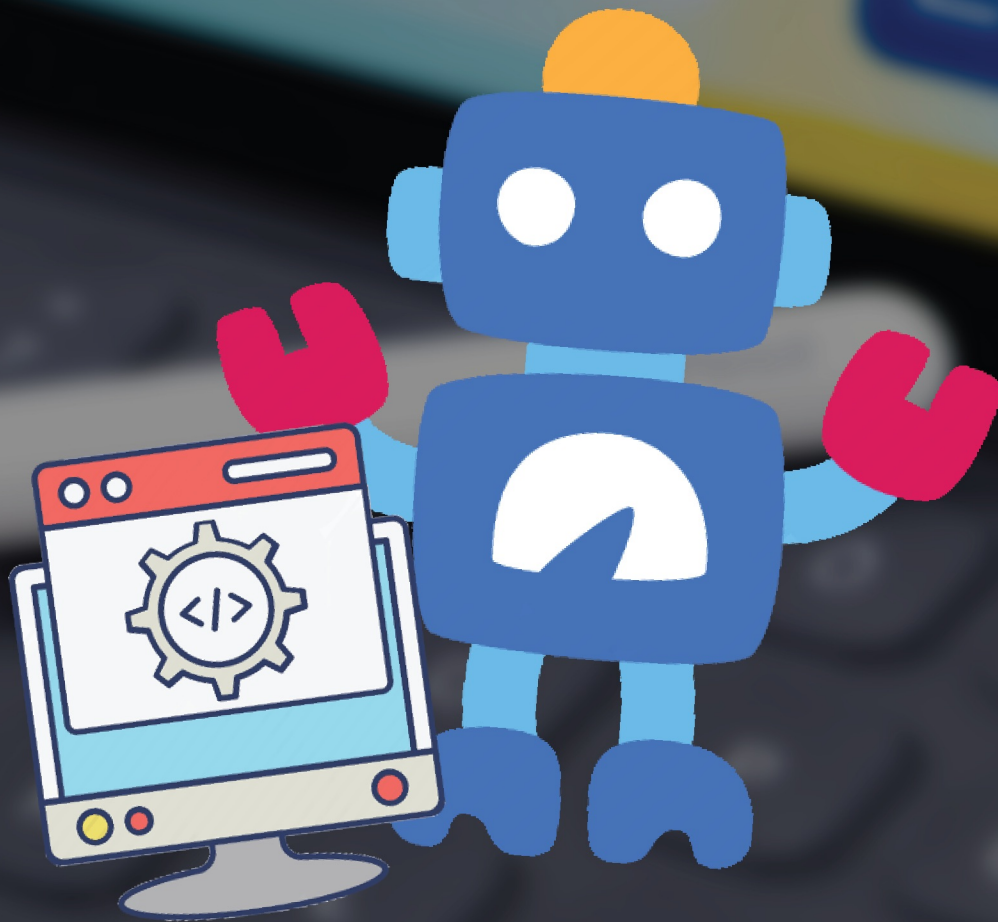


# 2019

# FINAL YEAR PROJECTS



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DESIGNED BY  
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Nida Zafar  
Mussaib Rasheed

DEPARTMENT OF SOFTWARE ENGINEERING  
MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY

## **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.

It gives me immense pleasure and satisfaction to see that the students of 16 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 (16SW) 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.

# WEB AND ANDROID BASED STUDENTS PORTAL REVIEW SYSTEM USING DATA MINING TECHNIQUES

## Abstract:

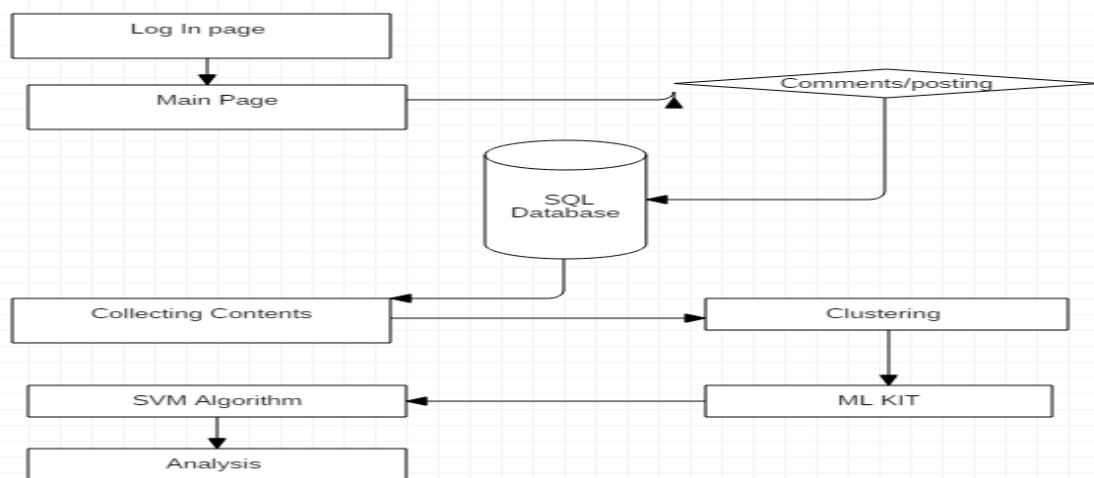
Previously feedback from students about their experience for an event was a rarity and it was taken in manual form which takes much time to predict the success or failure rate of that event in any academic place, since the feedback systems provide information and others experience that helps an individual, group, business unit, company or organization to make better informed decisions using that information. This paper initially focuses to overcome previous problems that were with the feedback systems and accomplished by using web mining (a process of discovering useful information from the content) techniques and algorithms, specifically k nearest neighbor theorem. The process of taking feedback from students and predicting results goes through five phases: data collection, content mining, classification, data learning, and data testing. The resulting we get the success or failure rates of a particular event. This project will help in the improvement of the events held in the future.

**Technologies:** JSP, Servlet, Python, MySQL database, JQuery, Ajax, android, SQLite.

## Group Members:

❖ Sanjay Kumar	16SW161	ksanjay12225@gmail.com
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❖ Fawad Ahmed	16SW01	fawadahmedarain54@gmail.com
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## System Workflow Diagram:



## Supervised By:

❖ Dr. Sania Bhatti

# **VIRTUAL DATA CENTER USING HYPERVISOR**

## **Abstract:**

Hundreds of students over the departmental network, visiting the internet searching for books, handouts and different software (having a very large size) for their academic purpose, affects the overall performance of the internet running inside the department. However, if we create our own data center or a portal within the department, which serves all the academic needs of the students, then they don't need to go out into the internet and look for books, software or whatever they need.

The aim of this project is to create a virtual server to host the SW department using VMware ESXi and vSphere Client as tools. In this project we will deploy server virtualization using VMware ESXi including functions, benefits and risks of server virtualization. One important aspect of a virtualized environment is the installation of VMware tools to enhance performance of the Network.

Data Center itself is a very broad term. It can be utilized in various ways providing a large amount of services to its users. In this project we are focusing on only few of them which are as follows:

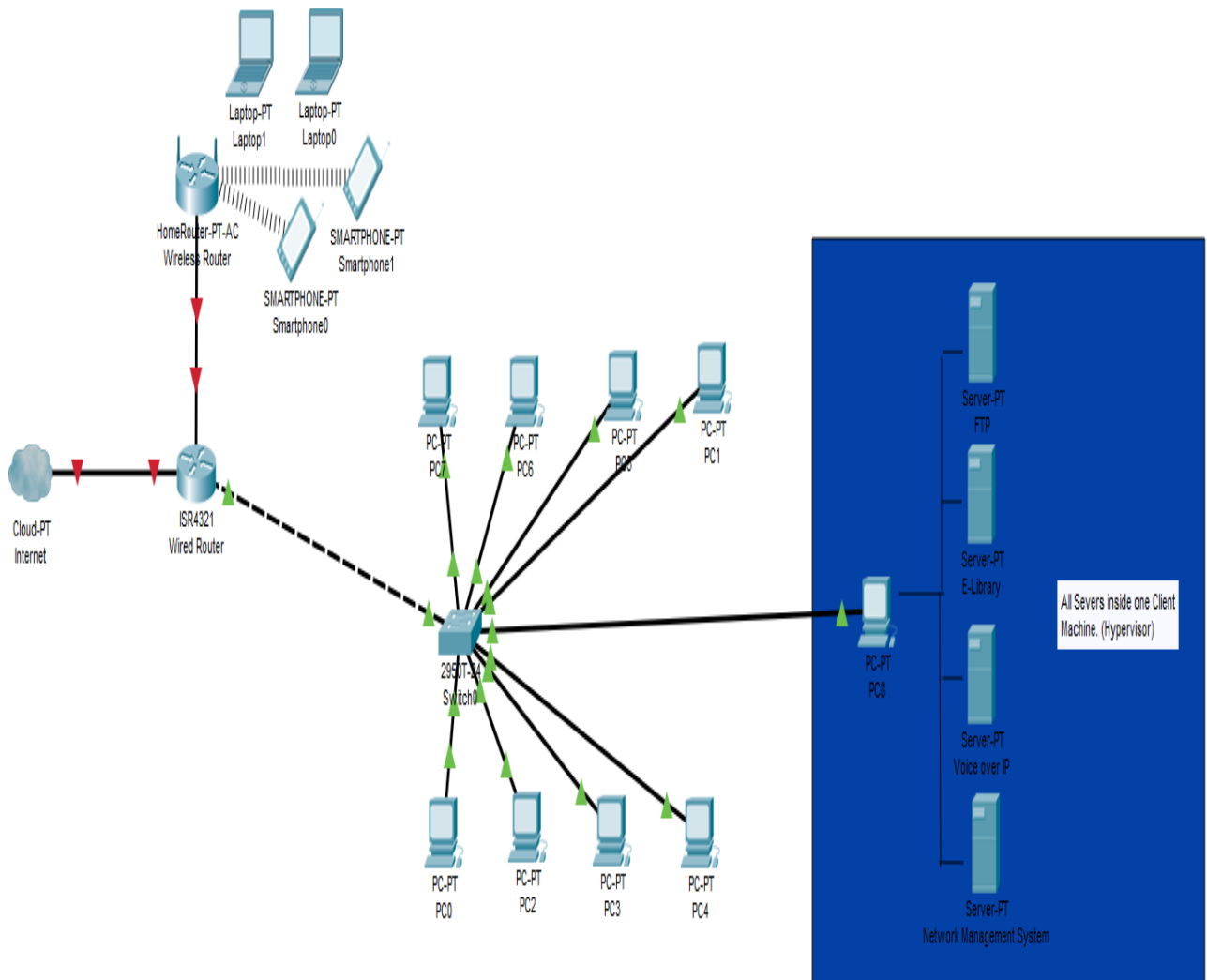
- An FTP server having all the necessary software tools for Software students i.e Android Studio, NetBeans, Eclipse, Oracle etc.
- An E-Library Server (by using Calibre Linux) for the students to get and share all the necessary academic books on just one platform.
- A VoIP which will take the present Wired Intercom System on Smart Phones wirelessly as long as it is inside the Local Area Network (LAN).
- A Network Monitoring Server (Libre NMS) which monitors all the activities and maintain the logs of everything that is connected to the network.

**Technologies:** VMware ESXi, VMware vSphere Client, Ubuntu Desktop 18, Ubuntu Server 18, Free PBX Voice over IP.

## **Group Members:**

❖ Daniyal Ahmed	16SW28	daniyal@zaptox.com
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❖ Shahzaib Gill	16SW160	jawaidshahzaib@gmail.com
❖ Vijay Kumar	16SW38	vk3163174@gmail.com
❖ Taj Muhammad	16SW08	taj03043268284@gmail.com

### System Diagram:



### Supervised By:

❖ Dr. Sania Bhatti

# WASCHE-TECH

## Abstract:

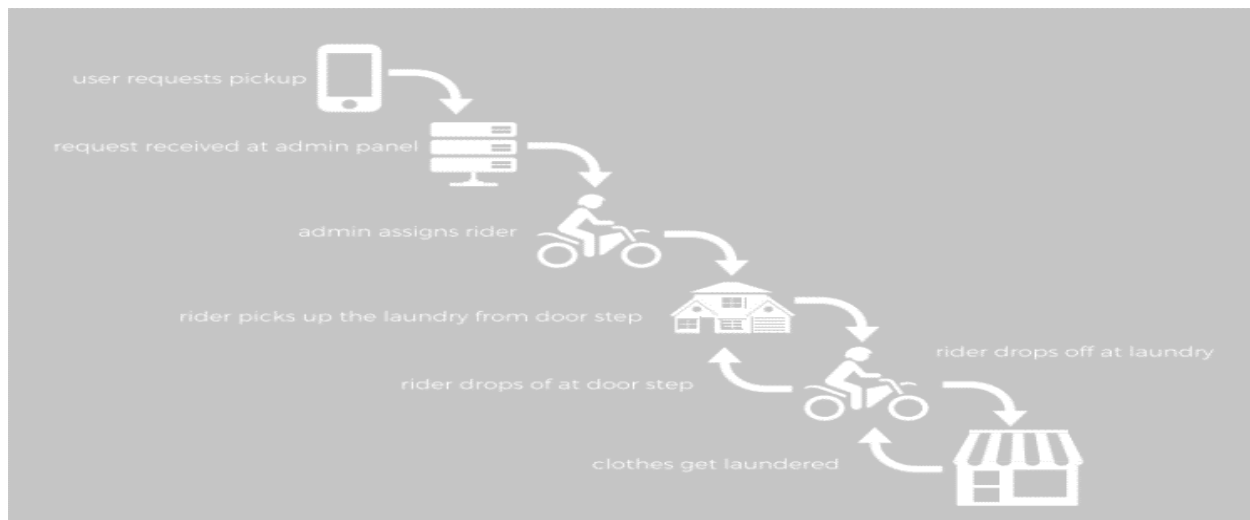
Wasche-Tech is a startup funded by the Government of Sindh with affiliation of Innovation & Entrepreneurship Center MUET. The main goal of Wasche-Tech is to provide an automatic hygienic laundry for the people living in the vicinity of Jamshoro and Hyderabad (later to be expanded in other cities) via a smart phone application, people will place order for their laundry to be collected from the mobile application and Wasche-Tech worker will collect their laundry from the doorstep.

**Technologies:** HTML, CSS, JavaScript, jQuery, PHP, Java, Rest Services (Retrofit API), Firebase functionality for notifications and Material UI.

## Group Members:

❖ Zain Ul Abdin (G.L)	16SW163	zainushaikh60@gmail.com
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❖ Mehak Fatima	16SW79	fatimamehak63@gmail.com
❖ Durga Devi	16SW55	devid3556@gmail.com
❖ Ahmed Faraz	16SW151	bunnyofficie@gmail.com
❖ Abdul Waheed	16SW47	engnrwaheed@gmail.com

## System Workflow Diagram:



## Supervised By:

❖ Dr. Naeem Ahmed Mahoto

*\*This Project is funded by INNOVATION & ENTREPRENEURSHIP CENTER MUET*

# MESSIAH- A HEALTHCARE APPLICATION

## Abstract:

Messiah is a mobile application to solve the common issues faced in Pakistan by providing convenient way to get help medical help. App will have a compatible & user friendly interface tested to make sure it can be used easily by everyone in Pakistan. It will help to resolve the following problems:

1) People tend to ignore minor health issues due to laziness to book appointment or use otc (over the counter) medicines, which can result in their condition worsening even more later on due to their negligence.

2) It can be very time consuming having to stand in line or look for new doctors, the app will provide all information and allow you to book an appointment with the doctor you want, at the same time.

This app will give them a platform to log their diseases and allow doctors to view their history, which users tend to forget most times. It will allow the elderly, sick or women/children who cannot go out of home, to order medicines at the comfort of their own home or order at night time when majority pharmacies are closed. Most Pakistanis are still not educated about common hygiene issues, hence this app will provide daily health tips/reminders to the users with the aim to educated & spread awareness.

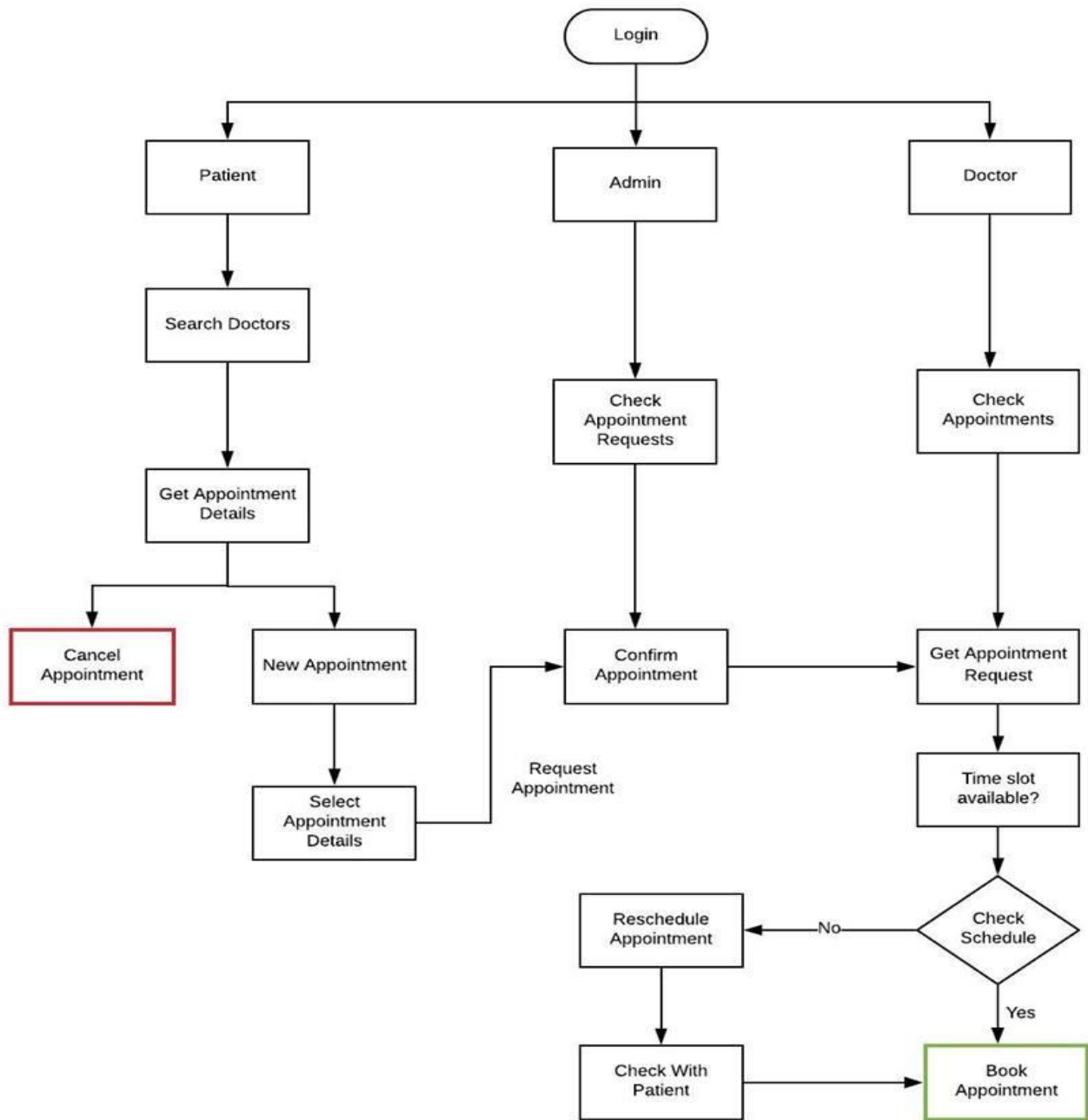
**Technologies:** Android, Firebase database, Swift, PHP, WordPress.

## Group Members:

❖ Daniya Shaikh	16SW65	shaikhirish@gmail.com
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❖ Ghulam Qadir	16SW45	mallahgq225@gmail.com
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❖ Paryal Abro	16SW05	mparyal15@gmail.com



### System Workflow Diagram:



### Supervised By:

❖ Dr. Mohsin Ali Memon

*\*This Project is funded by Innovation & Entrepreneurship Center MUET Jamshoro*

# TRAVEL GUIDE

## Abstract:

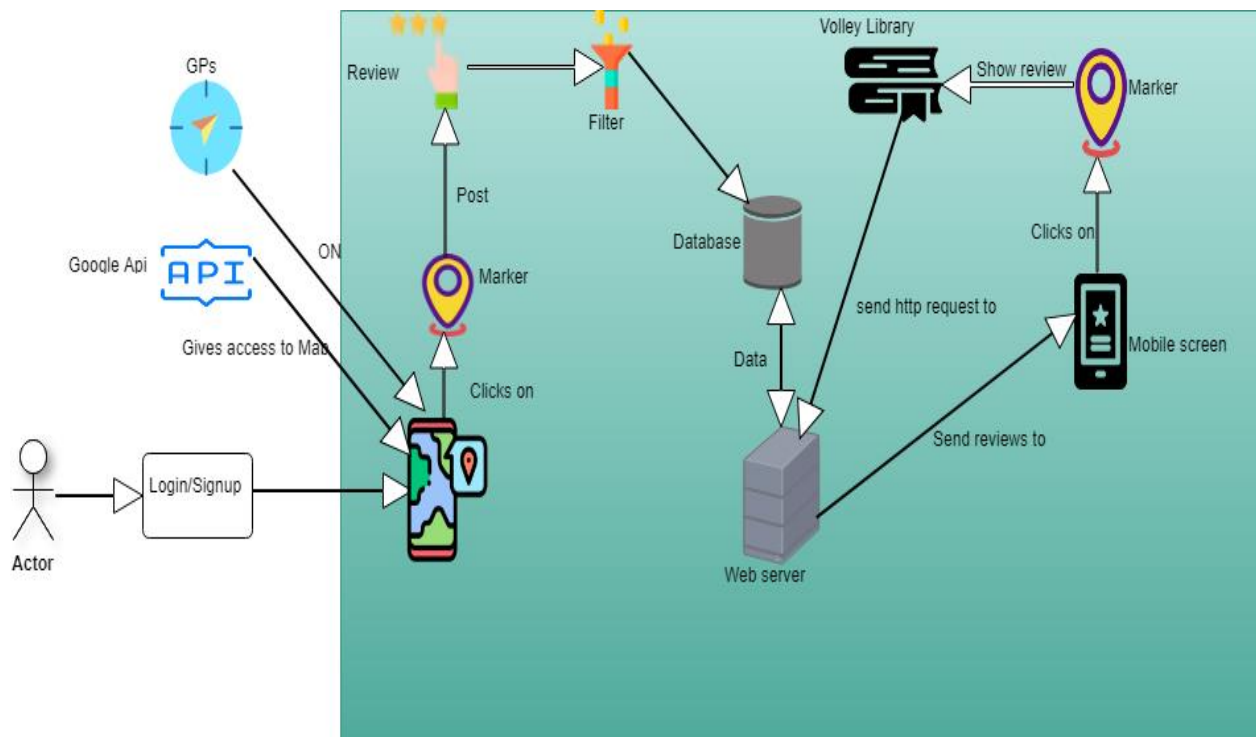
We are making a mobile application that provide some easiness to the people and for saving the time of travelers, this app will provide you a platform for checking the publicly filtered trusted reviews regarding the place you want to visit i.e.(restaurant, hotels, hospitals etc.) In addition, you can give also give your own reviews by getting your current location i.e. (you can post reviews containing ratings of the place, detailed description and images) about the place that you visited. We also provide a filtration mechanism for word filtration in description and image filtration in the reviews. People post the reviews for gifts vouchers, coupons etc. Our main domain is crowd source based application.

**Technologies:** Android, PHP, MySQL, Oracle.

## Group Members:

- |                |         |                          |
|----------------|---------|--------------------------|
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| ❖ Kamran Khan  | 16SW20  | kamran8545@gmail.com     |
| ❖ Fahad Rajput | 16SW54  | fahaddani123@gmail.com   |
| ❖ Rusab Khan   | 16SW172 | rusabkhan7@gmail.com     |
| ❖ Ayman Shahid | 16SW180 | emanshahid4010@gmail.com |

## System Workflow Diagram:



## Supervised By:

- ❖ Dr. Qasim Ali Arain

# MUET WEB ADVISORY PORTAL

## Abstract:

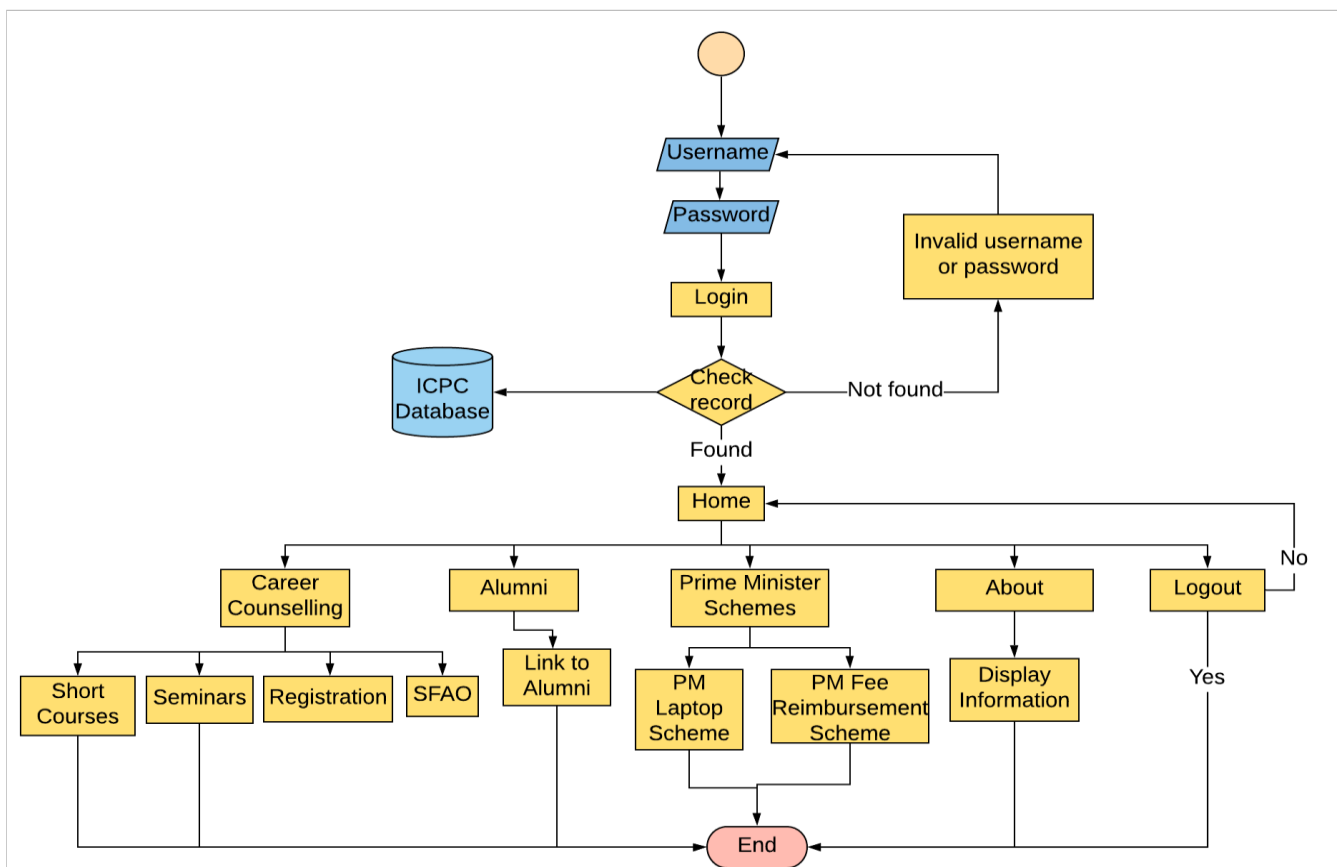
The objective of this project is to develop and deploy official portal on MUET domain for 'Advisor Students' Affairs' directorate. This project is a web-based development project. Currently, there is no portal/website for student advisor concerned directorate. This project will provide all the information and guidance to the students about this directorate. Also, the portal will be providing updates about laptop scheme, career counselling and other related activities on student affairs related to MUET students.

**Technologies:** PHP, Bootstrap, MySQL database.

## Group Members:

- ❖ Zohaib Hassan      16SW34      iamhacen34@gmail.com
- ❖ Zakir Hussain      16SW52      zakirkhoso82@gmail.com
- ❖ Aqsa Baloch      16SW62      16sw62@gmail.com
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## System Workflow Diagram:



## Supervised By:

- ❖ Dr. Isma Farah Siddiqui

# MUET ONLINE ALUMNI WEB PORTAL

## Abstract:

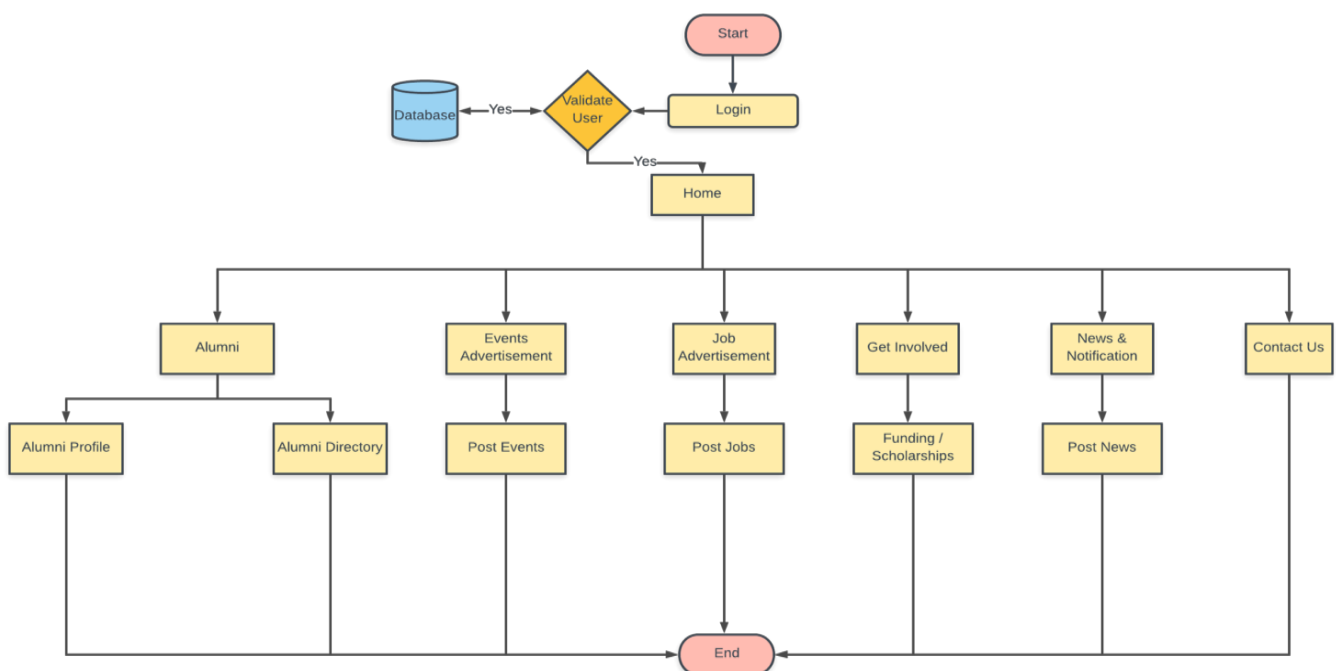
The objective of this project is to build a web best application for the graduates of MUET for interaction between the other alumni and to the university as well. The system that will be able to manage all the registered alumni records of the university and provide easy access to them. The system will maintain the alumni profiles so that any student can visit and see their professional and academic summary. Alumni can communicate to other alumni regarding job opportunities and they can share their professional activities and share their experiences. The alumni can post any event occurring in their respective organizations and companies in which they are currently working. The Alumni can post any news regarding their professional activities. The System also possess get Involved facility using that the alumni can support the MUET by providing any kind of support such scholarships, internships and any other financial support.

**Technologies:** PHP, Bootstrap, MySQL database.

## Group Members:

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- ❖ Munwar Kumar    16SW40      mkpunhauani@gmail.com
- ❖ Sagar Baloch     16SW12      sagarbaloch2016@gmail.com
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- ❖ Sumbul Abbassi   16SW168     sumbulabbasi1234@gmail.com
- ❖ Ikhlauque Ahmed  16SW86      aks.sawand@gmail.com

## System Workflow Diagram:



## Supervised By:

- ❖ Dr. Isma Farrah Siddiqui

# INDOOR OBJECT DETECTION AND CLASSIFICATION SYSTEM TO ASSIST BLIND USING MACHINE LEARNING

## Abstract:

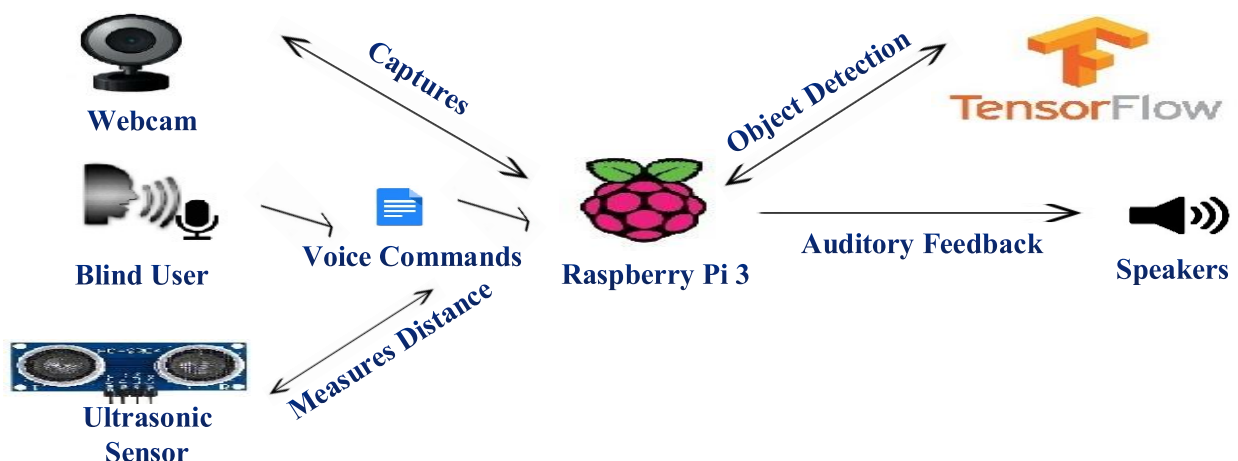
The blind and visually impaired have great difficulty in identifying visual information and they face many challenges in searching, walking, recognizing objects even at a well-known place. This paper presents an effective and wearable visual aid for the blind and visually handicapped to safely navigate by detecting objects and avoiding obstacles along their path in an indoor environment. This project is based on Tensor Flow, an innovative deep learning framework from Google used to detect multiple objects in real time video streams. The proposed system uses a camera, Raspberry Pi 3 processor, a microphone for voice recognition, a customized trained model in Tensor Flow to perform real time object detection, an ultrasonic sensor to find proximity of objects from the blind and provides an auditory feedback through headphones. The system can process voice commands to find desired object and shut down system when not required by the user. The purpose of this study is to improve the independence and quality of life for blind people in an indoor environment.

**Technologies:** Artificial Intelligence (Machine Learning), Advance speech recognition, Object detection, and Machine-to-Human interaction, and Python.

## Group Members:

- ❖ Jawaria Dhakhan      16SW04      jawariadhakhan@gmail.com
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- ❖ Adil Aijaz            16SW30      adilaijaz1997@gmail.com
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## System Workflow Diagram:



## Supervised By:

- ❖ Engr. Salahuddin Saddar

# ANDROID BASED CARETAKER APPLICATION FOR THE ELDERLY PATIENTS WITH MILD COGNITIVE IMPAIRMENT

## Abstract:

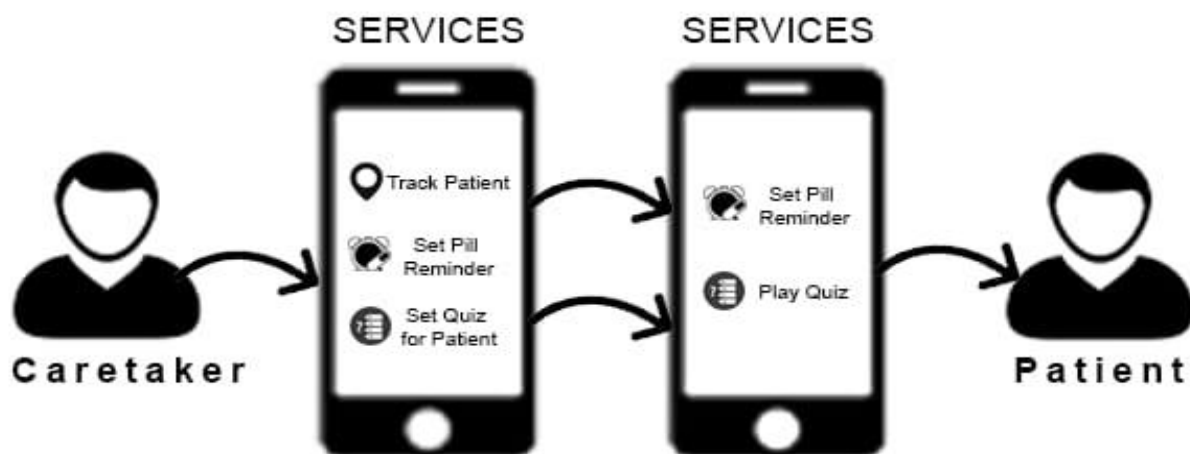
This Project is mainly concerned with people affected by the disease called Dementia' Generally known as Mild Cognitive Impairment(MCI). Mild Cognitive Impairment is mostly found in elders and aged ones. It causes temporary memory loss which results in inability to perform daily routine tasks by the person affected and causes him/her to spatial disorientation from a particular place. Furthermore, to help the MCI patients android and web based application systems have been implemented in this project that provides day to day assistance, dosage guidelines and pills reminders in order to assist patient in dosage taking and monitoring and surveillance by caregivers in case of patient's spatial disorientation from a particular place.

**Technologies:** Java, Rest Services(Retrofit API), Firebase Functionality, Material UI, LBS, GPS, HTML, CSS, JavaScript, JQuery, PHP, Bootstrap, MySQL and Active Android databases.

## Group Members:

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❖ Anoshiya Shaikh	16SW39	anoshiyaashrafshaikh@gmail.com
❖ Urooj Samoo	16SW85	samoourooj2016@gmail.com

## System Workflow Diagram:



## SUPERVISED BY:

- ❖ Miss Amirita Dewani

# **AUTOMATION OF DEPARTMENTAL TIME TABLE AND CAREER COUNSELLING**

## **Abstract:**

The academic environment has gone so multiplexed that a mechanized/automated system might be required to computerize certain parts of an academic system. One such zone of difficulty is timetable scheduling; those saddled with the duty of time table creation are constantly looked with difficulties of making a successful and effective framework that will convey its motivation or purpose. Automation has been a method for improving and enhancing Manual activities. The general task of solving time table scheduling issues is iterative and tedious. In real world application, the participants of the time table planning have clashing partiality which makes the search for an ideal scheduling an issue. Planning timetable is a standout among the most unpredictable and error prone application. There are as yet significant issues like generation of high cost of time while planning and scheduling. These issues are repeating as often as possible. In this manner there is great requirement for an application distributing the course equally and without impacts.

So as to tackle the prerequisites, generally conflicting (for example day, time). The requirements are identified with accessibility, timetabling and inclinations of every one of the teacher, to classroom accessibility and educational modules. So as to take care of this issue for the specific instance of college framework, timetable scheduling needs to embrace the PC based methodology. Specifically in the particular case of timetable scheduling, the automated system could locate an ideal or a sub-optimal solution.

**Technologies:** HTML5, CSS3, Bootstrap4, JavaScript, AJAX, JQuery, Spring Boot, JSP, JPA Hibernate, MYSQL, Apache Tomcat.

## **Group Members:**

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❖ Masood Junejo	16SW51	mjunejo40@yahoo.com
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❖ Amsa Aijaz	16SW171	amsaaijaz30@outlook.com
❖ Hira Ansari	16SW07	hiraansari2014@gmail.com

### System Workflow Diagram:

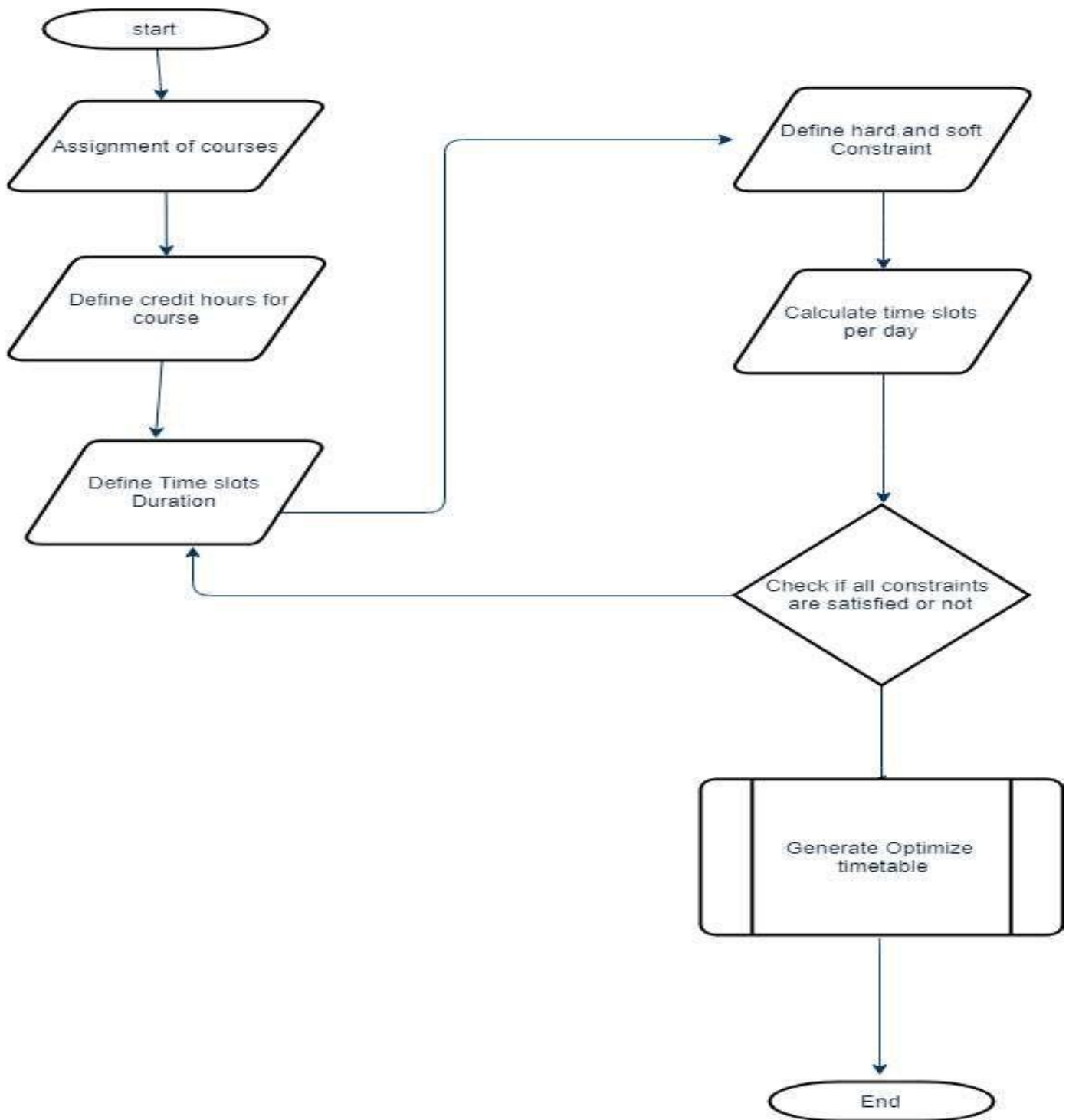


Figure . Departmental time table scheduling workflow diagram.

### Supervised By:

❖ Engr. Zahid



# SOFTWARE POWER CONSUMPTION AND OPTIMIZER TOOL

## Abstract:

The power consumption of the hardware is highly influenced by the software running on it. In order to improve the energy consumption of the hardware it is imperative to write green, power efficient and sustainable software. Software's power consumption can be optimized by improving its source code. This projects aims at developing a tool that will able to capture the power consumption of the source code in terms of CPU cycles, Memory and Disk used. The tool will also target the optimization of the source code by providing various options for its improvement.

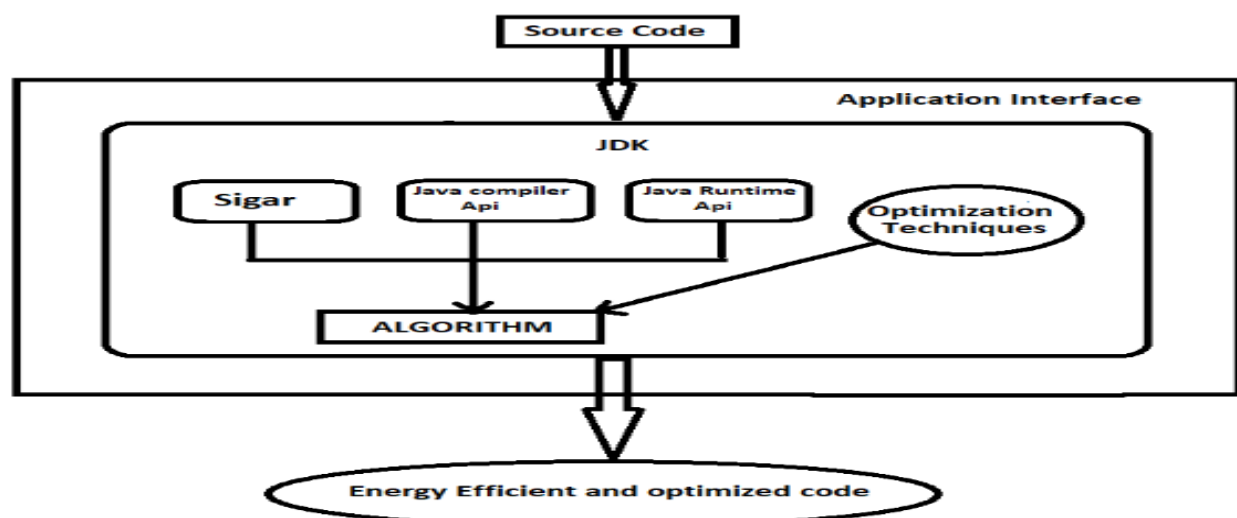
Software power consumption and optimizer tool (SPCOT) will enable developers in improving their source code for optimizing its energy consumption. The tool will guide programmers in identification of various parts of source code consuming high power and will help them in improving the code by providing optimization options.

**Technologies:** Java SE, JSP, Servlets, Ajax, Html, CSS, JQuery, JavaScript.

## Group Members:

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- ❖ Awais Qureshi 16SW173 qureshiawais79@gmail.com
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- ❖ Abdul Qadir 16SW29 abdulqadir19974@gmail.com
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## System Workflow Diagram:



## Supervised By:

- ❖ Engr. Hira Noman

# INTERACTIVE PROJECTOR

## Abstract:

This project presents a cost-effective way to transform an image display into an interactive touch projection on a flat surface by using computer vision techniques. An interactive display provides output similar to that of smartphones and tablets, but it uses a unique IR pointer for its input and a projector that casts a projection onto a surface. We applied techniques for coordinate mapping, filtering camera coordinates, detecting screen edges and recognizing gestures for mouse clicking operations. This project introduces a method to control projected display through depth sensor camera and specific hand-gestures like lasso gesture which is a built-in gesture class present in standard SDK, further the projects also deals with the potential of infrared camera where the light emitted by a stylus is used for cursor manipulation and an algorithm for image processing to identify the position pointed by the user.

**Technologies:** C# , XAML.

## Group Members:

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❖ Aaiza Khan	16SW175	aaizak@hotmail.com
❖ Quratulain Mehmood	16SW169	quratullain97@gmail.com

## System Workflow Diagram:

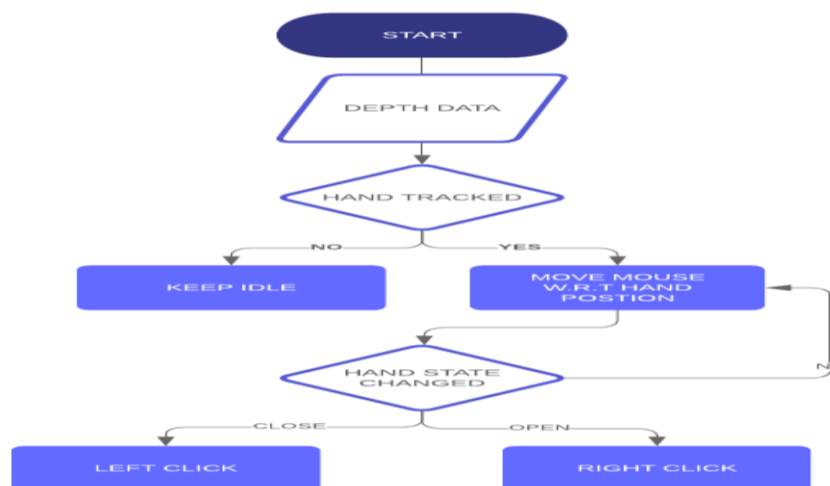


Figure 1 : Workflow diagram of interactive projector

## Supervised By:

❖ Engr. Shafiya Qadeer.

*\*This Project is funded by RINU (IEC MUET)*

# FINAL YEAR PROJECTS AND THESIS MANAGEMENT SYSTEM FOR MUET

## Abstract:

FYP and Thesis Management System is an open repository portal designed for the students of the Mehran University of Engineering and Technology (MUET) for their final year dissertation submission. This portal allows students of Mehran University to publish their research work and thesis.

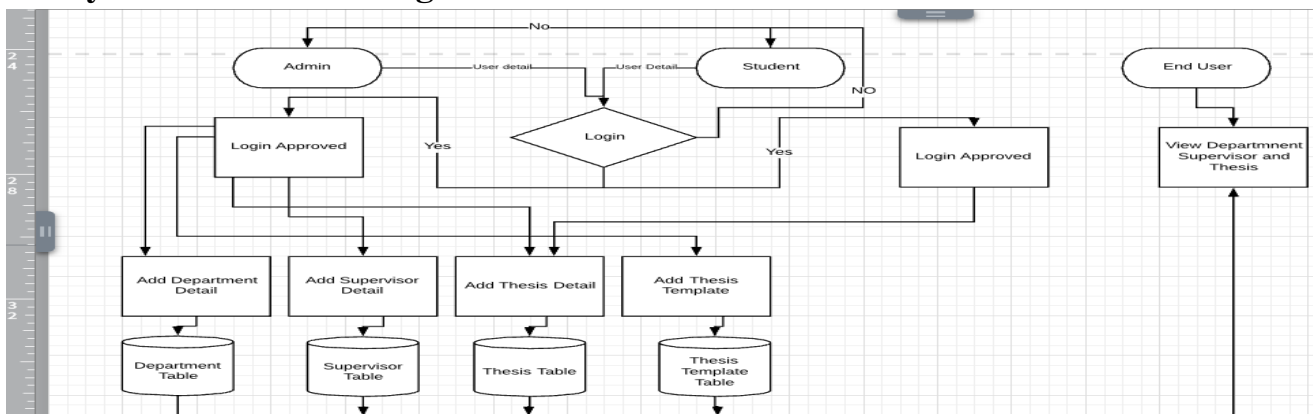
The aim of this portal is to exterminate the concept of submitting the thesis in handy manuscripts (hard copy) and to provide an electronic means of submission. The portal maintains an incredible and gigantic record of all previous batches theses with the option of viewing and downloading. The site also contains dissertation templates for the students to draft their research work. Further the site also frames the profiles of supervisors from every department along with their research interests and experiences. A very efficient searching mechanism is provided for the searching of thesis according to the batch, topic or keyword. The final year students are also provided with submission guides for their thesis submission along with the registration process. The registered students can submit their thesis proposal as well as final thesis along with the Plagiarism report in specified time. The site also contains the notification board that keeps on notifying the registered students about the thesis activities and related events via message and emails.

**Technologies:** HTML, CSS, JavaScript, PHP, Ajax, JQuery, MySQLI.

## Group Members:

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❖ Muhammad Mustafa	16SW56	mustafathahim56@gmail.com
❖ Kashmala Khan	16SW44	kashmalakhan544@yahoo.com
❖ Sidra Khanzada	16SW36	khanzasidra@gmail.com
❖ Abdul Rahman	16SW88	abdulrahmansw88@gmail.com

## System Workflow Diagram:



## Supervised By:

- ❖ Engr. Memoona Sami

# **A CALENDAR NETWORK & EVENT MANAGEMENT FOR MUET JAMSHORO**

## **Abstract:**

The proposed application will be a web calendar and a marketing tool and its main purpose will be to publicize events ; either within a community (with in university /department). Calendars make it easy as possible for user to find information on events of interest to them.

Currently it is very difficult for users like:

- Visitors
- Students
- Faculty
- Staff

to search events, to find out event related information, and to see which events are they interested in.

Users must go a wide range of sources like posts , attention standards , arranging office visit. It is hard to perspective on all college grounds occasions on a given day and as of now there is no robotized approach to do it.

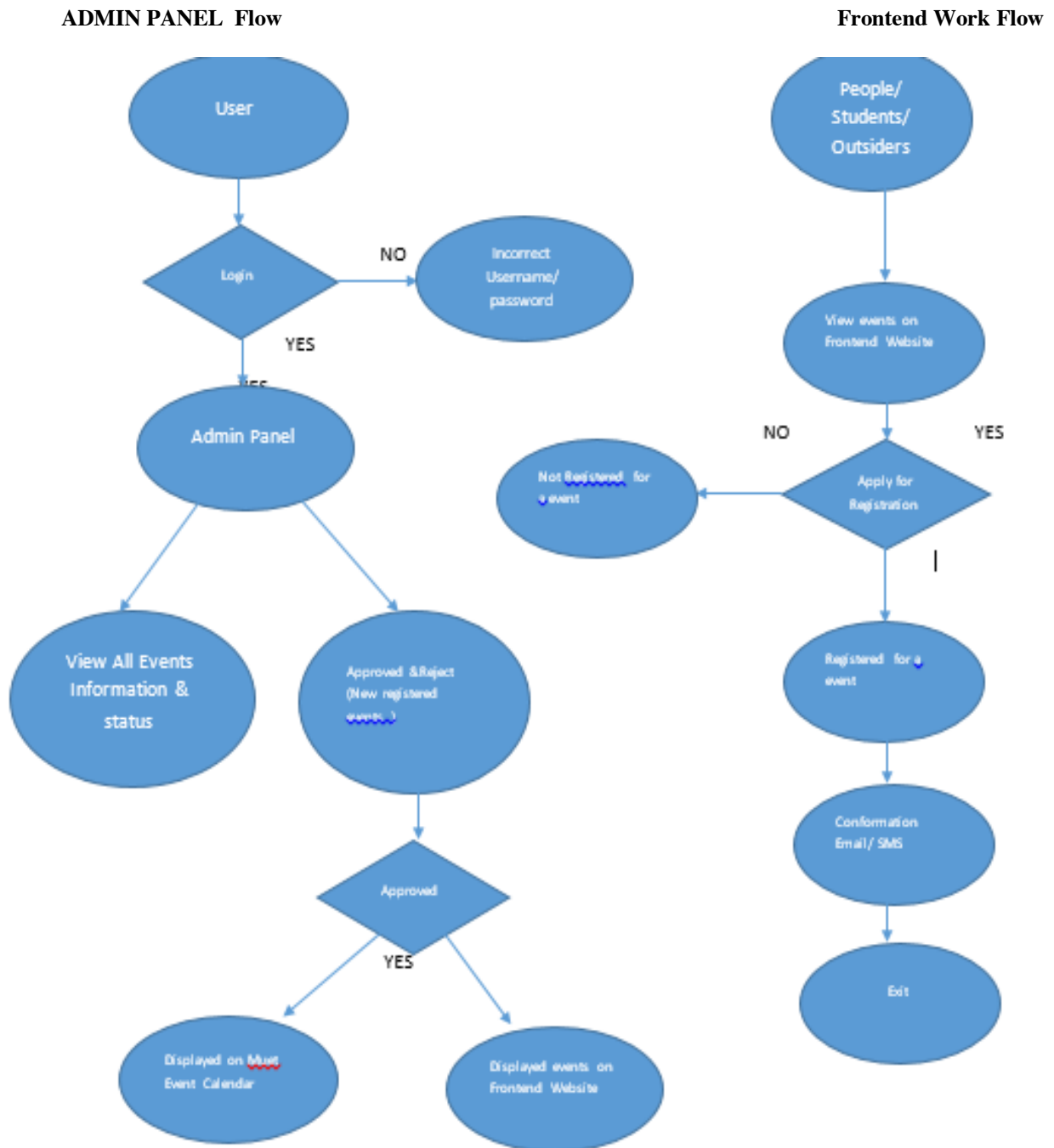
Consequently a standard information model of occasions, a concentrated storehouse of the occasion data, and an occasion the board system must be actualized. This device will enable clients and executives to deal with their occasions in the vault and will give clients will proficient seeking and reminding offices.

**Technologies:** HTML, CSS, BOOT, JavaScript, JQuery, AJAX, JSP, Servlets, MySQL.

## **Group Members:**

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❖ Abdul Musawir	16sw37	abdulmusawir49@gmail.com
❖ Danish Ali	16swX31	danish.xero@gmail.com

### System Workflow Diagram:



### Supervised By:

❖ Engr. Junaid Baloch

# **GSM BASED HOME AUTOMATION SYSTEM**

## **Abstract:**

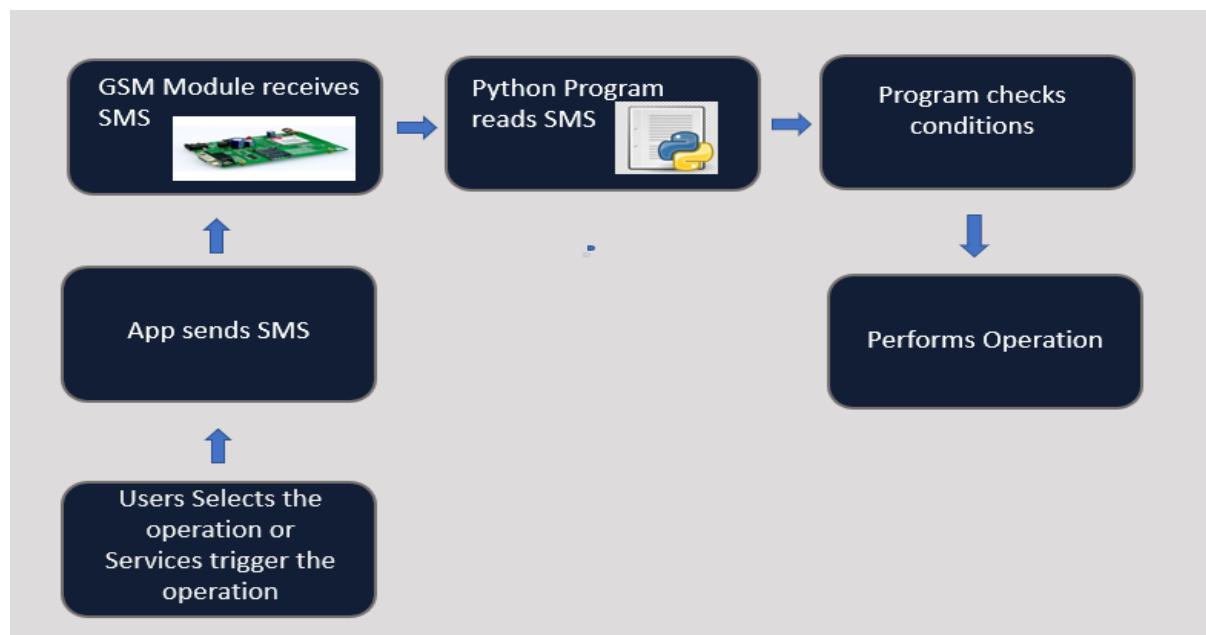
Home automation system has become a center of attention for many years. With the emergence of smart technologies this system has made its way into many homes. By considering its growing demand we are proposing GSM based Home Automation System. Our proposed system will control the home appliances using the microcontroller which will receive the SMS via Android application. Use of SMS in the system will make it one of the cheaper systems, as communication via SMS is comparatively cheaper than other communication methods. The user friendly android interface will allow the users to control the appliances and easily switch between the choices. Moreover, we decided to conduct a survey of related existing systems and chalk out a proper comparison chart.

**Technologies:** Raspberry Pi, Relays/ Relay modules, GSM Module SIM800L, Python Language, Android Studio.

## **Group Members:**

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❖ Mafaza Syed	16SW42	ms.syed97@gmail.com
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❖ Irfan Ali	16SW86	ali.irfan.jarwar@gmail.com
❖ Rubab Fatima	16SW50	AymanfatimaSW@gmail.com

## **System Workflow Diagram:**



## **Supervised By:**

❖ Engr. Zubair Ahmed.

# KINECT BASED VIRTUAL SHOPPING ASSISTANT

## Abstract:

This project provides an interface for the shoppers to virtually try out clothes and other accessories. The system can be incorporated with an e-commerce business where personal wearable items can be tried by identifying the users' position in front of the depth sense camera and allowing them to try out items from wrist watches to dress, etc. virtually and help them decide what looks good on them. The system will be designed to cater variety people, thus thorough investigation will be conducted to ensure robustness.

**Technologies:** Human Computer Interaction (HCI), Augmented Reality, 3D modeling, Unity 3D, C#.

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## System Workflow Diagram:

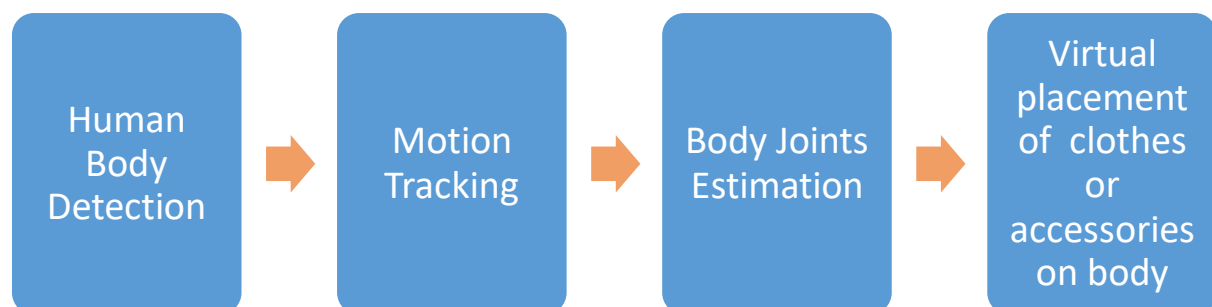


Figure 1. System workflow for virtual shopping assistant.

## Supervised By:

- ❖ Engr. Rabeea Jaffari

# EFFICIENT ROUTE SELECTION AND TRACING FOR HOME DELIVERY OF COOKED FOOD

## Abstract:

Every day delivery boys face challenges in reaching their destinations on time. These problems include but are not limited to traffic jams, busy roads and many others. To find the shortest route, navigation applications are often used, but the paths suggested by such systems are usually based on already mapped roads which rarely include two-wheeler paths and forgotten old roads. Hence, we propose an android application that overcomes these problems by using the past experiences of home delivery boys to generate the shortest possible paths more efficiently. Our solution also includes a speech interface to provide navigational directions and an interactive map for the customers to trace their order delivery.

**Technologies:** Android, Firebase Database, MYSQL Database, Google Maps API, GPS tracker, Network connection.

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## System Workflow Diagram:

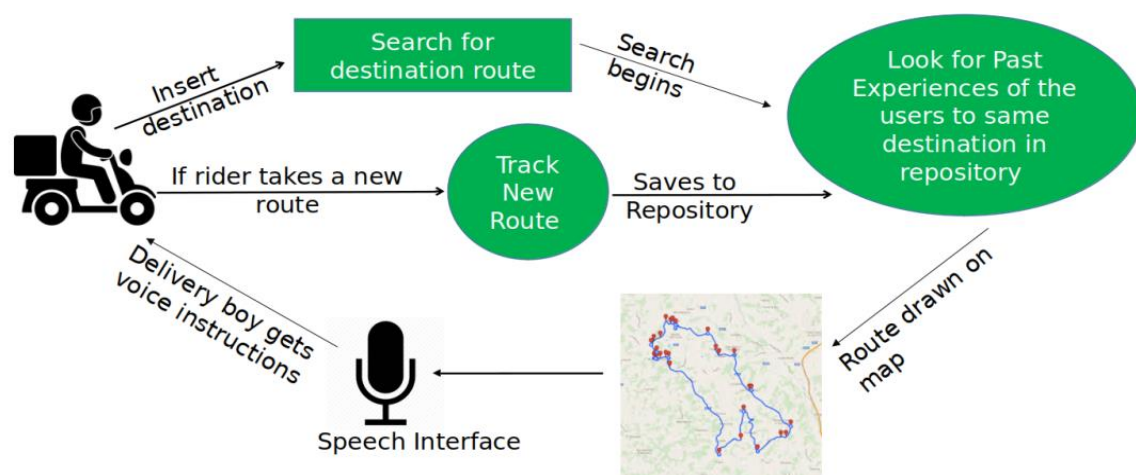


Figure 1, System Workflow for Delivery Boy Module.

## Supervised By:

- ❖ Engr. Mariam Memon





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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