also to provide comfort for the caregivers in assisting and managing their loved ones with the use of a handy gadget like mobile phone accompanied with the benefits provided by modern Artificial Intelligence.

Technologies: Android Studio, Java, SQLite Database, Firebase Database, DialogFlow, MS Azure, GPS, etc.

Group Members:

- Zainab Khan F16SW06 zainabyounus63@gmail.com
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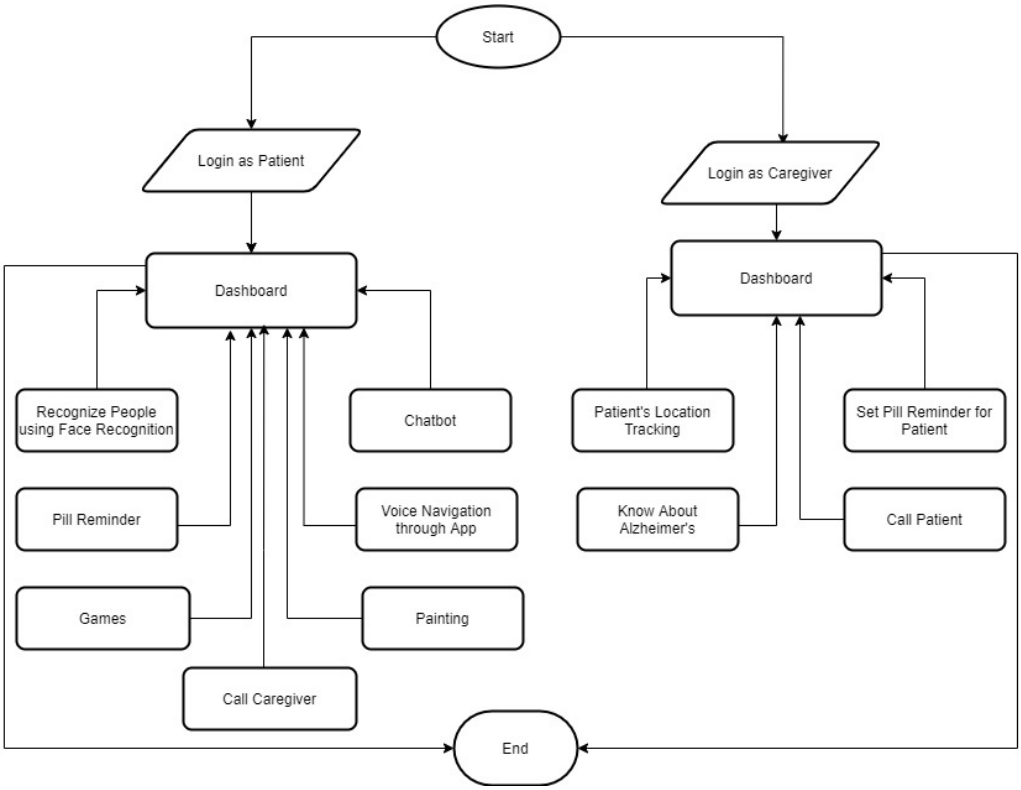
System Workflow Diagram:



Supervised By:

- Engr. Amirita Dewani

WEB based Classroom Management System

Abstract:

The point of this project is to build up an online app that gives instructors and mentors the capacity to communicate easily with their Students. The project will bring about a framework with plans, dashboards, grades allotment, specialized devices, gathering recruits, report cards, discussions, participation and electronic tasks. It will give the best approach to make schedules by educators and consequently send hardly any suggestions to the enlisted understudies for test, venture entries and so on. The application will likewise permit guardians to remain associated with what their youngsters are doing in the university, to see their advancement, on schedule/late entries and so forth.

Technologies:

- HTML
- CSS
- JavaScript
- jQuery
- Ajax
- Php

Group members:

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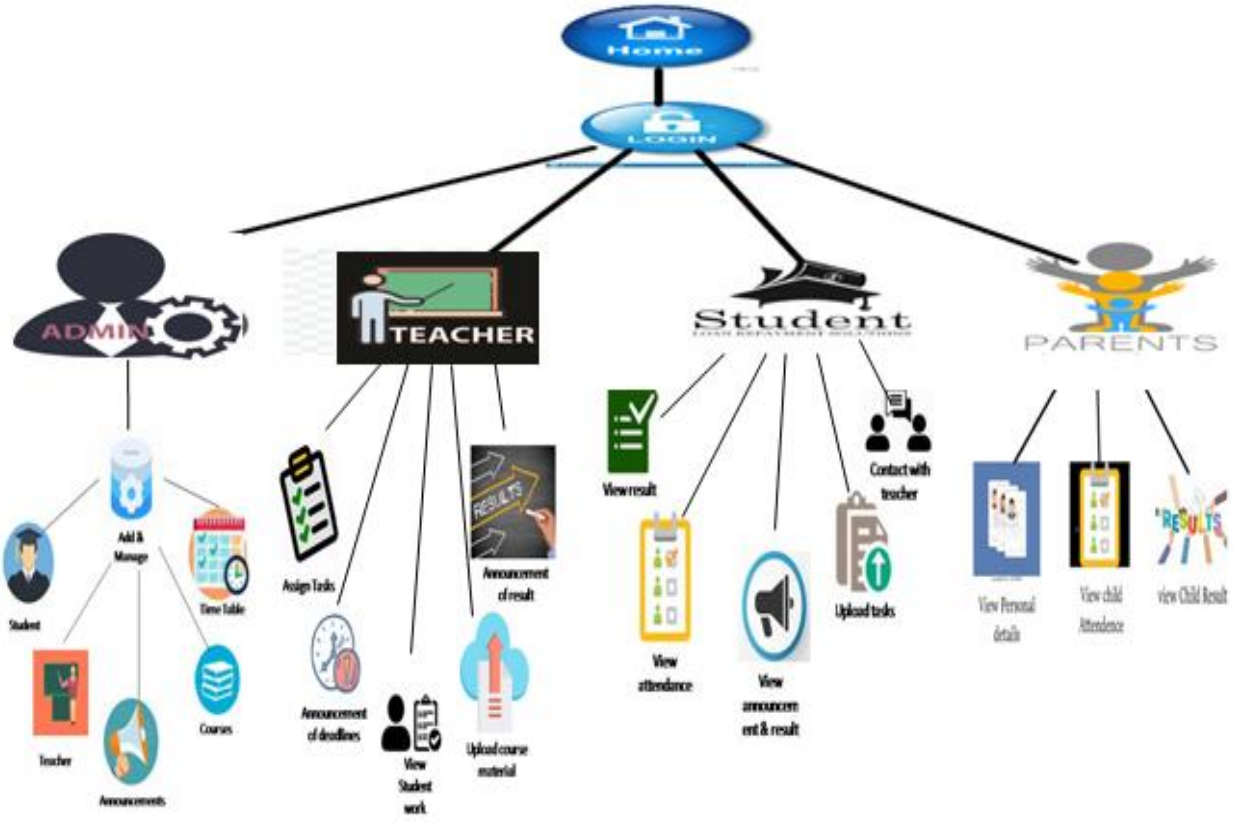
System Workflow Diagram:



Supervisor:

- Engr. Mariam Memon

E-Learning Chat Bot (Teaching Assistant) for the Department of Software Engineering Website

Abstract:

The main objective of this project is to provide the virtual teaching assistant chatbot to students of Department of Software Engineering, MUET. This chatbot will be able to give basic course functionality: guiding, demonstrating and explaining. Furthermore, Adaptive learning has been used on the notes, presentation and other material uploaded on the websites by the teachers to provide dynamic knowledge to the chatbot. Specific parameters are used in the algorithm of adaptive learning, based on these parameters information will be extracted from the material uploaded by the teachers. Knowledge extracted from uploaded files will be stored in knowledge based, through which chatbot can access it.

Technologies: Artificial intelligence, Adaptive Learning, Natural Language Processing, Python, Microsoft Bot Framework.

Group Members:

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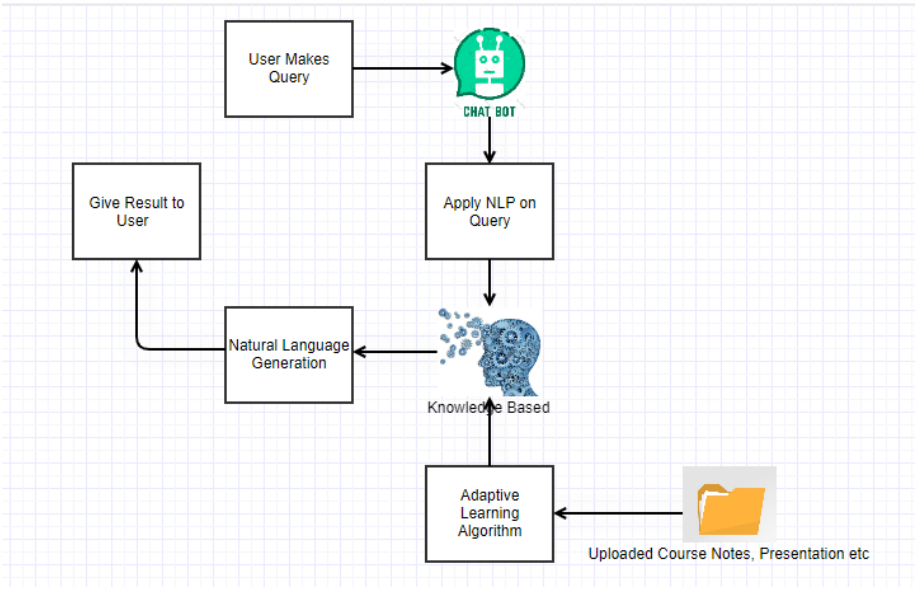
- Faiz Muhammad F16SW43 faizkorai424@gmail.com
- Abdul Sami F16SW151 a.sami.umrani@gmail.com

Architecture:



Supervised by:

- Engr. Zubair Sangi

INTELLIGENT PRODUCT MANAGEMENT SYSTEM FOR WASTE REDUCTION

Abstract:

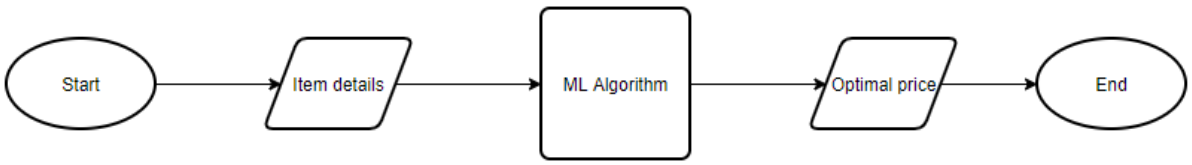
Supermarkets throw away expired goods which causes a lot of waste and loss to the store. To solve that problem, we thought of developing an Intelligent System that dynamically adjusts the price of the products that are close to getting expired using Machine Learning. Prices will get adjusted based on supply/demand and how much time is left for the product to get expired. This will not only improve profit margins for the stores will also reduce waste and will keep things fresh as the older ones will get sold out at lower prices before getting expired.

Technologies: Python, Machine Learning, MySQL.

Group Members:

- Ghulam Mustafa Memon F16SW03 memonmustafa679@gmail.com
- Sanaullah Memon F16SW01 sanumemon968@gmail.com
- Aadil Hussain Narejo F16SW169 narejoadil@gmail.com

System Workflow Diagram:



Supervised By:

- Engr. Zubair Sangi

EaseXpress, A Web crawler for B2C Market place

Abstract:

Nowadays online shopping has become very common. Being able to buy things online and get them sent to the door is something many people find convenient and appealing.

AliExpress hosts products from various sellers. As a product can be sold at different prices by different sellers. For customer price comparison is very time consuming due to numerous amounts of sellers, selling the same product. And it is not necessary that a seller selling the product at low price has good reputation too. So, this crawler will find the optimal seller for the customer based on the product price and seller's review/reputation.

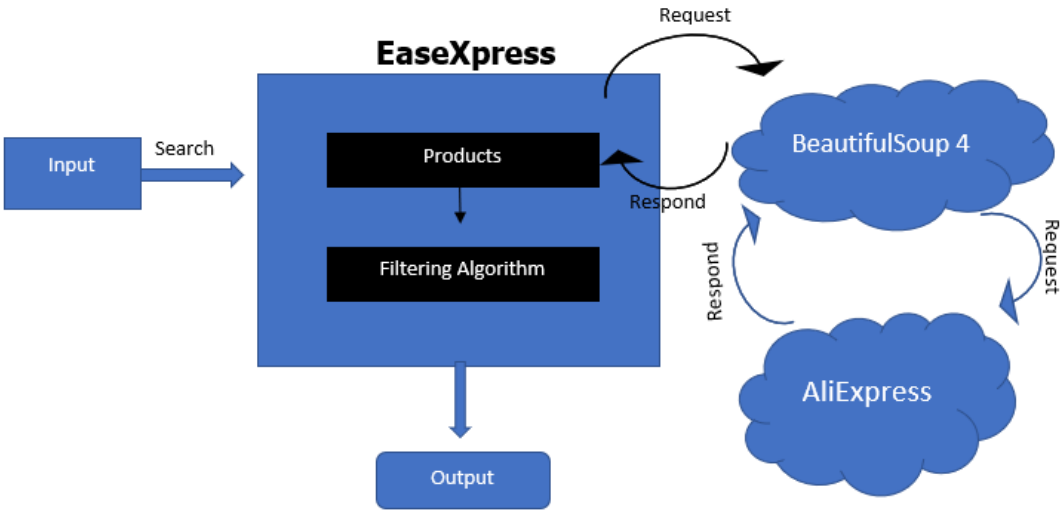
Technologies:

- HTML 5
- CSS 3
- JavaScript
- Python 3.7
- BeautifulSoup 4
- Django
- Visual Studio 2019

Group Members:

1. Ahmed Ali F16SW02 ahmed.amirulbahar@gmail.com
2. Aqib Ali F16SW26 aqibaliburiro0@gmail.com

System Workflow diagram:



Supervised by:

- ❖ Engr. Hira Noman

MUET WEB ATTENDANCE PORTAL

Abstract:

The world is revolving to become smart day by day and along with the emerging technologies it is working for preservation of the earth resources as well. Every year we waste a lot of paper in making attendance sheets and also a lot of time and human energy to manage the statistics of attendance manually. Attendance is one of the important process in the institute management, it requires zero tolerance for errors. The MUET Web Attendance Portal will automate the whole attendance process in order to ensure the accuracy of calculations, to provide reliable support for records and to produce the desired reports automatically and also to facilitate the end users with interactive design and responsive website that can manage the database automatically. The system saves a lot of time, paper resources, and human efforts and thus reduces errors. The portal will have details of all the students with their respective batches and departments as per their semester schedules. The instructor will login the web portal and mark the attendance of that particular class, the generated attendance will be saved in database. The administration and instructors both could access the portal and see the updates of attendance. This portal would be the medium between the instructors and administration to communicate all the details of attendance directly in web portal.

Technologies: HTML, CSS, JavaScript, jQuery, PHP, Bootstrap, MySQL database

Group Members:

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- Aqib Raza F16SW180 Aqiib.raza444@gmail.com

System Workflow Diagram:

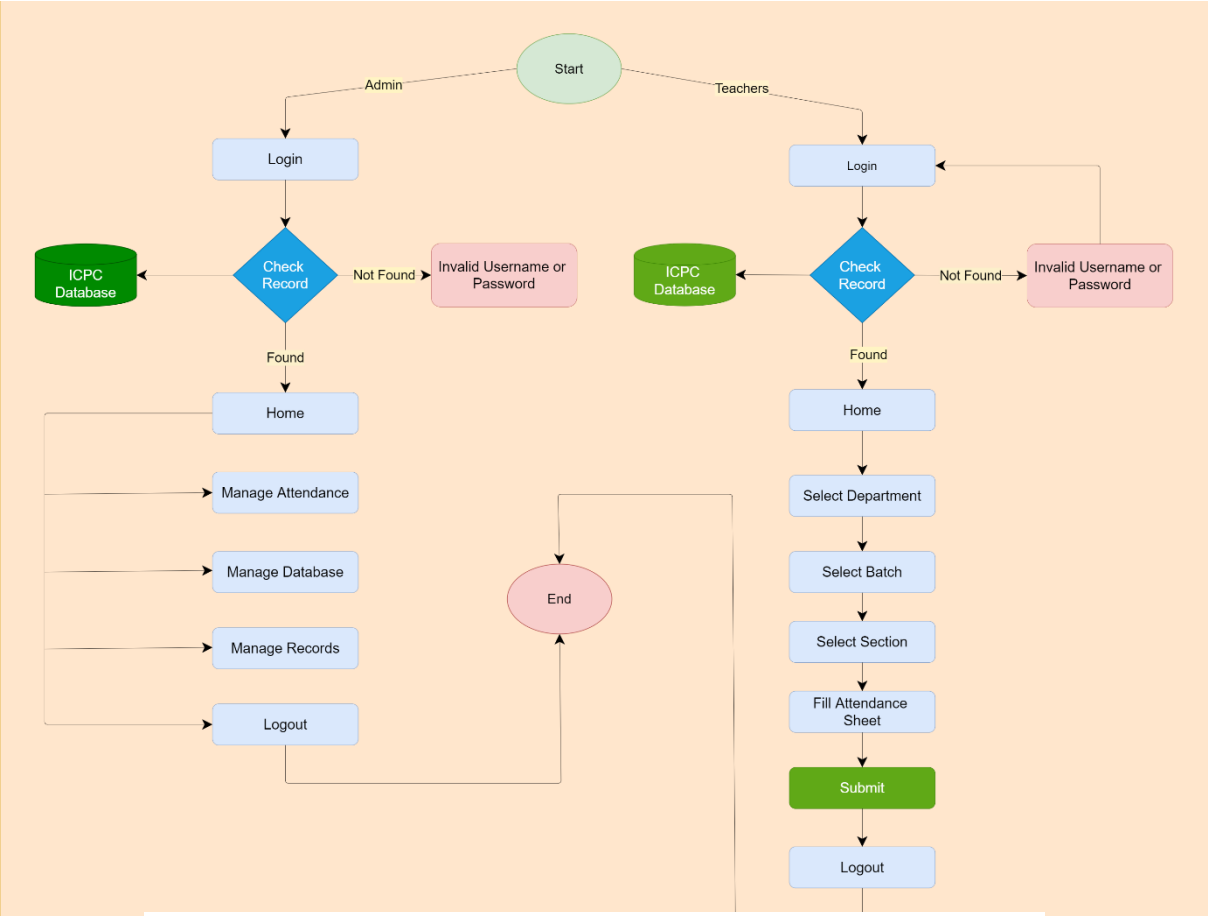

Figure. MUET Web Attendance Portal Workflow Diagram

Supervised By:

- Engr. Salahuddin Saddar

Web application for Student Financial Aid Office

Abstract:

SFAO is a web based application where Students can login to their account and fill form in various scholarships. They fill a detailed form in which they mention their personal informal, family information and different sources of income and also expenditures. Based on form data SFAO team decides whether student should be given scholarship or not. The web app has two sections first one is User and second one is an admin. User section comprise of various scholarship updates and all related things. User panel consist of various option like About SFAO, Achievement ,Donors and Scholarships ,Staff, SFAO, coordinators, Gallery news download ,Online applications form ,SMS service , Donate SFAO ,success stories ,Feedback form.students visit the website and will be able to know that which scholarship is available along with the deadline ,They must have to apply before the given date if they want to avail the opportunity for financial support .Admin section comprises of the all the information of students , that will be managed by admin . Admin can search, update student's records, generate evolutions sheet, Setup Scholarships, generate reports, send SMS to students and faculty members and add /import old student data.

Technologies: HTML 5, CSS3, Bootstrap 4, JavaScript, PHP and MySQL.

Group Members:

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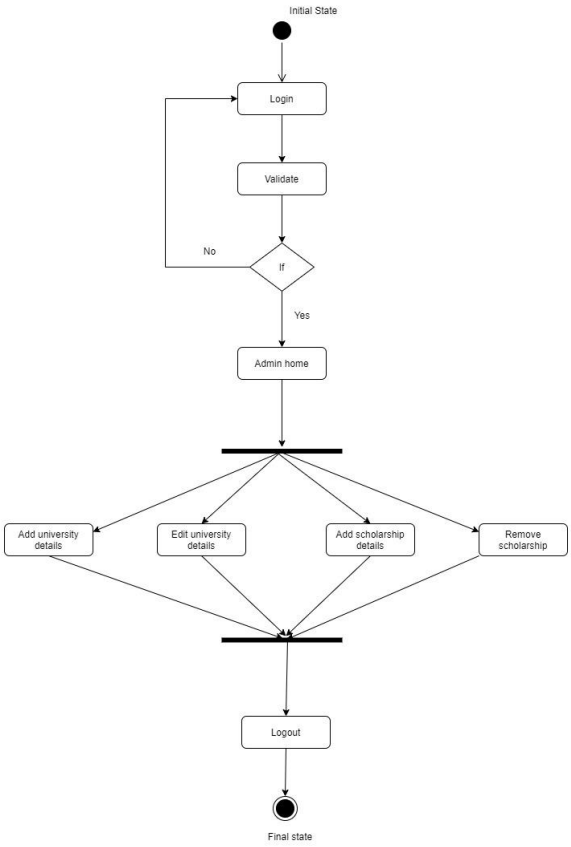
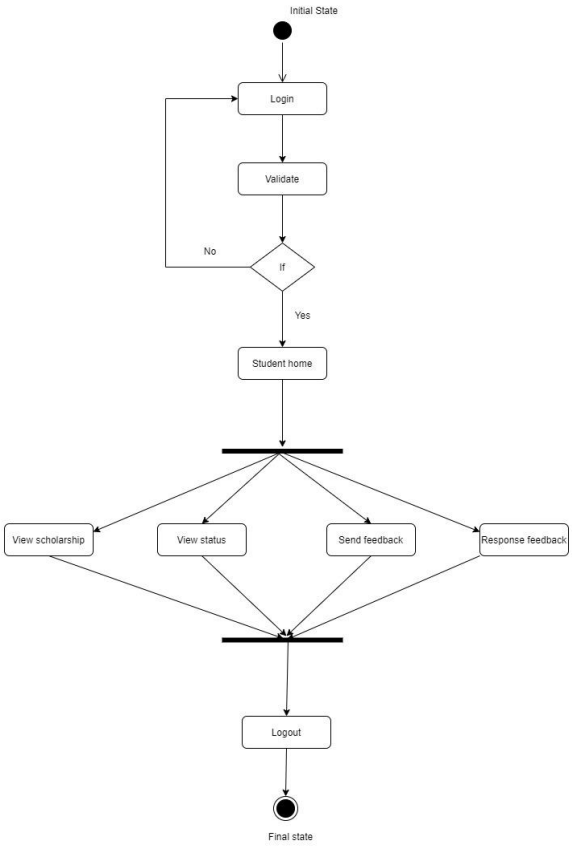
- Vinod Kumar F16sw61 vinodkumarnkt61@gmail.com
- Amir Hyder F16sw85 amirhyderkaloi@gmail.com

System Workflow Diagram:





Supervised By:

- Engr. Junaid Baloch

Teachers Welfare Council

Abstract

Teacher Welfare Council (TWC) is a web-based portal. This portal is designed to manage and distribute the funds of the Teachers Welfare Council, containing data of all the registered members in the database. This portal accommodates two entities Admin and User. Admin panel provides the flexibility to the administrator to perform all the necessary actions to manipulate data of the TWC members digitally rather than physically (Manually), which improves the efficiency of the process. While user panel facilitate the applicant by providing an Interface supporting all the details from eligibility to the grant of the loan and necessary requirements of the process. This portal is designed to get rid of the manual work which was done earlier resulting in the possibility of human error as well as slower work rate. Further the portal offers easy to use environment for both the Admin and the User (Applicant).

Technologies Used

Front End:

- HTML
- CSS
- JAVASCRIPT
- JQUERY
- BOOTSTRAP

Back End:

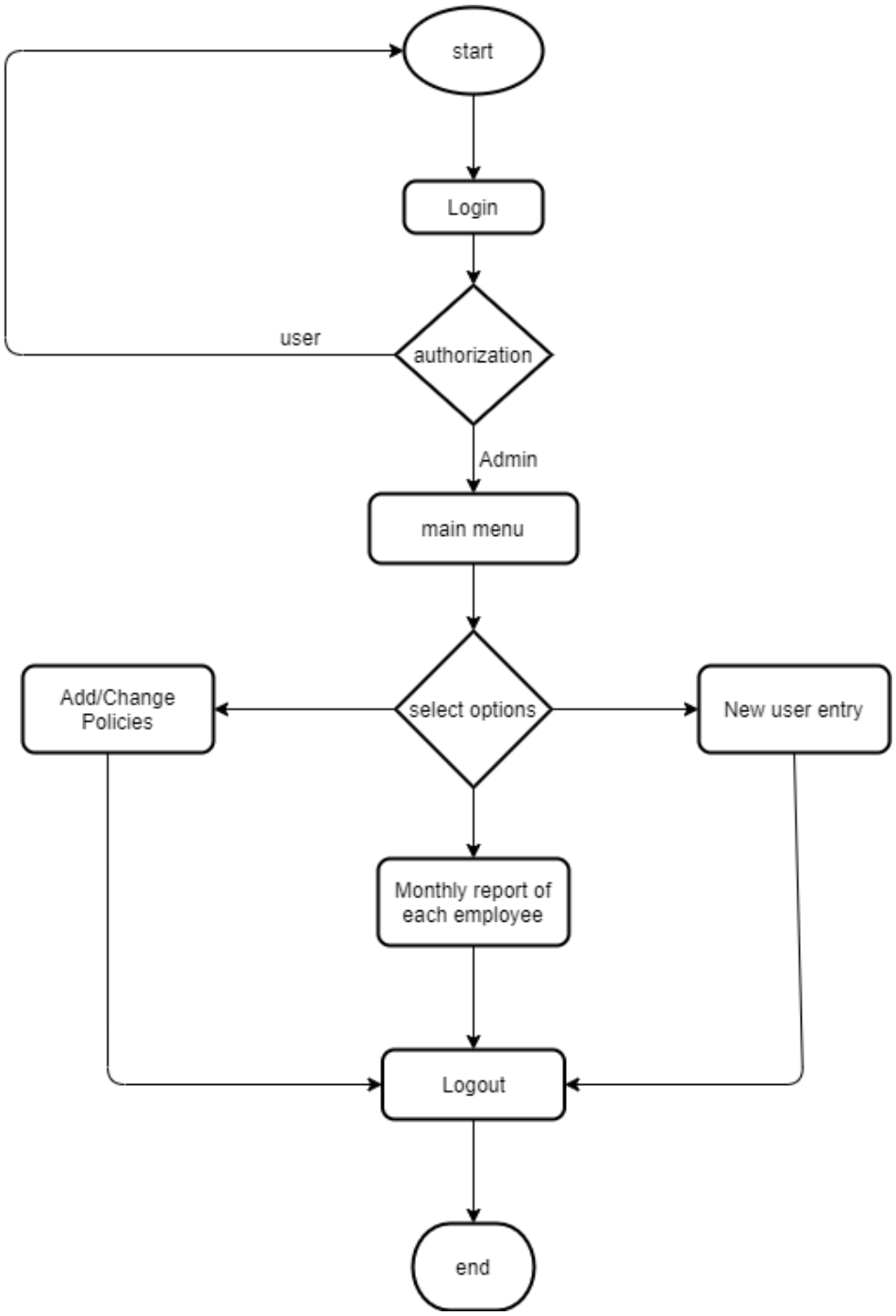
- PHP
- MYSQL

Group Members

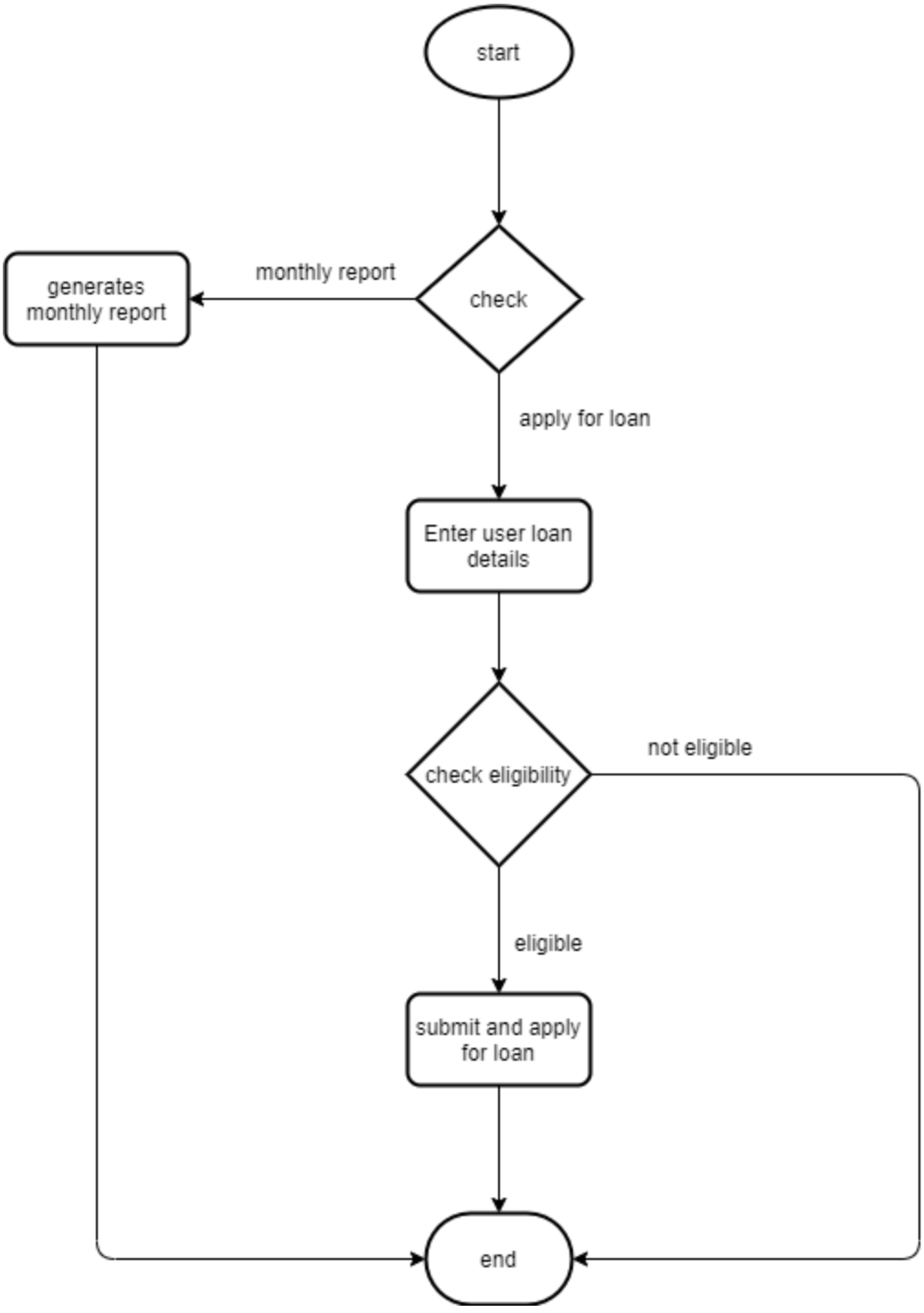
- Muhammad Sultan F16SW24 M.shykh@outlook.com
- Adeel Siddiqui F16SW176 adeelsiddiqui.muet@gmail.com
- Noor Ahmed F16SW182 ahmyyy04@gmail.com

System Workflow Diagram:

Admin:



USER:



Supervised By:

- Engr. Junaid Baloch

IDENTIFYING DEPRESSION RATE AMONG AGE GROUPS THROUGH SOCIAL NETWORKS USING SENTIMENT ANALYSIS

Abstract:

Depression is one of the most serious psychiatric disorders worldwide. The traditional examinations to measure the degree of depression in people are typically supervised in the form of questionnaires, that vary widely in length and format. Results from these tests are usually determined from the patient themselves, or by a third-party, but never from empirical data. Thus, these questionnaires can be easily manipulated to achieve a pre-determined prognosis. Social media presents itself as an excellent tool for timely depression diagnosis as it significantly reduces the social bias related with depression and provides people with related issues a means to form communities and support groups. In this research we will try to identify depression among users of social media. We have specifically selected Twitter platform for this study and in order to identify depression among its users we will apply natural language processing techniques on their public tweets. The users will be divided into groups according to their age and their tweets will be fed to the ML model to predict the rate of depression based on language used by them. The goal of this research is to develop efficient model that can correctly identify depression in majority of the cases.

Technologies: Python, Scikit-learn, Pandas, Twint API, NLTK, SQL Database, Google Colab, Lexicon Tool by the World-Well-Being Project.

Group Members:

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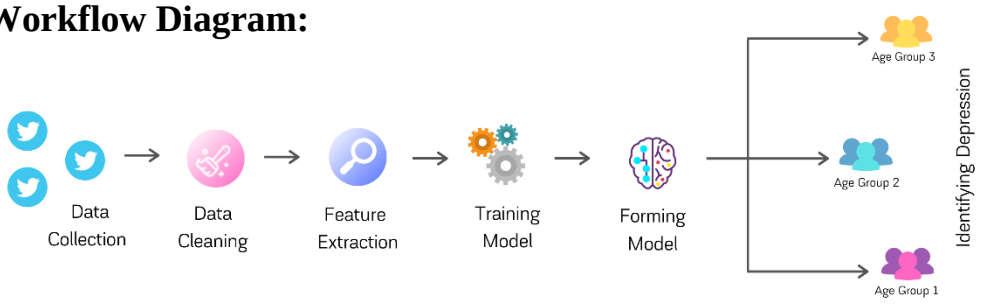
- Hassan Hafeez F16SW177 hafeezhassan196@gmail.com

System Workflow Diagram:



Supervised By:

- Engr. Memoona Sami

Improving the Performance and Congestion Control Mechanism of MPTCP (Multipath Transmission Control Protocol) over LTE Networks

Abstract:

The internet become wider today and most of the internet devices connected by the Multi routes where these routes thought of as the communication links between the source and destination devices addresses. For example, the mobile devices may have wireless interface for multiple protocol such as (LTE, CDMA2000 and WIMAX) Similarly the network server have multiple number of links to the networks. However, the conventional TCP restrict the communication to the single route per connection. To improve the efficiency of resource usage the conventional Multipath version of TCP protocol has been standardized referred to as **Multipath TCP (MPTCP)**.

There are several advantages of the MPTCP but also lack of several communication complications still need to be resolved. The Multipath transmission in the wireless network such as LTE network might have issue with the varying signal qualities. The routes carrying data fails due to the deep fade on the corresponding wireless link. When one communication link fails the starvation may occur on another link and due to this failing of links the multipath session setup and load balancing delayed thus compromising in user experience and hence also in the application performance. This is all due to the fact available that congestion control mechanism is triggered by the event that include lost data segment and Acknowledgment, which are very likely happen on the wireless networks without real congestion control condition

The Objective of this paper is to improve the performance and congestion control of Multipath Transmission control protocol

Technologies & Tools:

- Ns3 network Simulator (Project Implementation in NS3)
- C++&Python (Programming Languages to be used)
- Ubuntu (Operating system to be used)

Group Members:

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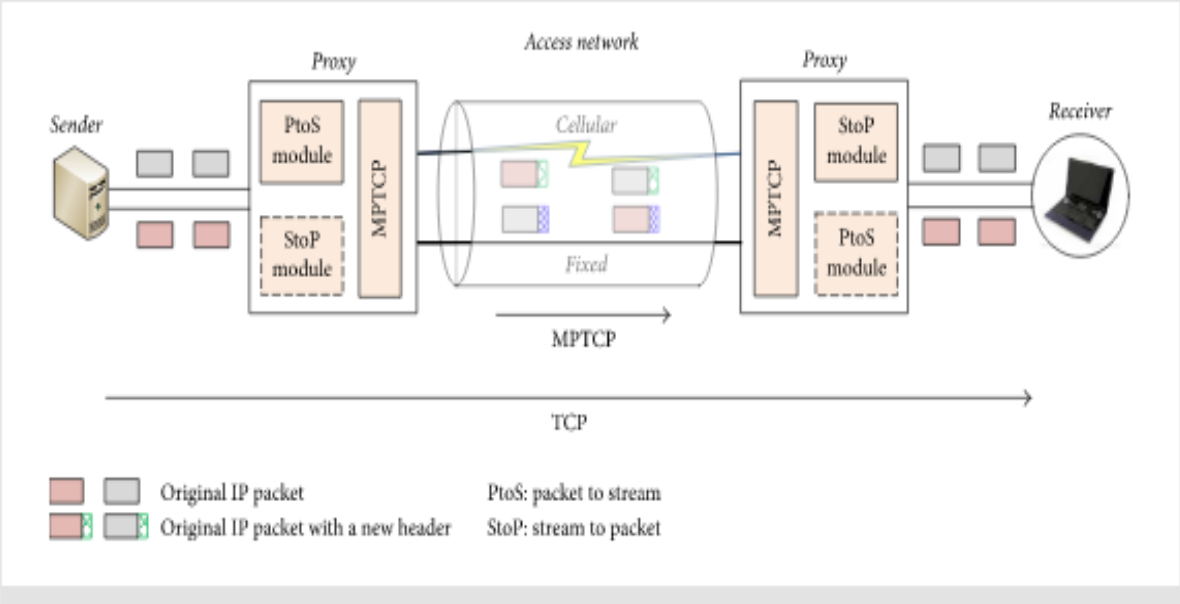
System Workflow Diagram:



Supervised By:

- Dr. Qasim Ali Arain

MUET Student Portal & Virtual Classroom

Abstract:

Until 2004 before Facebook there were people used social networking platforms like Myspace, Friendster, Blogger, SixDegrees etc. But they all were not so education oriented then the Facebook was introduced, which was basically a social networking platform for students of the Harvard University. The Facebook had the features like Chatting, Adding as Friend, Groups, Profiles, Commenting etc. in late 2006 as twitter was officially released Facebook introduced themselves to the world which meant everyone was able to join Facebook still Facebook is in educational sphere but as soon as people intended to join Facebook it became a distraction for students generally.

Let's take example of MUET we create groups on Facebook, Go Professional on LinkedIn & Submit our Assignments/Lab works on platforms like Google Classrooms, Piazza & Turnitin. Therefore, students must create accounts for every platform individually, every platform has its own Procedures, functions & features. Also, they are not even complete Learning Management Systems.

Thus, we are to propose a solution for such issue we introduce One-for-all solution "Student Portal & Virtual Classroom". A web-based student socializing portal where students will be able to interact with the other students within University; not only this but teachers can as well join the portal which will be connecting them with students on portal. This portal is going to be limited only in university sphere.

Technologies:

- ✧ Tool we are going to use for designing, developing and Mockups:
- ✧ HTML5,
- ✧ CSS3,
- ✧ Js (jQuery) & Bootstrap on Frontend
- ✧ MySQL on Database
- ✧ PHP on Server-side programming
- ✧ Photoshop for designing (Icons, Buttons etc.)
- ✧ Balsamiq Mockups 3 for mockups

Group Members:

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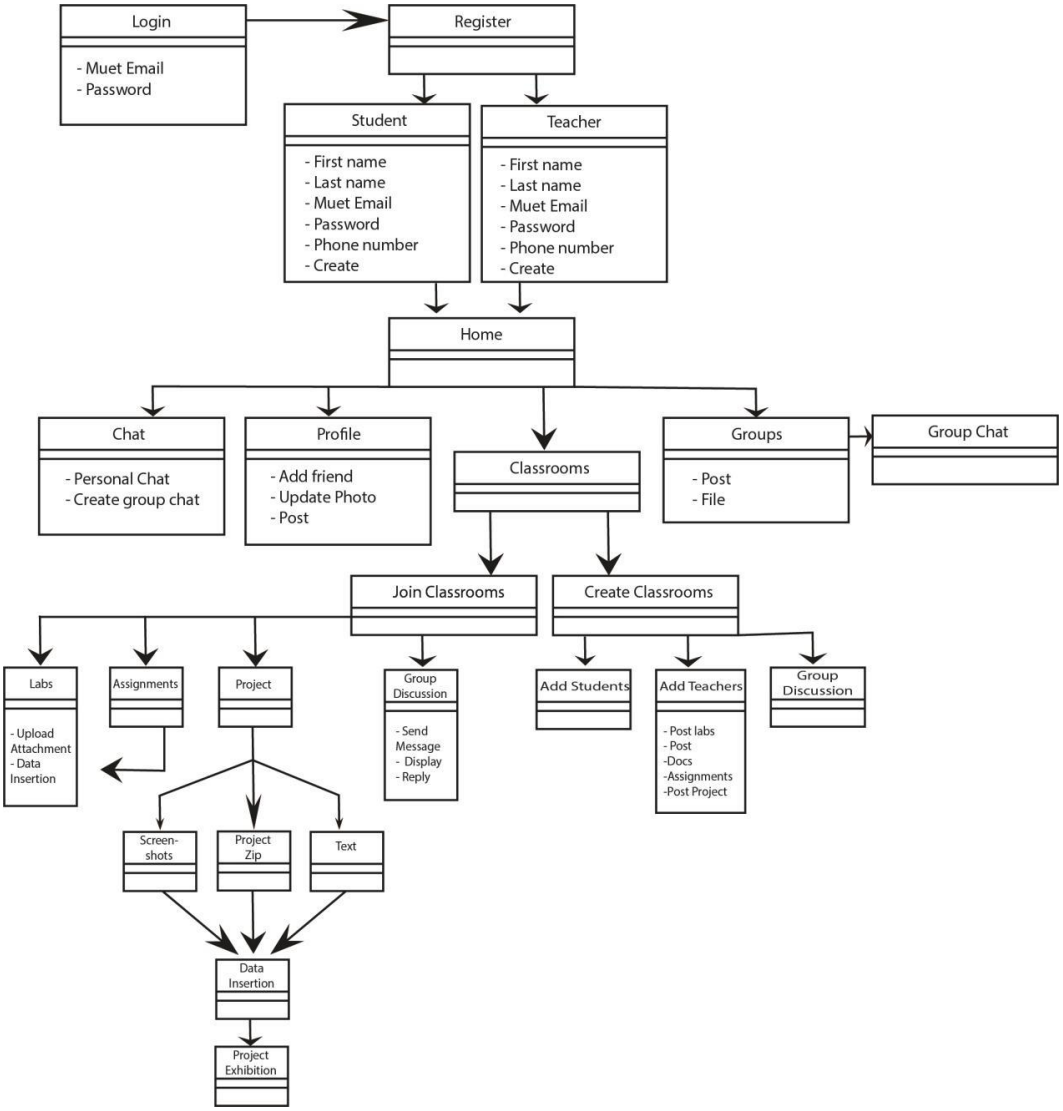
- Nida Zafar F16sw74 nidazafar865@gmail.com
- Ali Mujtaba F16sw92 sarangmemon8@gmail.com

System Flow Diagram:



Supervised By:

- Dr. Qasim Ali Arain

FARM MANAGEMENT APPLICATION

Abstract:

Today's world is the world of technology and Technology is fast-growing trade in this modern period, still, the old age system is implied in Farming and Farm Management System. Still, the system which is used in the Farm management system to keep records of fields still the people using ledger and manual system for record-keeping.

The project comprises the number of modern era features, to integrate such bulk of features outsourcing would be a mandate for us to ensure the qualitative product and services to deplete the old age-based systems and convert into the technological system. Bearing in mind the Artificial Intelligence(AI), AI would be the major asset of the application and it makes the application entirely different from our competitors. The strategies and policies would be entirely defined before the launch of the application, agreements with logistics, farmers, industries, corporate sectors, mills, farms, and consumers to tackle down problems concerning payment, registration, buying, selling and quality of service and product

Technologies:

HTML: HTML is a standard markup language for web pages. Page layouts and design will be done through html.

CSS: CSS is a Cascading Style Sheets. It will manage the html pages how the pages will look like and elements to be designed.

PHP: PHP is a Hypertext Preprocessor language mostly used and open source scripting language, and its scripts are to be executed through server.

JAVA SCRIPT: It is client scripting language, validation and animation tasks will be done through the java script.,

MYSQL: It is Relational database management system based on SQL and database of project will be made on the MYSQL, it is free and open source platform for database.

Apache: APACHE HTTP Server is a free and open-source web server that delivers web content through the internet.

AI: Artificial Intelligence sometime we can say that machine intelligence refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions and to predict the future events also. AI like Decision tree , Data Mining are used to predict the weather forecast.

Group Members:

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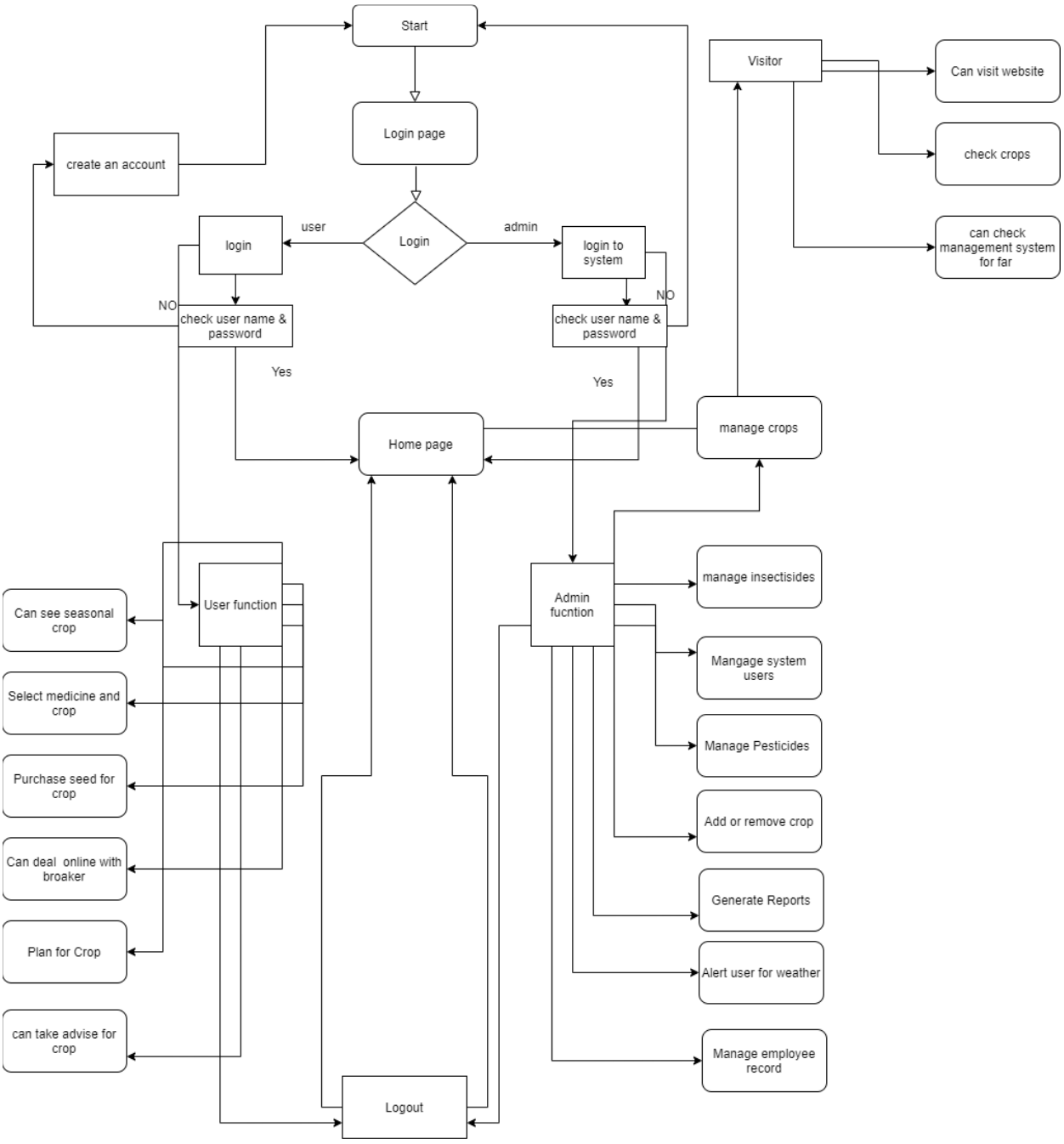
- Muqadas Baloch F16SW183 muqadasbaloch54@gmail.com

System Workflow Diagram:



Supervised By:

- Engr. Zahid Hussain Khaskheli

HR Career Portal

Abstract:

The idea of the project is to develop a Web based application which is used for online recruitment for the jobs. This application will be used by Human Resource Manager of the companies to posting a new jobs of the company and conduct a live session video chat interview with the eligible candidates. Candidates will also use this application for getting notification of new jobs relevant to their skills and they can for those jobs.

Technologies: HTML5,CSS3,Javascript,Angular,Bootstrap,Hibernate,Spring Boot,Mysql

Group Members:

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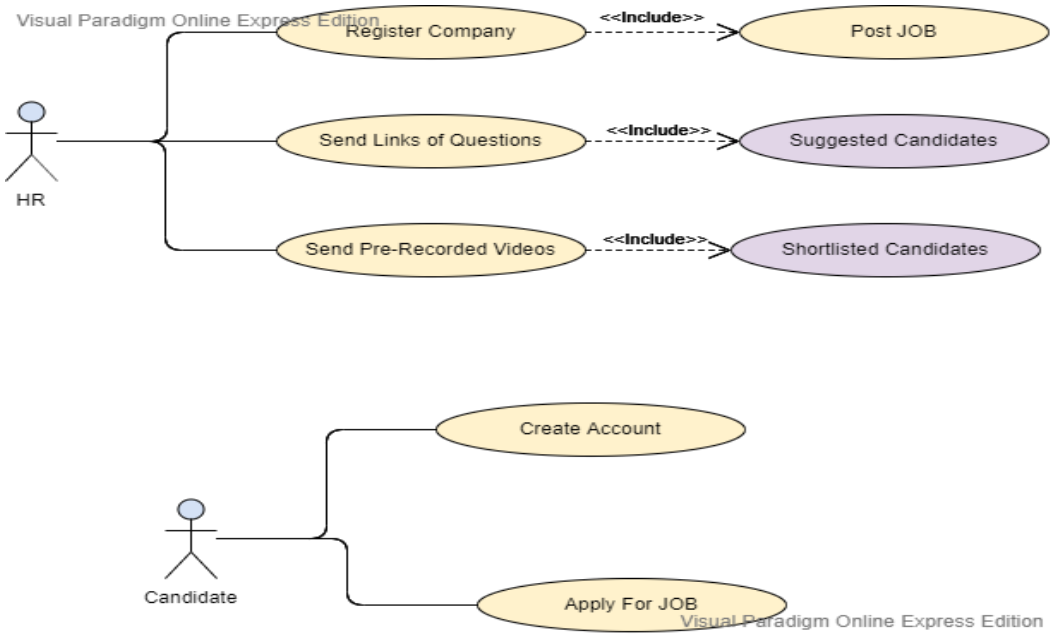
- ❖ Muhammad Waqar F16SW13 mohammadwaqar401@gmail.com
- ❖ Alishbah Ikhlaq F16SW160 alishikhlaq65@gmail.com

System Workflow Diagram:



Supervised By:

- ❖ Engr. Salahuddin Saddar

Blockchain-Based Document Verification System

Abstract:

While educational institutes keep records, for example, verification and authentications, they are regularly approached to impart these records to other institutions in line with students for admission to the new instructive institute, and so on. While the transference of academic records is an everyday activity of organizations, it requires verification from the parent organization. Facilitating this, permission blockchain, for example, Hyperledger, gives a powerful and scalable and private solution for verification. Our project is on a web interface to enroll and demand an archive for verification, with verification on backend utilizing Hyperledger to keep a hash of records in the blockchain for confirmation. With the recent methods using blockchain, these traditional methods have begun to use strategies of blockchain and to execute verification/authentication. Such solutions give steady academic records of a student that help outsider validation without noteworthy exchange costs and related expenses. A successful electronic record verification should have the following potential:

• Completeness

• Scalability Security

• Confidentiality

While adopting a blockchain-based solution for dynamic applications, various issues should be thought of. What's more, due to blockchain immutability, taken in consideration of students' information is stored as to secure privacy.

Public blockchain chains like Bitcoin have a known scalability issue, with low limits of transactions that can set you up on schedule and at a high cost per transaction. Different solutions are intended to scale the development of blockchain, for example, the Bitcoin Lightning Network to make channels between members, just as Ethereum Sharding, which can extend the transaction limit for Ethereum.

These limitations motivate the academic institution to empower blockchain based systems, for example, the Hyper Ledger, Permissioned blockchain based systems that work on private, separated systems where users are identified and hence trusted due to identifiability. The Hyper Ledger is a blockchain network framework for private and permissioned systems, utilizing smart contracts and keeping the record unaltered. Hyper Ledger Composer is a procedure for developing applications based on Hyper Ledger, This allows the institute to maintain privacy for academic records of students' document exchanges, and to get control to refrain form the information accessible, and only as per specific needs.

Technologies:

- Php
- HTML
- CSS
- Bootstrap
- JavaScript
- SQL server
- Hyperledger

Group Members:

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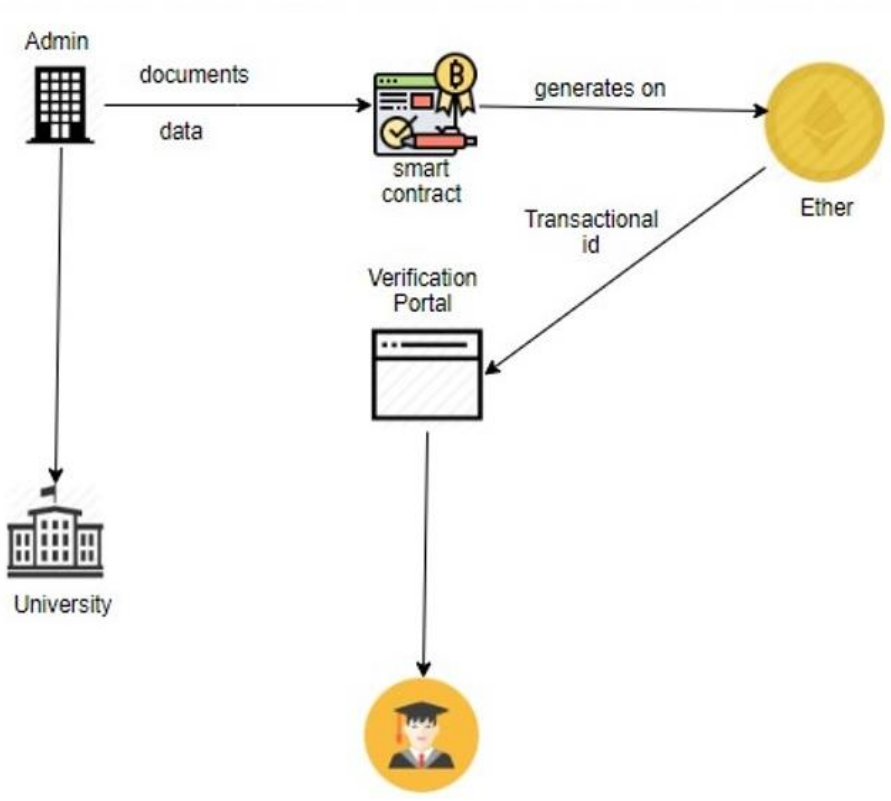
❖ Sarmad	F15SW87	sam999654@gmail.com
❖ Osama Pathan	F16SW47	osamapathan10@outlook.com

System Workflow Diagram:



Supervised by:

❖ Dr. Isma Farah Siddiqui

FoodMeter

Abstract:

Desi Foods are prepared by combining variety of food items and to know its calories can be one big task. Health conscious customers visiting different eateries would want to know how much calories are there in their desi dishes to consume them accordingly. And also searching calories of these dishes online is also a difficult task to accomplish. For that purpose, a user-friendly mobile application that identifies desi dishes from captured images and also which provides its calorie information to the user will be beneficial in that regards.

By collecting food calorie data and manipulating the data using Artificial intelligence for identifying the captured images and using programming for calorie estimation, the main functionality of receiving calorie information by the user can be achieved accurately.

For precision and accuracy calorie data should be universally identified and also pictures from smartphone should be accurately captured.

Technologies:

- Android Studio
- XML
- Firebase
- Java

Group Members:

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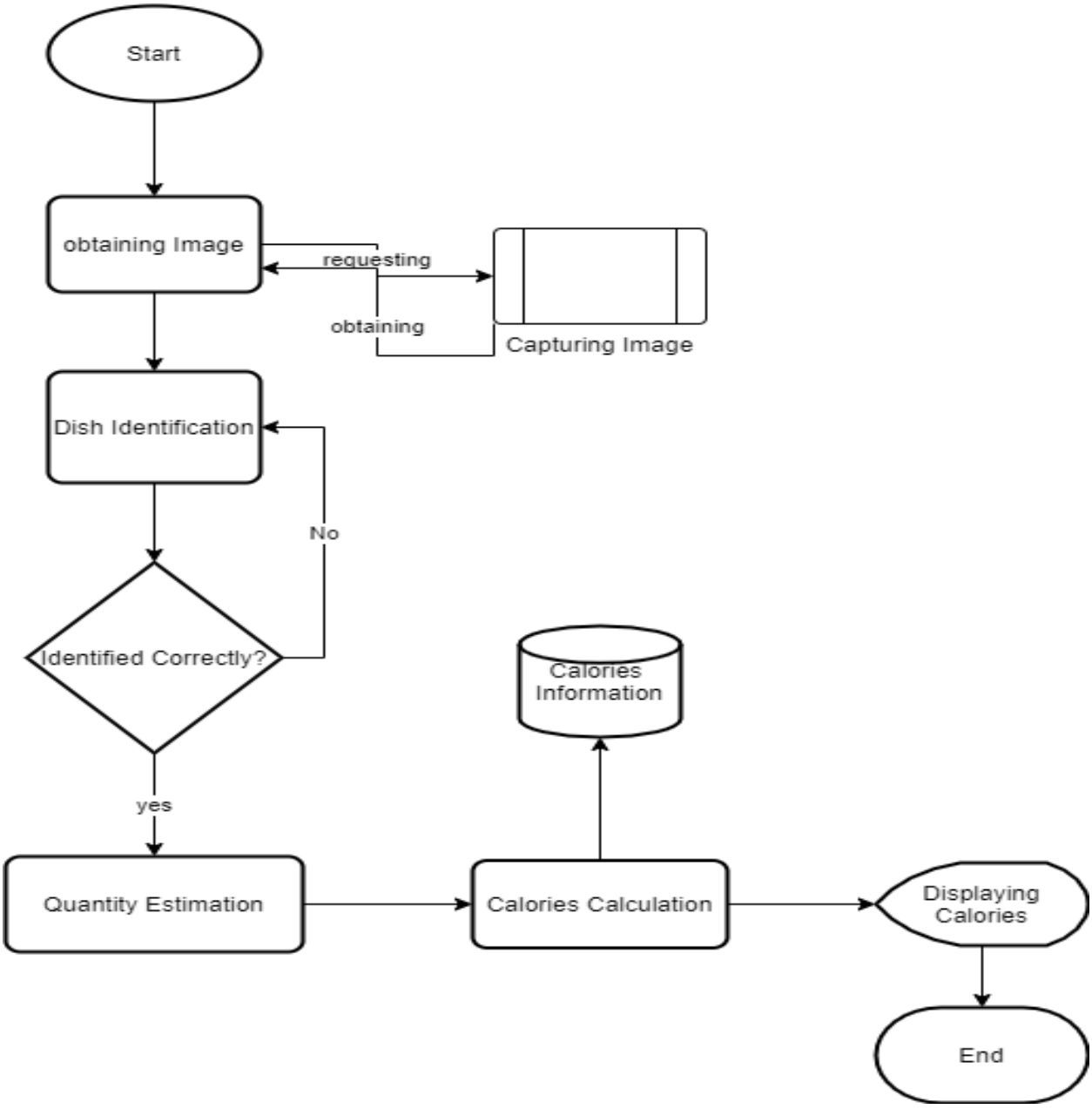
- Abida Parveen F16SW08 abida.parveen840@gmail.com
- Hina Bhutto F16SW23 f16sw23@students.muet.edu.pk

System Workflow Diagram:



Supervised By:

- Dr. Mohsin Memon

IoT based Baby Monitoring System

Abstract:

This project is for today's parents who are busy in their work most of the time whole day so that they can ensure the proper care of baby's health and safety. This system will detect the baby's motion, sound of crying, heart rate, body temperature, environment condition, position, sleep pattern, and some more things. Using some hardware components this system will detect all these things and show all the results on a Mobile application which is especially design for the parents. So parents can easily take care of their baby from anywhere anytime, and know baby's condition, is baby alright or not.

Technologies:

Arduino, Python, Android, LM35 (Temperature Sensor), Pulse Rate Sensor, MIC (Sound detector), MH flying fish (Motion Detector), Esp8266 Module (Wi-Fi/Bluetooth Module)

Group Members:

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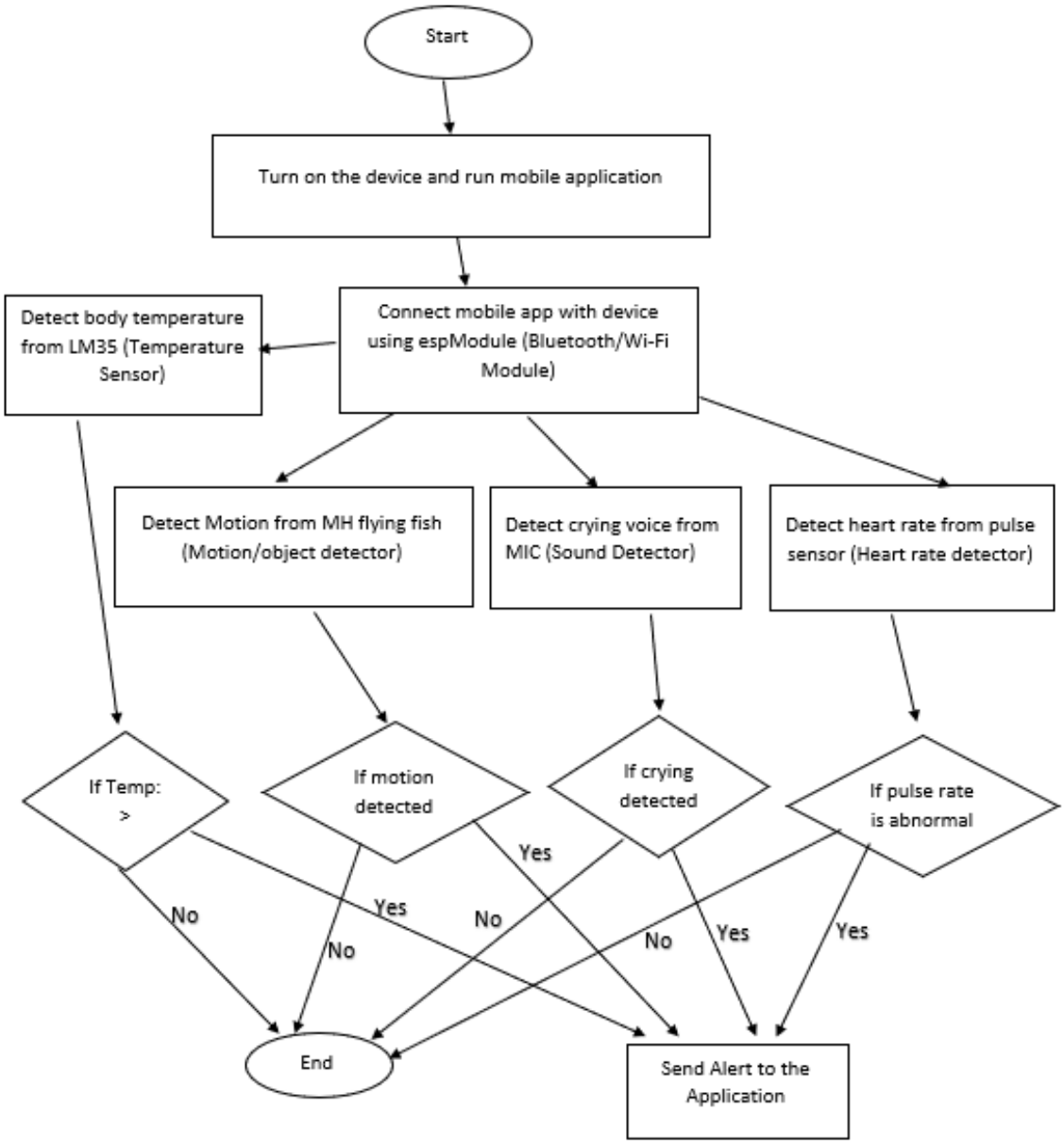
System Workflow Diagram:



Supervised By:

- Dr. Mohsin Memon

Human Fall Detection in Old Age Homes Using Kinect Gesture Technology

Abstract:

As elderly people are weaker so the risk of fall may be increased, and it is major causes of death and injuries for elderly people. No one can monitor them all the time. The existing cameras and other stuffs need times in installation and other processes and are may be very expensive approaches. This project describes our platform for movement monitoring and fall detection of person which is based on data acquired on Microsoft Kinect Sensor v2.This platform is programmed in C# programming language for analysis of obtained spatial data and future modularity to create sophisticating monitor platform. Therefore falling detection is a major need. This method being used is to get a set of data on the position of the person.

Technologies:

- Microsoft Kinect V2
- Microsoft Visual Studio 2013 Community
- Microsoft Net Framework 4.5
- Microsoft Azure

Group Members:

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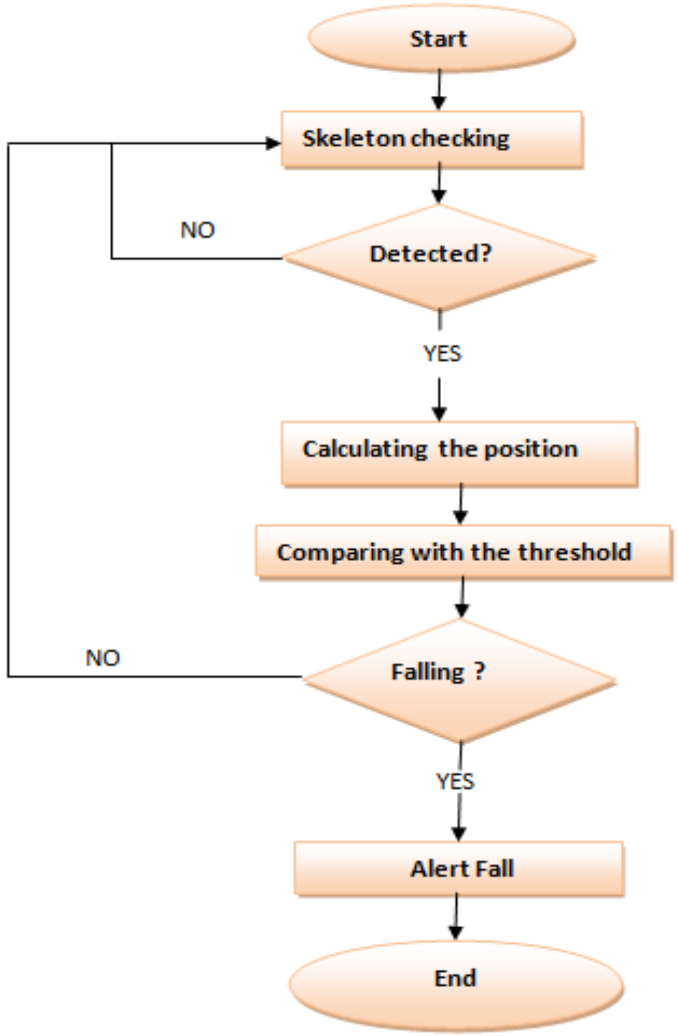
❖ Misbah Zahra	F16SW86	misbahzahra12@gmail.com

System Work-flow Diagram:



Supervised By:

- Dr Mohsin Memon

NO HUNGER

Abstract:

Many countries in the world are facing difficulties in getting proper food resources for their people to fulfill their needs, many of the people dies due to food starvation and malnutrition. Pakistan is one of the countries existing in the list. According to the survey in 2016 there were 40% of the population that are malnourished or even starved due to unviability of food and inadequate quality of available food. Pakistan is underdeveloped country it faces many challenges which include poverty, food insecurity and continuous natural and manmade disasters. One of the causes of food insecurity is food wastage, upper and middle class of our society wastes a lot of food which could be consumed in many ways. If this cycle continued it can cause, people dying in hunger and people going for suicide because they can't afford the food. Like many other applications working all over the world to manage the uneaten leftover meals we worked to put efforts to stop food wastage by developing an android application named "NoHunger" on which different restaurants are registered and agreed to give their leftover food to us which can be processed and delivered to the needy people.

Technologies:

No hunger is basically a communication app /platform between riders, or donors and common people, through this you can easily communicate, track and send notification to each other seamlessly. through a centrally connected database, all information will be saved and efficiently processed.

The technologies we are using to build this application are:

- **Firebase:**
  We use firebase for user authentication, and to use their cloud database.
- **Android/Java:**
  Android studio is used to build the mobile application and use java language with it.
- **Firebase cloud store**.
  We use firebase cloud store database rather than Relational databases in order to make our system scalable for the future use and to implement cloud features in it.

Group Members:

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- Fiza Karim F16SW78 fizzypalijo@gmail.com

System Workflow Diagram:

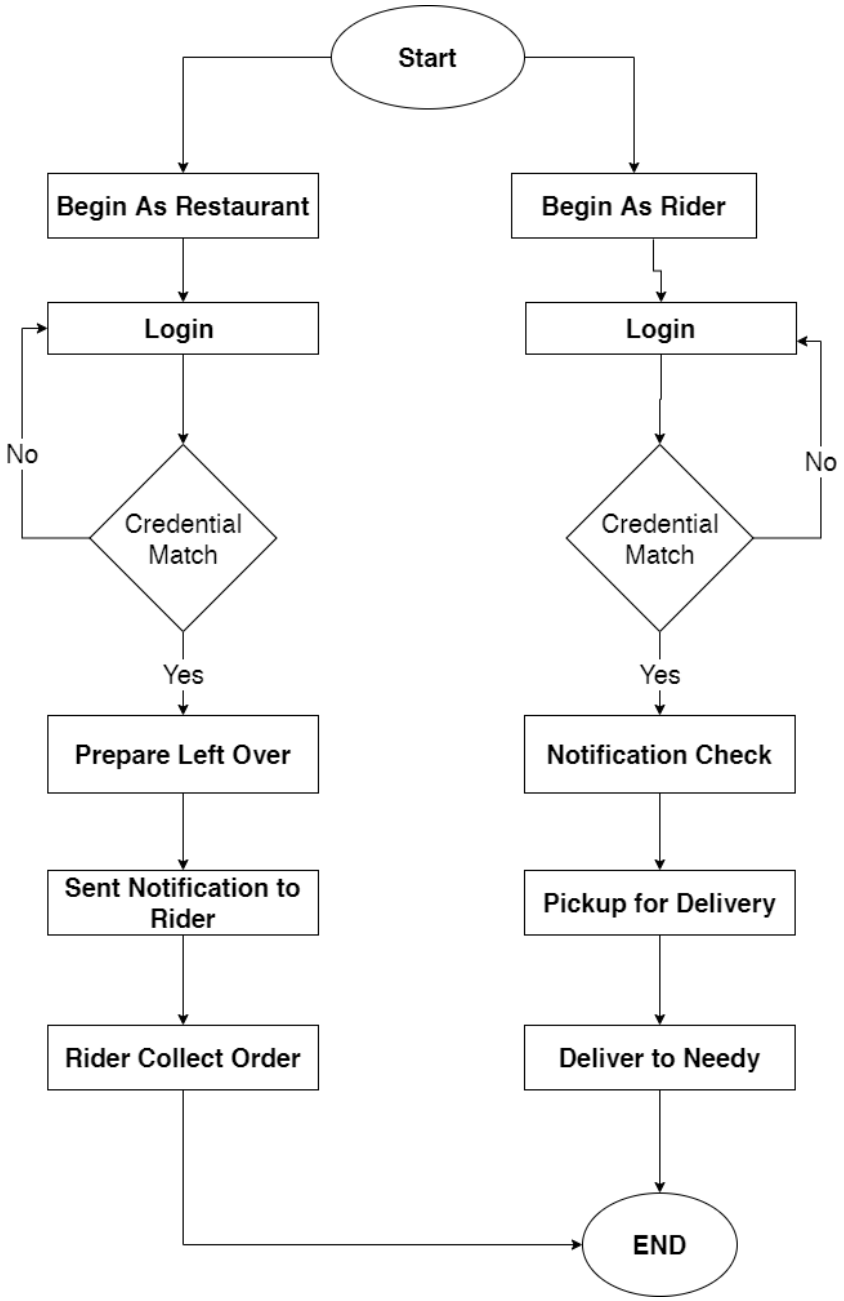


Figure 1. System Workflow Diagram of NoHunger.

Supervised By:

- Dr. Sania Bhatti

Software agent for automatic file organization on Pc

Abstract: A Software Agent is more like a computer program which acts like an agent for the user. The concept of software agent is not clear to many people. To clear that concept we are working on this project. We are trying to make things easier by creating a website which will be surely beneficial for the future and present trends.

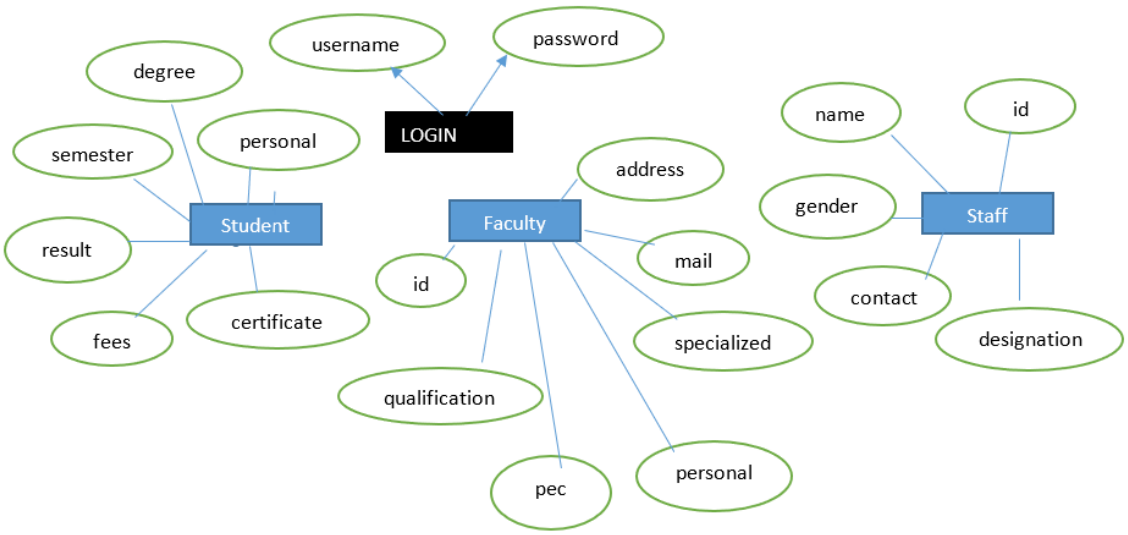
The purpose for making this website is that it would be easier for students as well as for teachers to access any information. If teacher post the marks then the student can view that by login in to his/her account. Students can request the clerk if they want any challan or certificate then the clerk will see if he has got any notification regarding that thing then he will respond accordingly, if he has the challan or the certificate than he will upload that or send to that particular student which need the challan . As well as this will also be easier for teachers to post everything there rather than posting it to the notice boards. Clerks can easily check that how much stuff they have got for the department. They can also view and check it on website.

Technologies: HTML , CSS , JAVASCRIPT , BOOTSTRAP , PHP , MYSQL DATABASE.

Group members:

- Arsal Patoli F16SW34(GL) arsalahmed2k16@gmail.com
- Shabana Tanwari F16SW33 Shabanatanwari@gmail.com
- Areesha Talpur F16SW155 meerareesha@gmail.com

System Workflow Diagram:



Supervised By:

- Dr. Naeem Mahoto

Management Information System for Post Graduate Institutes of Mehran University

Abstract:

For many years Mehran University of Engineering and Technology Administration has been working with paper-based documentation for Postgraduate Student records such as their attendance, fees, no dues, initial and final seminar, thesis submission, certificates. It is working fine for them but the biggest drawback in paper-based work is that it is hard to keep track of each and every student record and unfortunately if anything misplaces, there would be serious consequences. Also, to store all that paper-based documentation it would require plenty of space. And suppose if we have to find a particular student record it would take a lot of time to look for that record in paper-based work. So, to completely shift from paper based work to electronic based work a web application should be developed which will be utilized and managed by Post Graduate Institute of Mehran University to store student records digitally which would bring flexibility in handling student records as they can easily manage and search for a particular student record just by typing that student roll number and no documents will be misplaced as all the records are stored in a database. Due to this web application, teachers would be able to mark students' attendance digitally that would save the administration a lot of time as it would be easy for them to manage and update student's attendance records. The web application would be beneficial for students as well because they can view their pending no dues information. They can submit their documents such as if a student has paid his semester/exam fee, he would be able to submit a scanned copy of his fee challan along with his details. The students would have the facility to apply for their initial and final seminar online. They would also have the facility to submit their thesis on the website which would be approved by the respected teacher and they would be given a thesis submission certificate by the teacher after they have submitted their thesis.

Technologies:

- **Front End:** HTML5, CSS3, Bootstrap, jQuery, Ajax
- **Back End:** Java EE, Servlets, JSP
- **Database:** MySQL

Group Members:

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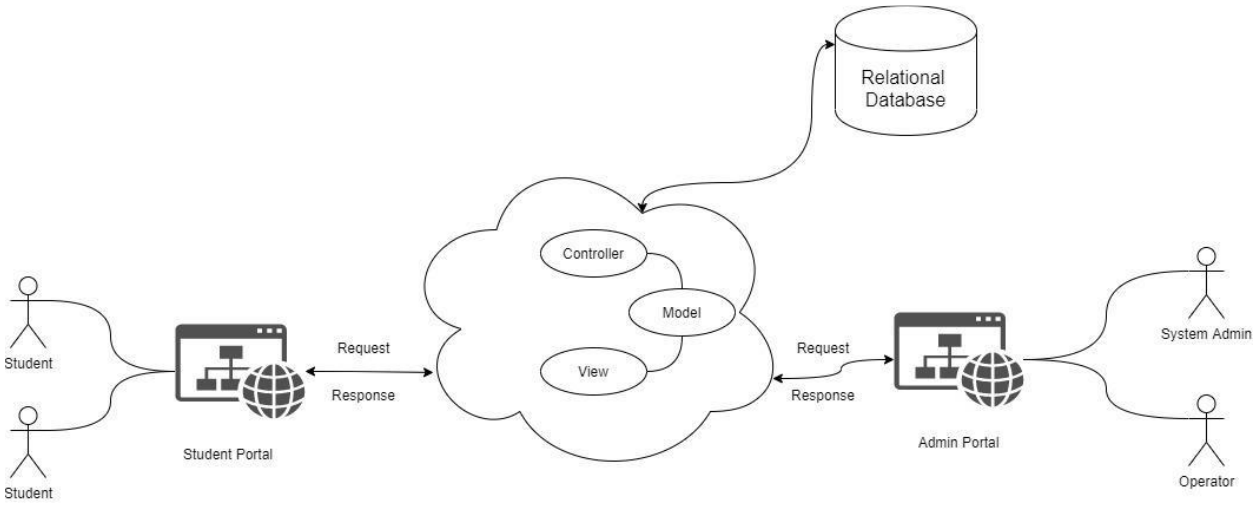
System Workflow Diagram:



Supervised By:

- Dr. Naeem Mahoto

Automated Software Testing application for Academic projects(TestHub)

Abstract:

Testing is a powerful methodology for delivery of quality software in contemporary competitive environment in the field of software engineering and computer sciences. Heretofore, software testing has not been revolutionized to produce paradigm shifting substitute to manual testing. Why manual testing is not replaced yet by sustainable automated testing tools to extent it needed compared to other technologies as planning (Gantt Chart, MS Project), designing (Sketch Up, Adobe Illustrator), and Coding (Anaconda, Eclipse) and so on.

Testhub is a web-based platform that provides testing as services to cope the drawbacks and workload of manual testing with numerous features. It will render service by performing functional (Script Execution, and Regression Testing) and non-functional (Load Testing, Performance Testing, and Security Testing) testing of given snippet of code. This platform will prove as foundation stone in the arena of automated software testing.

Technologies:

- **JDK 1.8**
- **Adobe Photoshop cs4**
- **Operating System:** Any Windows Operating System.
- **Client Program:** Any Browser.
- **Apache Tomcat 9.0.IDE:**
- **Language:** Java EE, Thymeleaf , HTML, CSS, JavaScript
- **Client side Scripting:** JavaScript, HTML, CSS, Bootstrap.
- **Database(DB) software's:** MySQL.
- **Intermediate Language:** Java Virtual Machine.
- **JRE 1.8** JRE for run Java Application and System
- **JAVA EE:**
- **HTML, XML**
- **JavaScript**
- **Apache Tomcat 6.0.18 Server**
- **Spring Tool Suite**
- **XAMPP**
- **SQLyog**

Group Members:

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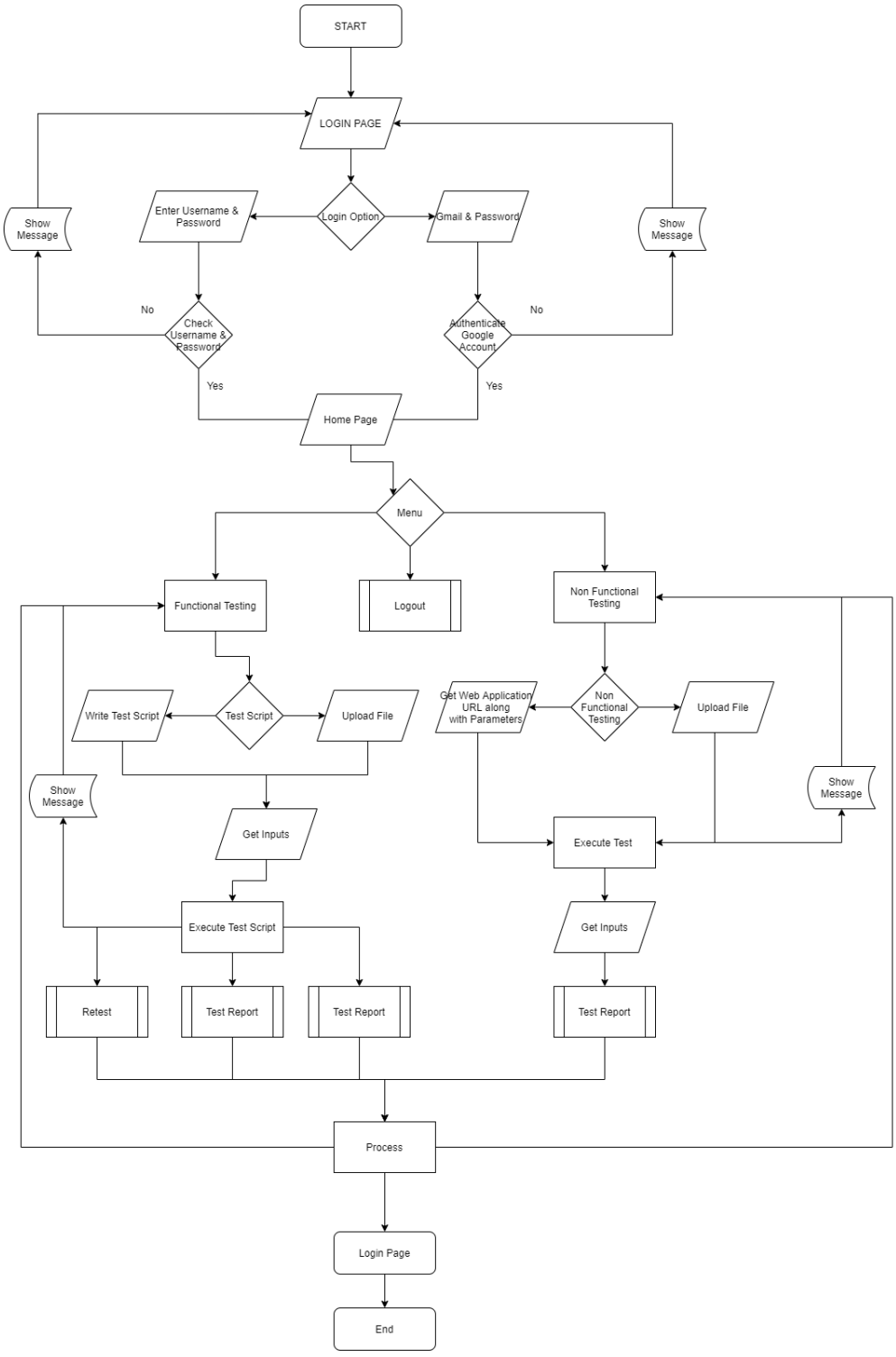
❖ Tahir Hussain F16SW67 tahirhussain7929@gmail.com

❖ Zahoor Ahmed F16SW91 zahoorogahi@gmail.com

System Workflow Diagram:



Supervised By:

- Dr. Isma Farah Siddiqui

SOCIETY MANAGEMENT SYSTEM

Abstract:

Society Management System is the website portal that connects the society members and officials with each other. Our proposed system makes it easier for administration and society members to efficiently manage details and be aware of what is happening in the society .This will help them eliminate stress and disruption caused by missing a special and important detail in the society. Society management system can be used by admin as well as users. The administrators and members has authority to login to the website and manage their own profile. In this system admin can adjust houses for the society, register other members and allocate particular house to a particular member and send notifications to the members. Society management system allows members to login with their own account and get updated with society happenings. When a society member sells or rents house to another society member then he/she has to pay via through online payment. The system has automated functionality for calculating monthly maintenance and members can view their bill status on their account generated by admin. The main functionality of this project is that, there is a voting system for different society positions like Secretary, Chairman, Treasurer Etc. Members can cast vote to the candidates that are standing for different roles in society. There is an integrated complaint module through which registered members can post complaints online and admin can manages those complaint posted by members. It is a timely cost effective solution to society management problems. This website is flexible enough to be modified and implemented as per future requirements.

Technologies:

Front End technologies:

- HTML5
- CSS3
- Bootstrap
- Jquery
- Thymleaf

Backend technologies:

- Spring Boot
- JPA
- Hibernate

Database used: MySQL

Tools:

- STS for java development
- XAMPP for database.

Group Members:

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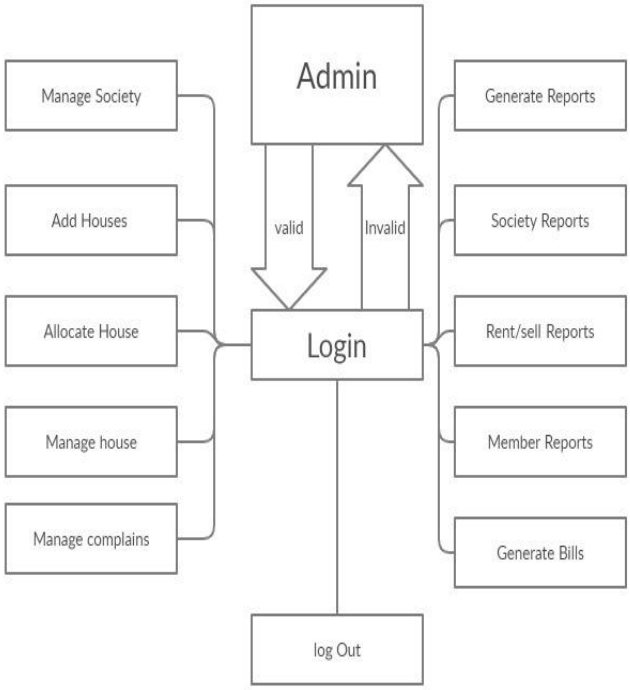
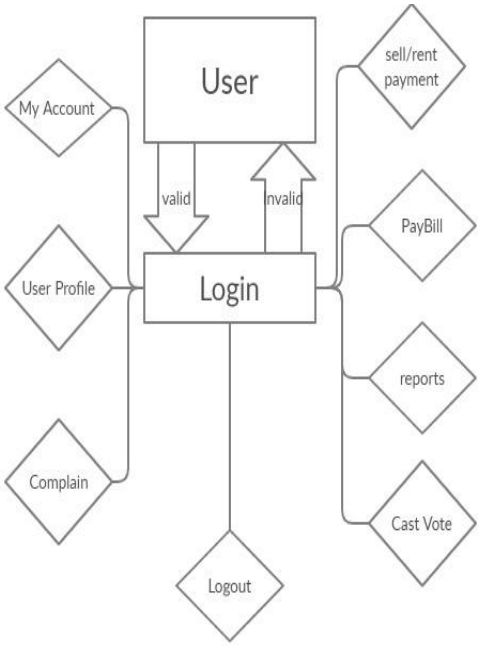
- Jawad Ali F16SW44 jawadmagan@gmail.com

System Workflow Diagram:





Supervised By:

- Engr. Amirita Dewani
- Tariq Hafiz Lakhiar

Real Estate Management System

ABSTRACT

The main idea of this project is to develop a Web Based application that is used for Online Property Management system. As we know that this is the period of digitalization. In this period if you want to be in the market you must run your business through computers and technology to provide best of your services to your clients.

This online real estate Management system is perfect tool to digitalize the real estate business that is being run manually. This system is developed for the companies which run real estate business. This make sure 24×7 service to the customers. Just few clicks are required to visit and confirm the property. Payment can be done online.

This is a web based software and one can have its access from anywhere. In this system one can sell or buy the property and can have offices, bungalows and shops etc on rent.

Technologies:

Html, Css, Javascipt, Bootstrap, Php and MySql

Group Members:

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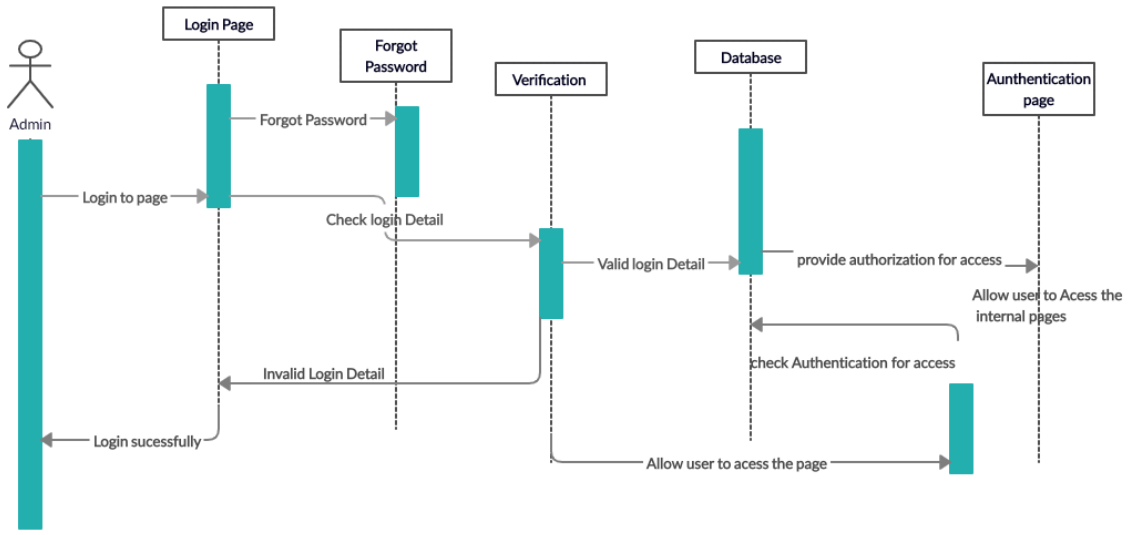
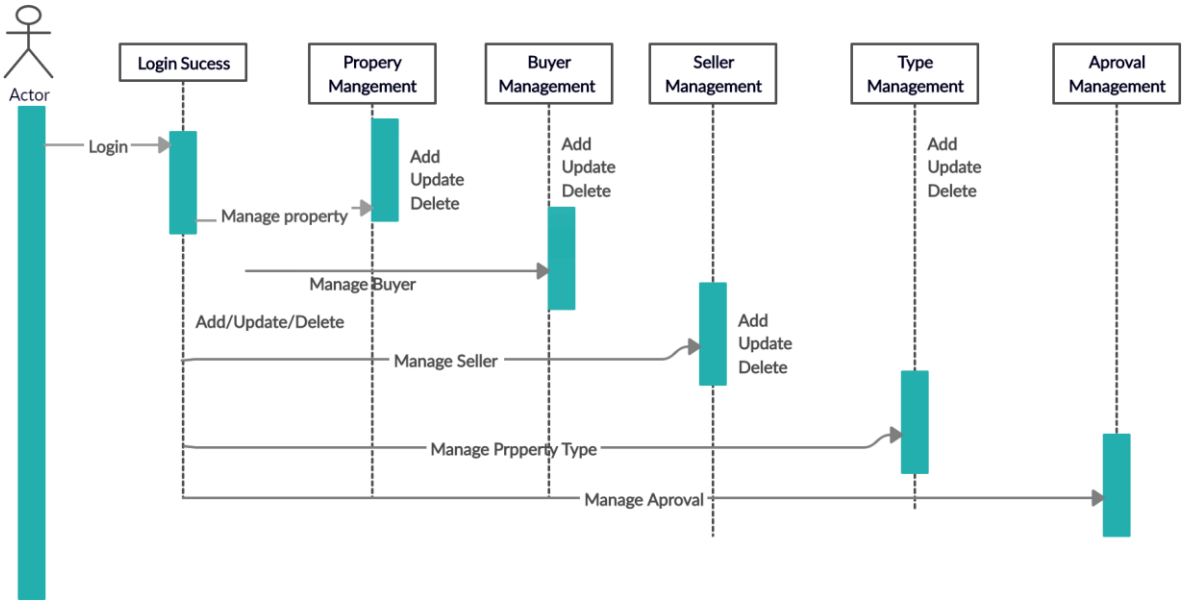
- Javed Ali F16SW57 javedtaj5@gmail.com
- Asra Memon F16SW164 asramemon88@gmail.com

System Workflow Diagram:





Supervised by:

- Engr. Shafiya Qadeer

Destination and Itinerary Recommender Application

Abstract:

We will develop a Destination & Itinerary Recommender Application that will help tourist in planning their trip to the northern areas of Pakistan. The application will recommend its user's list of places to visit (point of interest POI), hotels and transport in accordance to user's interest. For recommending the target user the places to the visit the application will compare the target user's Facebook profile to the other Facebook users and based on the similarity between users the tourists places will be recommended. The application will also recommend itinerary for the user by taking into account the user's POI to visit, duration of visit, dates of visit & other constraints.

Technologies: Java, MySQL, Firebase, Facebook Sdk, Google Map API

Group Members:

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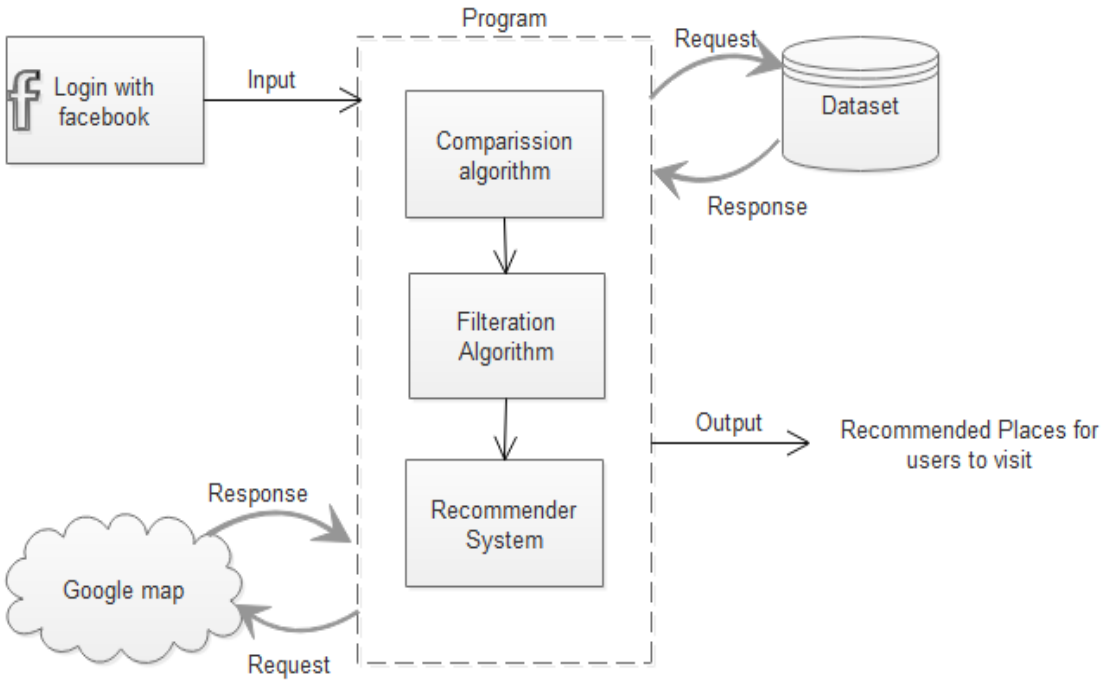
- Muhammad Yaseen Memon F16SW14 memonmuhammadyaseen1@gmail.com
- Murtaza Chang F16SW54 murtazaalichang67@gmail.com

System Workflow Diagram:



Supervised By:

- Engr. Hira Noman

IOT BASED WEB APPLICATION VULNERIBILITY FINDER USING RASPBERRY PI

Abstract:

Many interent of things(IoT) devices provide web based applications which can be accessed across the open internet to control and monitor IoT devices. These web based application enable users to easily monitor sensors, analyze data and control actutators such as light bulbs, alarms, Et cetera. In this project, we will exploit misconfiguration in a simple Python application by using the SQLmap SQL Injection tool. We will discover web application weakness and address them by implementing a Python script that will sanitize application from input. Our main objective is that we can find the problems that an occurred in web applications of IoT devices which will be dangerous, then remove those problems and see how the security is breached and how payloads are used to exploit web applications are explained using the Kali Linux, then after setting up our target system(Raspberry pi) we will be using SQLmap, Berpsuit and other tools to exploit and gain insights on the system.

Technologies: Kali Linux, Python, Raspberry pi

Group Members:

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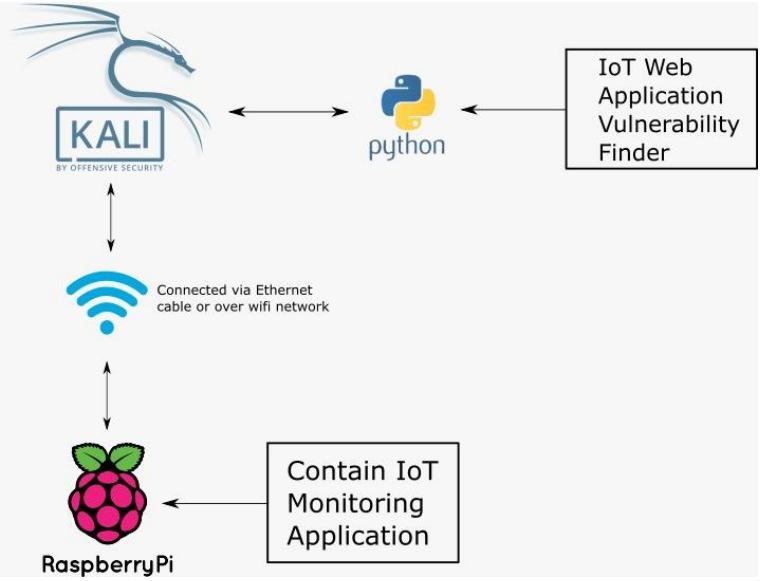
- Waqar Arain F16SW58 adil.cn85@gmail.com
- Sara Iqbal F16SW153 saraarain170@yahoo.com

System Workflow Diagram:



Supervised By:

- Dr.Qasim Ali Arain

Blockchain Based E-Voting System

Abstract:

There are a lot of problems in casting a vote which includes an old culture of doing the whole process manually on papers and consuming a lot of time and effort. Traditional System requires the physical presence that may require standing in long queues still that system is not ensuring security or reliability of user vote because users are unable to verify their votes. Subsequently, electronic voting systems exist in which the timing issue is overcome easily but the system can be breached and votes can be manipulated, the cause being the centralized system. The idea is to change this old manual culture of voting by making the whole process more efficient, secure, and time effective by developing Blockchain based E-Voting System using ethereum and smart contract (solidity language) which can be accessed from onsite or online (VO-BLOK website) through credentials for quick and efficient vote casting within time constraints which ultimately prevent rigging and casting of the vote remains confidential.

Technologies: HTML5, CSS3, Bootstrap4, JavaScript, JQuery, AJAX, PHP, Solidity, Ethereum, MySQL Database.

Group Members:

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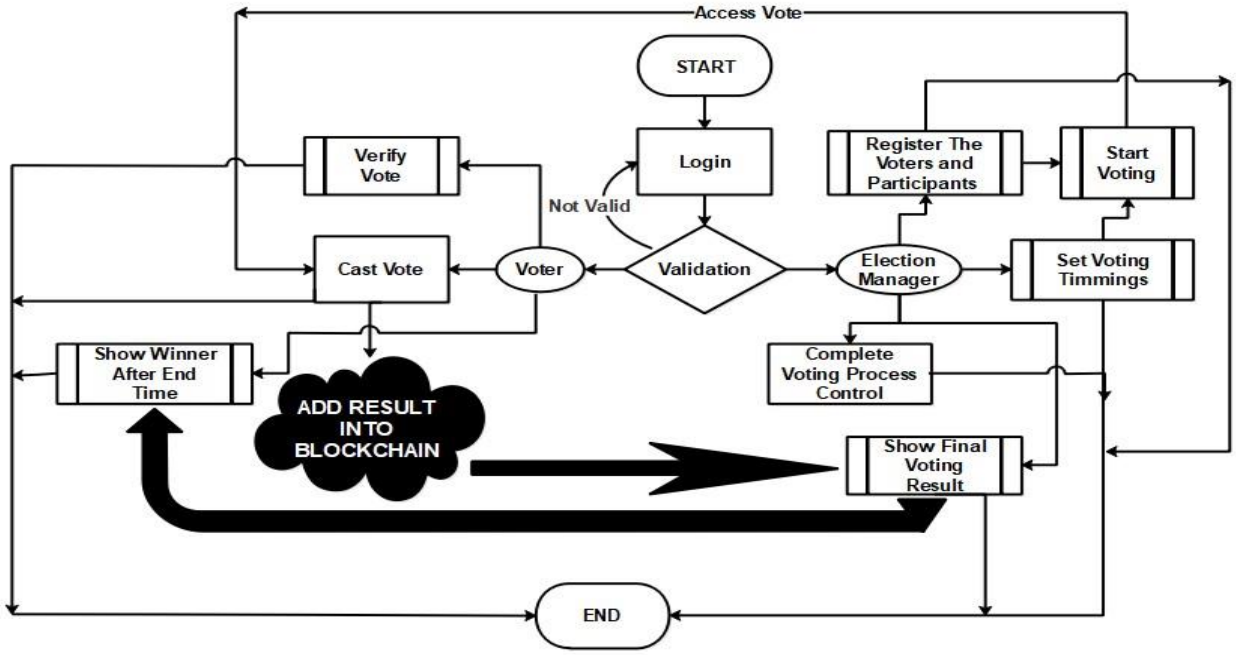
- ❖ Pooja Kumari F16SW17 poojakumari11228@gmail.com
- ❖ Khubaib F16SW187 khubaibkhatri04@gmail.com

System Workflow Diagram:



Supervised By:

- ❖ Dr. Isma Farah Siddiqui

Remote Clinic

Abstract:

In Pakistan, almost 2/3rd of the population lives in rural areas. In those areas, people do not receive quality facilities for health and education. People have to travel thousands of miles to get their basic needs. Every year It is estimated that about 3.2 Million rupees poor villagers spent on transport services only, to visit nearby hospital. Technically it is hard for the developing country to cover each area and move resources and machineries there. Their exists variants of solution out their but there is no any single umbrella that provides support. So, in order to cover some issues regarding consultation a simple but sophisticated solution is provided in this thesis. This solution provides synchronous method of online consultation. Where an android application connects doctor and patient remotely. An all those diseases which can be consulted online this application to it so.

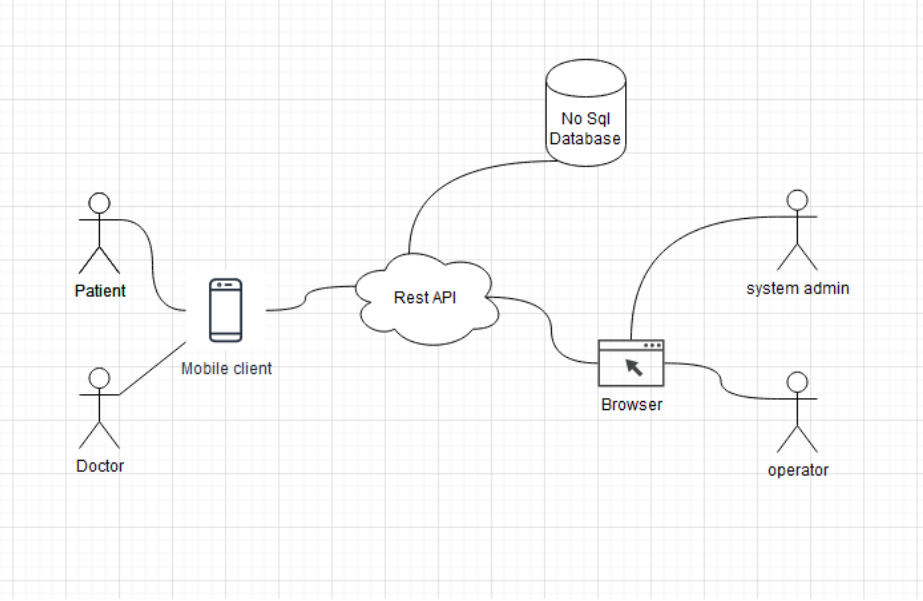
Technologies:

Html5, Css3, JavaScript, Python, JSON, Java, Android SDK, Git/GitHub and Netlify

Group Members:

- Mohammad Bilal F16SW41 bilalwasi27pc@gmail.com
- Neel Kanwal F16SW59 neelu0@protonmail.com
- Rashid Majeed F16SW185 rashidmajeed294@gmail.com

System Workflow Diagram:



Supervised By:

- Engr. Samita Bai

"eCLICKivr.com"

Voice Recognition System For Email (Target Blinds)

Abstract:

There are many reliable ways of communication. Email is one of them which is used in business, academia and industry for the exchange of information. However, many technologies including email is useless to the blind people as the activities performed on the computer are designed for the people who can see. Thus, it becomes necessary to introduce different user interfaces which are blind-friendly for making communication possible for people without sight through email.

This work presents an email system that specifically targets the blind community. It is a web-based application. The objective is to develop a voice-based email system that will help blind people to utilize all the facilities and all the services provided without any prior training. The proposed system will reduce intellectual load taken by blind person to remember and type the keyboard characters. It is designed as a keyboard-free application and will require only mouse click events and voice commands. The application will provide voice commands, the users just have to listen and perform the tasks accordingly. The users can type the email content by speaking. Whatever the user speaks, it will be converted into text. Similarly, the text written on the screen will be converted into voice for the user. The application is completely based on Interactive Voice Response (IVR) technology which makes the system user friendly and efficient to use.

Technologies: HTML, CSS, Javascript, Jquery, PHP and MySql.

Group Members:

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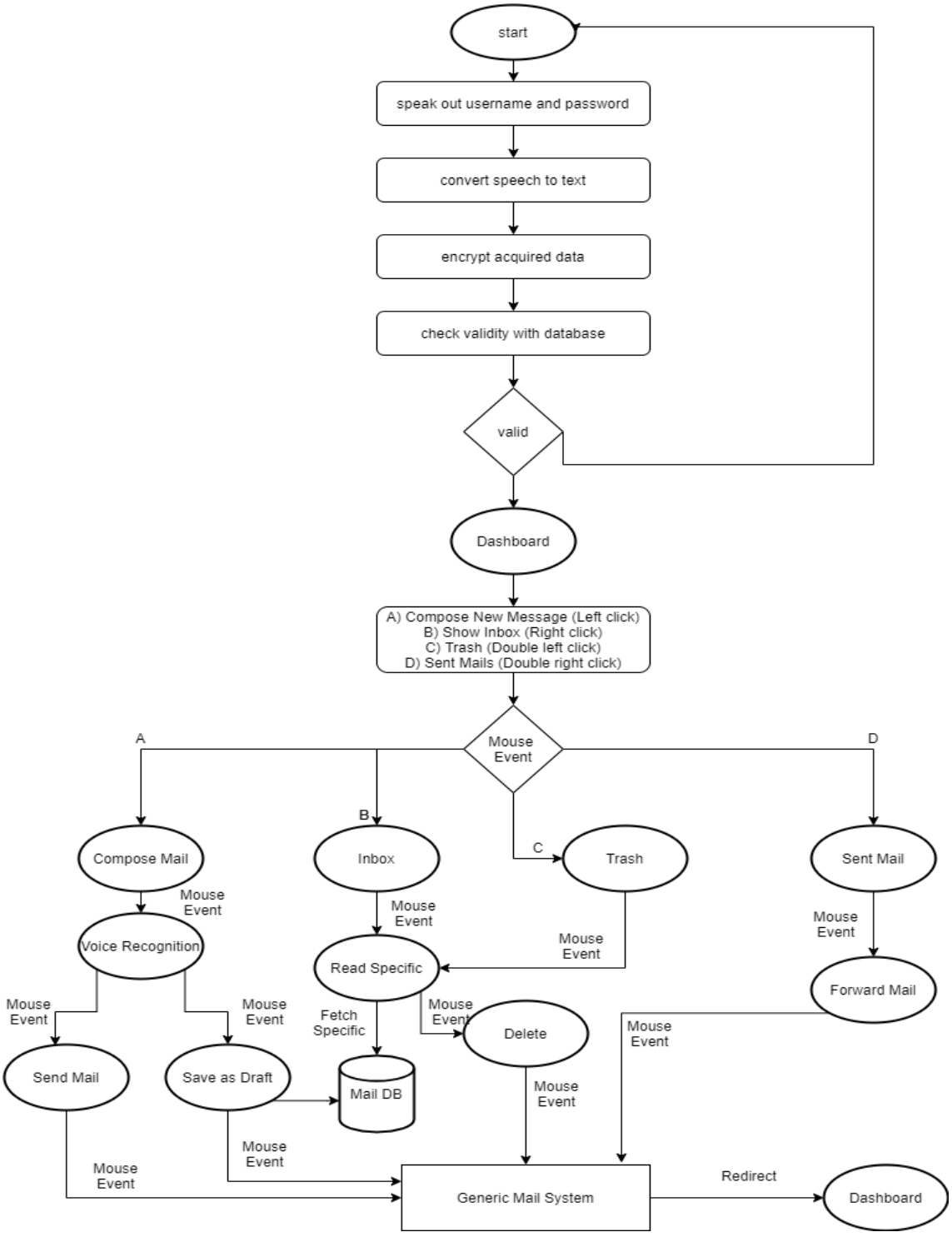
- Nadia Rafique F16SW158 nadia.rafique0@gmail.com
- Usha Kumari F16SW192 ushalanghani@gmail.com

System Workflow Diagram:



Supervised By:

- Engr. Samita Bai

Farmer/Kissan App

Abstract:

The real world wide web have spread across millions of household, so naturally, in everyone's perspective Internet has become by far the best platform to set up the business. Nowadays when everything is online, every trade and business throughout the world have been moved over the internet, so how it is possible the farmers would be left behind? The Farmer/Kissan app would function over the internet to construct the bridge between farmers and market brokers by providing separate dashboards/views to them. The main goal of the proposed app, "Farmer/Kissan App in local languages" is to improve the communication between the farmers and market brokers with assuring the transparency into the system. It will help farmers and suppliers to directly contact each other by deprecating the unnecessary services and commissions of agents. Thus, it would ensure the greater profitability and productivity for the farmers as well as for market brokers. The app will also provide them the latest updates of market to farmers regarding crop prices, demand and supply, etc. The farmers will also get assistance regarding which crop to sow in the coming season for better yield using machine learning techniques. There are already several amount of apps built on the relative idea but neither of them offer as much functionalities and visualizations to the farmers and brokers as this app will provide.

Technologies: HTML, CSS, Bootstrap, JavaScript, PHP, MySQL.

Group Members:

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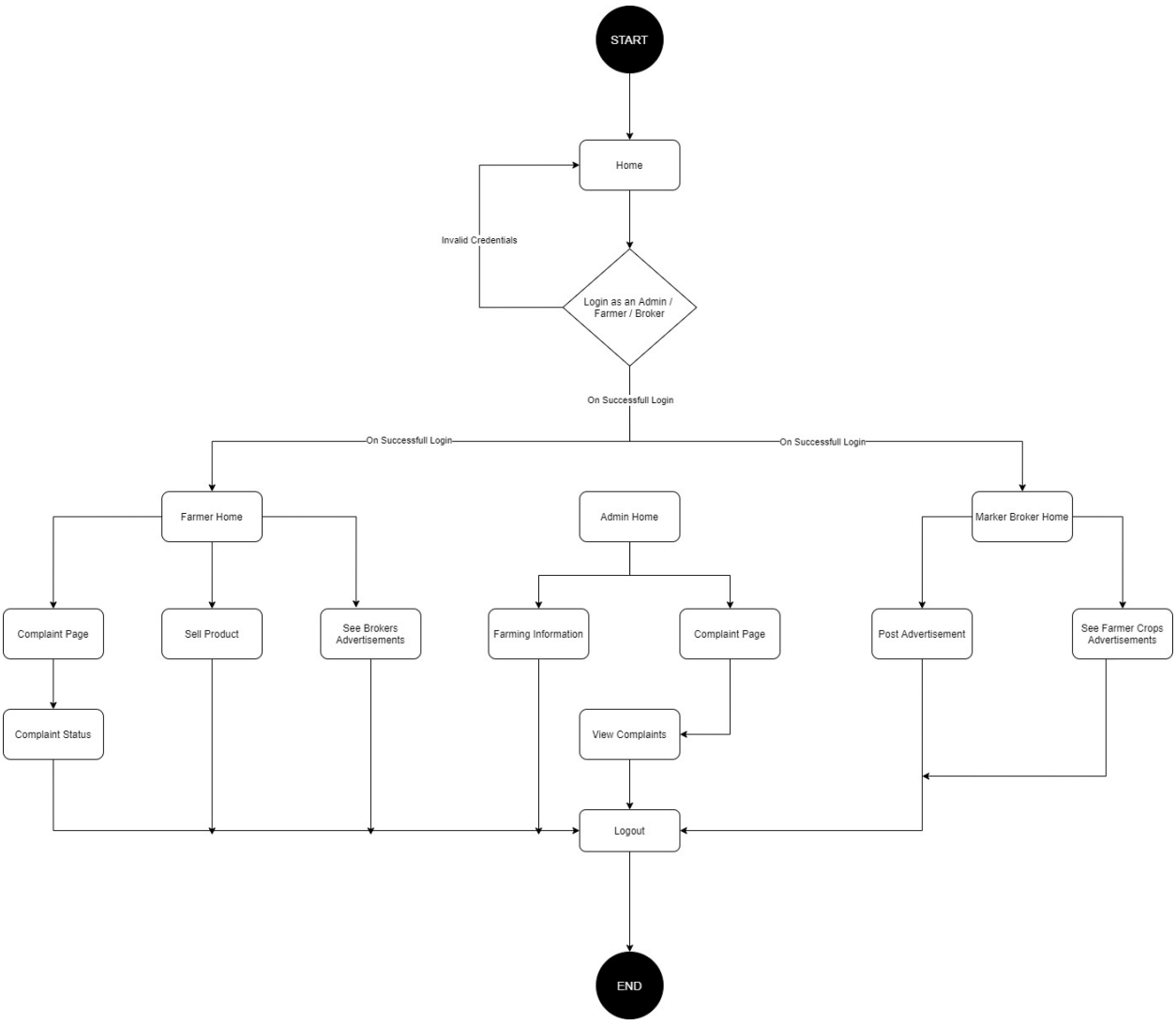
System Workflow Diagram:



Supervised By:

- Dr. Sania Bhatti

FLEET MANAGEMENT SYSTEM

(For MUET Jamshoro)

Abstract:

Fleet Management System (FMS) is a system which helps institutions to manage vehicle fleet efficiently and effectively through smart allocation of resources. This system helps organization such as tracking, routing, fuel maintenance, on-board information and security are to be performed by FMS. As some time traffic problem occurs due to some accidental issue or an other problem and the fuel problem also occurs some time, so to avoid such kind of issue we are going to build this project for MUET Jamshoro .The purpose of our project which is fleet management system for MUET is to facilitate the university to check MUET buses info, fuel maintenance and assign the different route when the traffic problem occurs.

Technologies:

- Html
- CSS
- JavaScript
- Bootstrap
- Php
- Google map and mobile for gps tracking,

Group Members:

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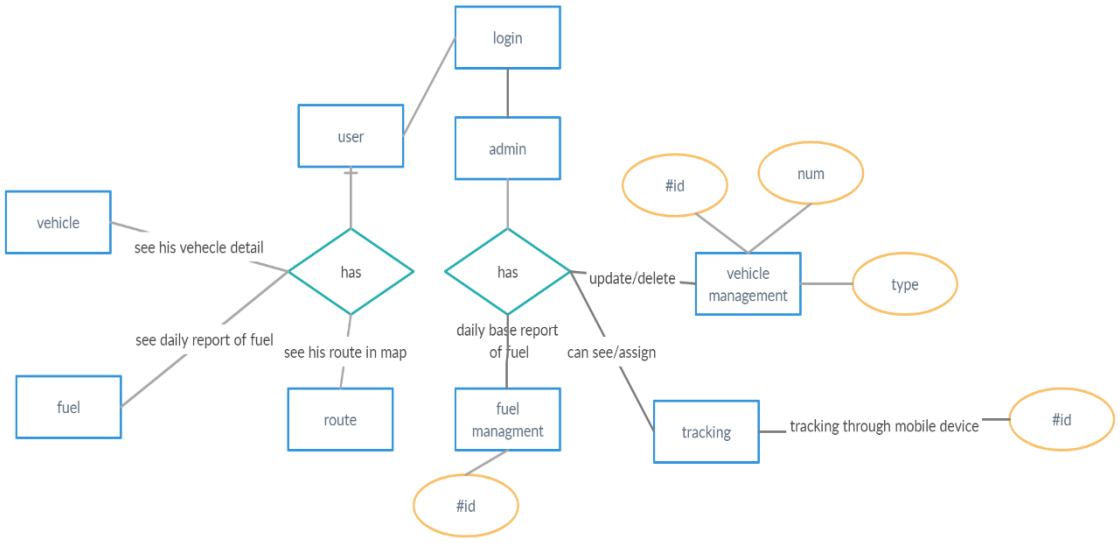
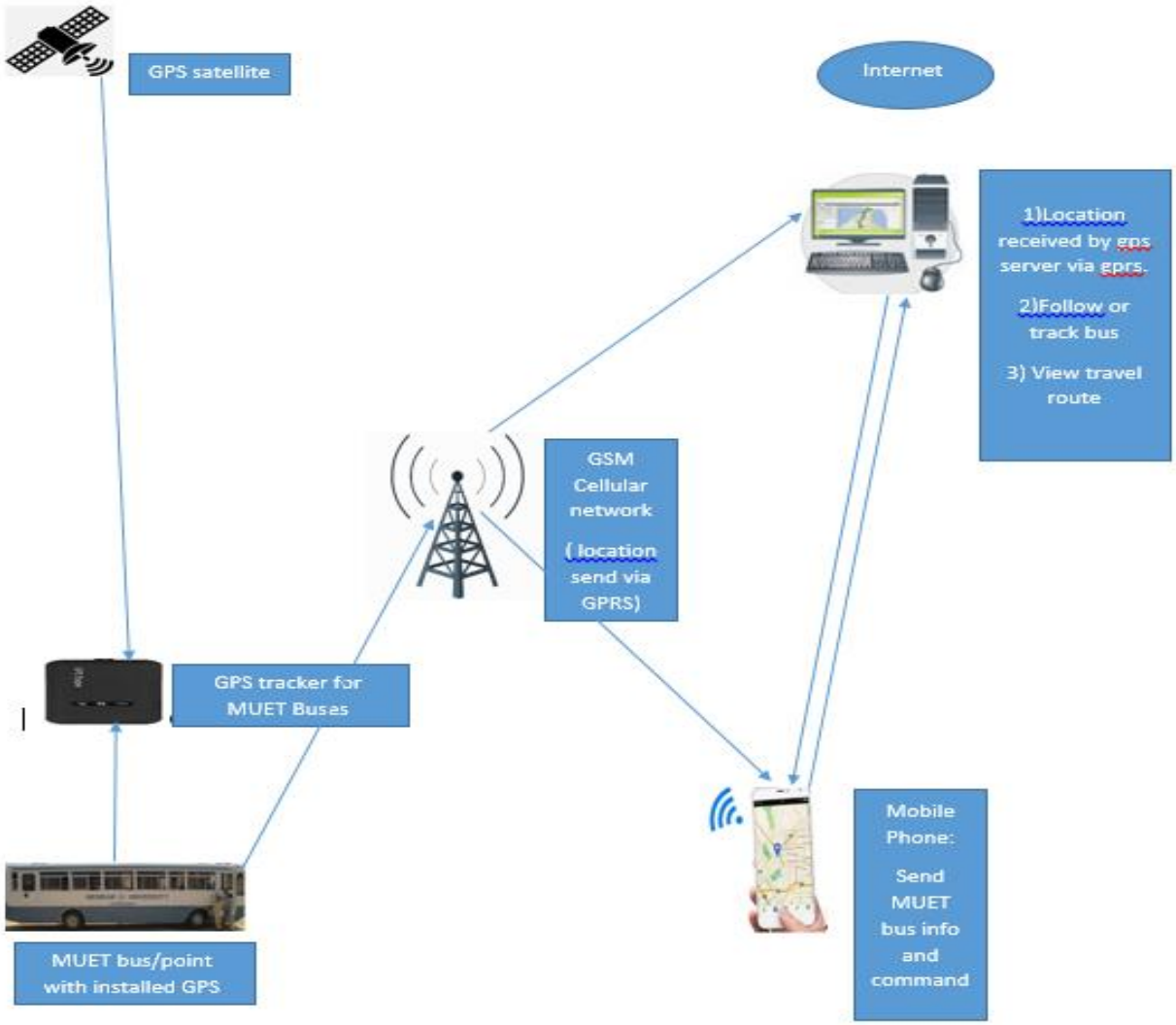
- ❖ Sahar Bloch F16SW196 Saharbaloch16sw196@gmail.com

System Workflow Diagram:





Supervised By:

- Engr. Zubair Sangi

Rent X

Abstract:

RentX is a digitized self-rental service which works on a customer to customer basis through e-commerce, where users can put up consumer goods or products for rent on the platform and those who want to get items on rent without having the need to buy them. It is a service which concedes purely on rental phenomenon. You cannot buy anything permanently but only for the rented period. Every consumer good can be rented on RentX and the company does not have to pay or put anything themselves. It will work totally on C2C basis.

Technologies: HTML/CSS, Bootstrap, JavaScript, PHP, MySQL.

Group Members:

- ❖ Awais Baloch F16SW07 f16sw07@students.muet.edu.pk
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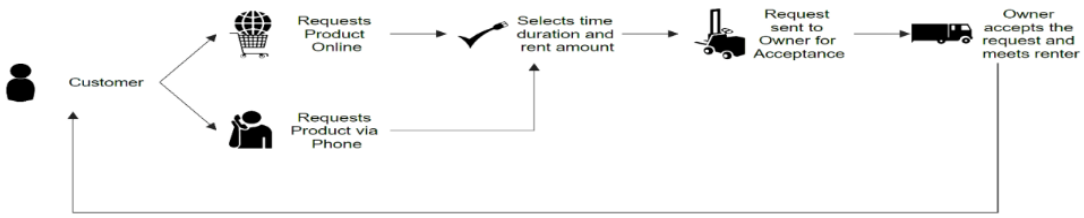
- ❖ Abdul Ahad Shaikh F16SW189 f16sw189@students.muet.edu.pk

System Workflow Diagram:



Supervised By:

- ❖ Engr. Mariam Memon

This Project is funded by RINU-II Cohort 2019-2020

Automatic Gas Meter Reader

Abstract: The current meter reading procedure are manual, where a meter reader visits the area and read the meter of particular Customer using Handheld Device. Handheld device is an android device, where a meter reader can only access Built-In meter reader software which totally Manual. So we come up system is about gas meter reading which is done automatically using an android application which supports optical character recognition technique. The mobile app is for users more specifically for meter readers who can capture meter image, the image data is then be extracted and send to admin. Also, user can check gas units themselves, check and pay bill, make complaints and many more. The web app is for administration who calculate and generate the bill and send it to the customer.

Tools and technologies:

For Android Application

- Optical Character Recognition (Google Mobile Vision API**)**
- Barcode Reader (ZXing API)
- Firebase Database
- Image Cropper API

For Web Application

- HTML5
- CSS3
- JavaScript
- PHP
- Firebase Database

Group Members:

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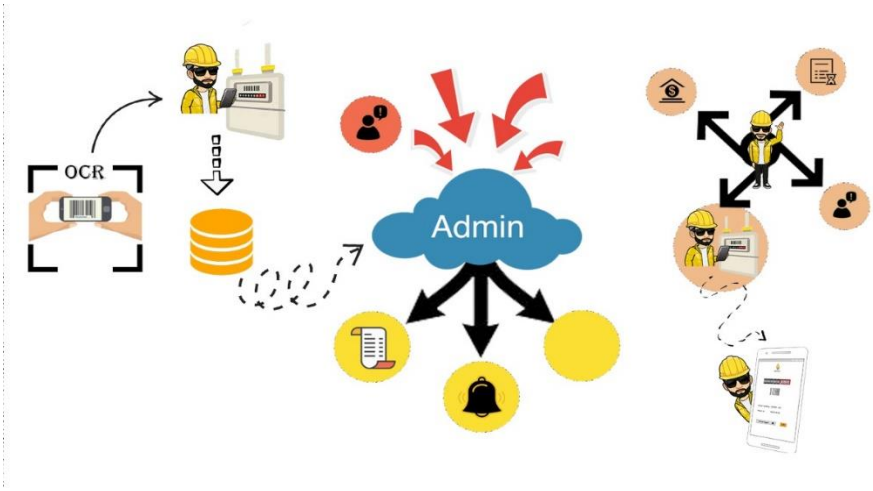
❖ Hiba Haque Sheikh F16SW04 hibahaq05@gmail.com
❖ Mehwish Shaikh F16SW60 mehwishshaikh173@gmail.com

System Workflow Diagram:



The user can only capture the image of the meter and the application then shows the billing of the current real time reading. The meter reader can capture the image, sends to the databse for the server to calculate and generates the bill. The admin retreive the information from the database, calculate and generates the bill, sends it to the user in a pdf file formate and via sms too. The admin can also broadcast news if any and receive complains as well.

The workflow desribes how the meter reader capture picture of the meter, sends it to the server and how the admin capture the details and information of the user and then calculate and generates the bill and sends it to the user.

Supervised by:

- Engr. Memoona Sami

FLEET MANAGEMENT SYSTEM
FOR SSGC OPERATION VEHICLES

Abstract:

This project involves development of Fleet Management Software for SSGC operational vehicles. It aims to provide a solution to fleet management issues like vehicle tracking, vehicle maintenance, driver management, crew assignment, speed management and route planning using the power of GPS and GSM technologies. Furthermore, it will also incorporate a Fuel Management System to measure and manage the consumption of fuel used for the fleet of vehicles. This software will allow SSGC fleet managers to effectively manage their fleet, drivers, crew staff as well as to reduce the overall fuel usage. This software will be compatible with Android for smart phones and with Windows for Desktop.

TECHNOLOGIES:

- Html / Css / Bootstrap
- Javascrpt / Ajax / Json / Jquery
- Php
- Sublime / Visual Studio
- Mysql Database

Group Members:

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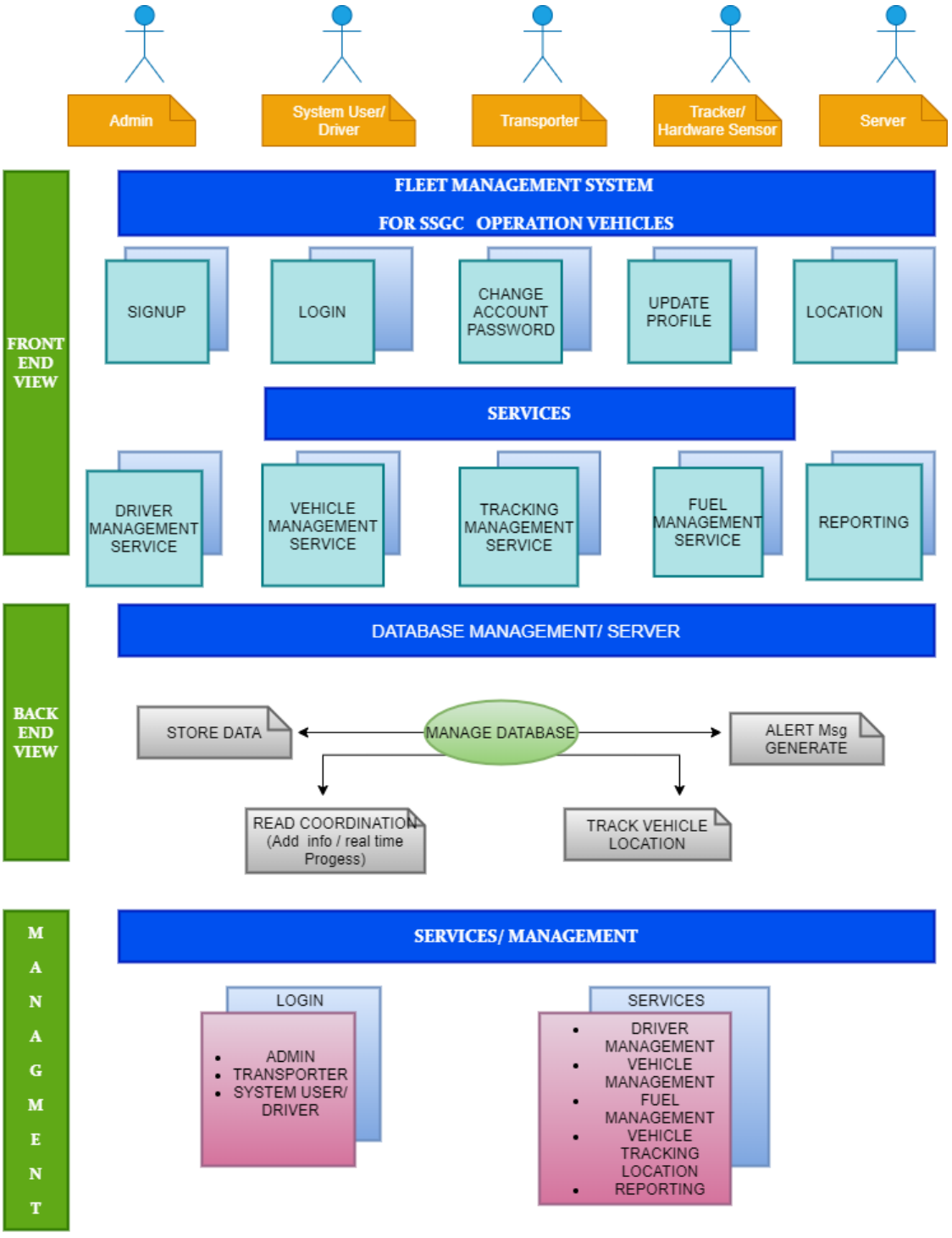
- Asmat Soomro(G.L) F16sw157 asmatesoomro@gmail.com

System Workflow Diagram:



Supervised By:

- Engr. Mariam Memon

iPool

Abstract:

IPool is an online android application a place where many passengers can travel easily. Basically, the app provides traveling facility to the users in low budget. Many passengers can travel simultaneously in one car according to capacity. Multiple users are registered and verified**.** Admin will have all functionality,

For User (Driver)
1.Register or login
2.Place his initial and final destination
3.Put passengers capacity
4. Timing to starting a ride
5. Choose passengers & track their positions

For User (passenger)
1.Register or login.
2. Select current location and destination.
3. Choose available car (if not available check another ride on same day at different timing)
4. Get notification at time when driver will be near to him
5. Can track driver any time from starting his ride.

Technologies: Android, java, Firebase, Google Maps.

Group Members:

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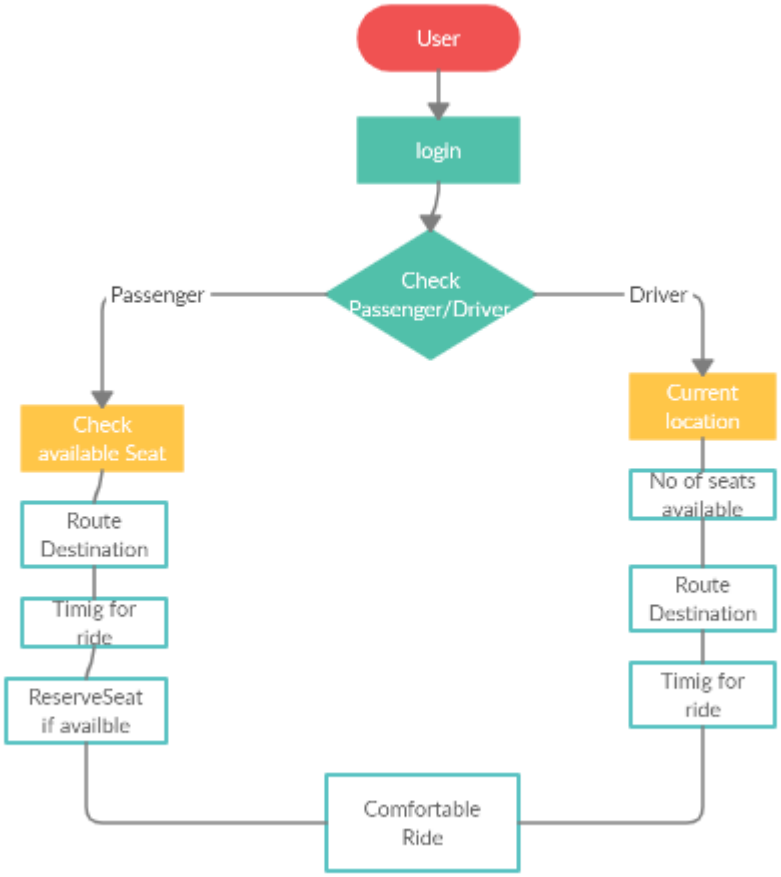
- Abdul Shakoor F16SW12 shakoorsawand@gmail.com
- Rameen Faique F16SW68 rameenhashmi12@gmail.com

System Workflow Diagram:



Supervised By:

- Engr. Zahid Hussain Khaskheli

Peer to Peer Document Verification System (PPDVS)

Abstract:

We have observed that, in order to apply for admission in universities students are required to submit a bunch of documents to the university administration.

It's a quite big responsibility to preserve important documents, one may lose his\her certificates or marksheets. And in order to get them back from the board, we've to pay a specific amount to board and it also requires more effort. Getting documents from board, keeping them safe to submit them to the university administration when required is a time-consuming process.

A student must preserve its time, and resources, moreover, universities face many problems in encountering the fake documents e.g. certificates and marksheets, or they also waste their time to just verify the student's documents by checking manually.

It engages both board staff and university administration under a system in which multiple board's have their own access with multiple functionalities and scenarios and only all the time.

Whenever a student go to the university during admission, his marks or percentage(with some student's detail) will be checked on a system that system contains record of student which will be assembled by board.

By keeping all these problems in mind we've introduces a solution, a website known as "Peer to Peer Document Verification System (PPDVS)". PPDVS is a system that will cover all the drawbacks of that frame-work, In PPDVS, the board will be allowed to upload student's data on the website that is linked with the database.

We want to design a system in which multiple boards have shared database, those universities don't have access to that record which does not belongs to them.

We want to design a system in such a manner in which only university have access to view data in one frame even if one student's record belongs to more than one boards.

Technologies: HTML5, CSS3, JavaScript, PHP, Rejex, MySQL.

Group Members:

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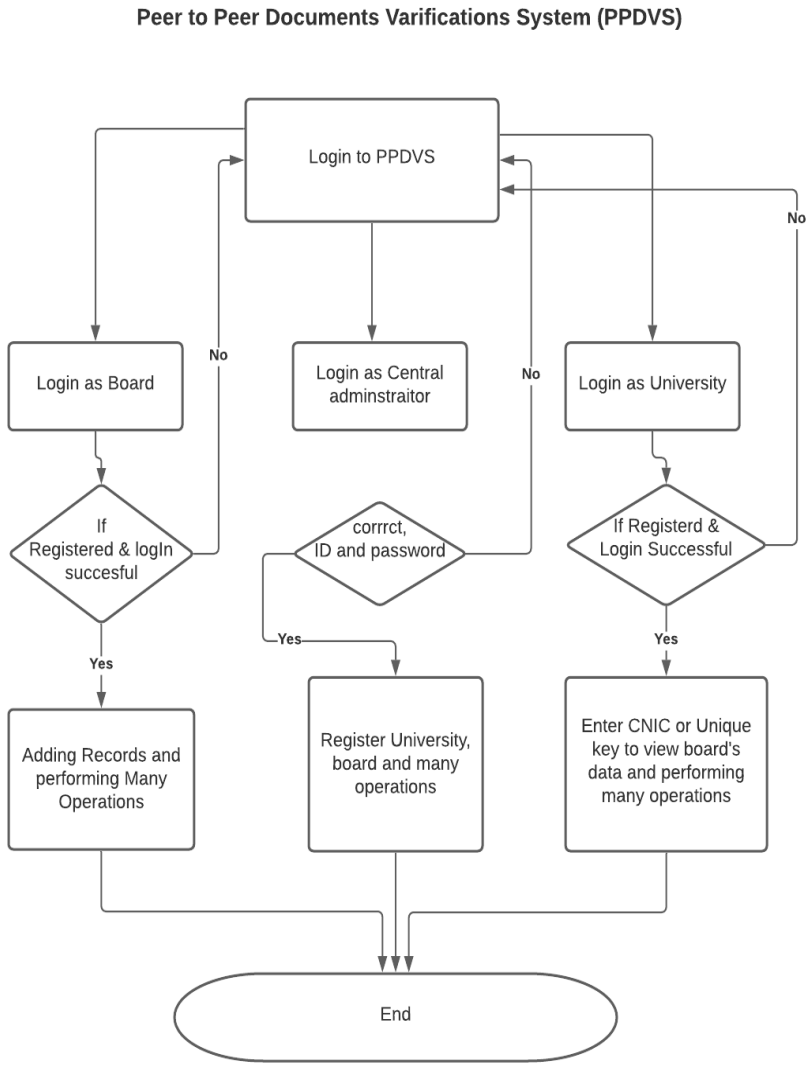
- Muhammad Anwar F16SW50 ghulamanwarmin@gmail.com

System Workflow Diagram:



Flow Chart Shows the working of PPDVS (Web-Application).

Supervised By:

- Engr. Salahuddin Saddar

The use of computers and software applications in recent past has grown at staggering rate. Software engineering discipline is the heart behind the development of computer applications. It forms the basis of operational design and development of virtually all computer systems. The discipline extends to application development, computer networks, Operating systems and software development for embedded systems. Without software engineering, computers would have no functionality. Although hardware is important but absence of software results in un-operational machines. Software is an integral part of today's information and engineering systems.

Software, as a mature engineering discipline, has become essential in our everyday lives. Our software engineering degree program may be considered as Mehran University's contribution towards the tremendous growth of software development industry.

Bachelor of Software Engineering degree program educates students with the theoretical knowledge and empowers them with the practical skills required to start a rewarding career as professional software engineers. Our students learn to develop and maintain high quality software systems from the conceptualization of project idea to design, implementation, deployment and maintenance of software artifacts.

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