“KIET ALUMNI APP”

A PROJECT REPORT
Submitted By

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Submitted in partial fulfillment of the
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Under the Supervision of

Dr. Vipin Kumar
Associate Professor

Submitted to

DEPARTMENT OF COMPUTER APPLICATIONS
KIET Group of Institutions, Ghaziabad
Uttar Pradesh-201206

CERTIFICATE

Certified that Rajul Sahu - 2100290140110, Rahul Pal - 2100290140108, Shagun Sharma-2100290140121, and Anamika Mani - 2100290140025 have carried out the project work having **"KIET ALUMNI APP"** for Master of Computer Applications from Dr. A.P.J. Abdul Kalam Technical University (AKTU), Technical University, Lucknow under my supervision. The project report embodies original work, and studies are carried out by the student himself/herself and the contents of the project report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

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This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Date:

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ABSTRACT

KIET ALUMNI APP is common platform that will help all the alumni of the KIET to remain connected to the institute and share their experience. The main objective of this app is to allow old and new students of the college remain connected with each other, know about each other and their current activities.

This will help the students know about the current trends and technologies prevailing in the industry at the moment. The app is built using Flutter and Fire Database.

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Abstract

Many people are using mobile phones but there is no communication between their school and college friends and staffs because they forget their contacts. To overcome the above issues this android application is used. It will help in the reunion of alumnus and will connect alumni members regularly.

The information system for communication with alumni embodies is one of many ways how university can keep tracking with its graduates. Except for communication between university and its graduates, the information system should allow communication between graduates themselves and their personal presentation in public. This system will collect actual information about working experience of graduates, which can help in improving faculty credits and their teaching process. The presented app includes all these points and focuses on usability and comfortable user interface. This app will manage the fresh as well as old graduate students with their respective information in actively participating in making registering, searching, managing the alumni information for sharing their expertise, network, jobs opportunities and resources.

This app is built using flutter where-in many user-friendly controls has been added in order to make it a user interactive application. This app which stores the alumni database will make it easier to maintain records of alumni. The proposed system will be online so the alumni will be able to access it from anywhere.

Who are alumni?

Alumni are people who previously attended or graduated from a particular school, college or university, or people who had a former association with the same organization. The day you receive your diploma from your university is a proud one, marking the culmination of your degree. But it doesn't signal the end of your relationship with the school or the benefits still available to you. Alumni are an integral part of a university community and are true advocates for student success.

Why is an alumni network important?

One of the best parts of being part of an alumni association is the network that comes with it. An alumni network connects you, as a graduate, with a number of professional contacts and other graduates from your university. Through networking and professional development opportunities, alumni often participate in and benefit from career insights and advice from other alumni and career professionals with the university. Whether it be building your brand, creating business connections or getting involved in other organizations, an alumni network is an excellent source for building those long-term relationships to get a foot in the door or advance your career. You may feel a sense of “what’s next” as you **finish your degree**, but the alumni network gives you a place

to create valuable interminable connections with your university and like-minded contacts long after you have finished school. You may feel a sense of "what's next" as you **finish your degree**, but the alumni network gives you a place to create valuable interminable connections with your university and like-minded contacts long after you have finished school.

Existing system -

The existing system is KIET alumni portal. However, it has all the functionalities to keep the record of an alumni but over years we have found that websites or portals are less user interactive and many times difficult to use and access due to the limitations of functionalities available on different devices.

Another existing system is alma connect. This system has all the functionalities incorporated in it but the problem is that it is a third-party system for which we need to pay much amount to avail its facility.

Proposed system-

The proposed system is an alumni app that will be user interactive and very easy to use. Moreover, it will be basically designed for our own college i.e., KIET Group of Institutions so we need not to pay any third party. Also, any number of functionalities can be added as per the convenience and requirement of the department or the institution. The main objective of this app is to allow old and new students of the college remain connected with each other, know about each other and their current activities.

This will help the students know about the current trends and technologies prevailing in the industry at the moment.

CHAPTER 1: INTRODUCTION

PROJECT DESCRIPTION

This app (i.e., **KIET ALUMNI APP**) is used TO PROVIDE A common platform that will help all the alumni of the KIET to remain connected to the institute and share their experience. This app will allow old and new students of the college remain connected with each other and know about each other and their current activities. THIS will help the students know about the current trends and technologies used in the industry.
The app consists of login page that will allow the already registered people to use the app by using their logging credentials. There is signup page which allows you to sign-up in three different ways i.e.

1. Signup as an alumni
2. Signup as a teacher
3. Signup as a student

The signup as an alumni option is used to provide registration of the alumni who can latter use the app as well as can edit their details.

The signup as a teacher option has been provided for the teachers and other authorities of the college who can register and see the details of other alumni and students.

The signup as a student option has been provided for the current students who are studying in the college. Students registering in the app will be able to see the details of their alumni as well as teachers. Later, after passing out they will be treated as an alumni so their account will be transferred to alumni section.

The other facilities provided are that the project has been developed by using high quality regex due to which it provides high level of security.

The app provides the easy interaction and communication because a user can easily get to call their alumni and teachers through a single click. Similarly we can easily reach to mail through a single click where we can interact through email messages.

The validation is another facility provided which do not allow user to enter the wrong details during their registration process.

The email verification process has been done through an OTP verification which is send directly to the email which has been used for the signup.

OBJECTIVE

The main objective of this app (**KIET ALUMNI APP**) is TO PROVIDE A common platform that will help all the alumni of the KIET to remain connected to the institute. Alumni are an integral part of a university community and are true advocates for student success. Through networking and professional development opportunities, alumni often participate in and benefit from career insights and advice from other alumni and career professionals with the university.

Various objectives fulfilled by the app are:

1. To build a system that will be able to manage alumni data of a college and provide easy access to the same.
2. To provide user friendly interface.
3. To provide quick data retrieval and large amount of data storing.
4. To allow old and new students of a college or university to communicate with each other. This allows users to know about each other and their current activities.

This app is going to be designed particularly for our own college, i.e., KIET group of institution. This application is built to ease the work of maintaining the records of alumni and it will be easy to use by the students and other staff members of the college. The app has been built for the welfare of the students especially for the freshers.

CHAPTER 2: LITERATURE REVIEW

ABSTRACT

Background/Mission: Disruptive technologies that alter the market's overall perspective are constantly emerging in the times we live in. One notable example is the development of mobile apps, which dramatically altered how people used software. Even while in the past, software development primarily involved standalone or web applications, it now includes a significant amount of mobile app development. For the user to use standalone technologies' apps, they needed to have at least a personal computer nearby. The target market for this kind of application development becomes diverse, though, as the only device on which an app may be used is a mobile phone. Since practically everyone has access to a mobile device, app development for handheld devices has now become the norm for delivering services to the target audience faster. Since its inception, the app development industry has only expanded exponentially. This essay goes into great detail about India's supremacy in the mobile app development industry.

Objectives: To analyses and comprehend the global and Indian mobile app development markets, as well as the preferences, applications, costs, and scope of app development in India, and to carry out a SWOC analysis of the mobile app development market.

Design/Methodology/Approach: Using a variety of secondary data sources, including websites and blogs, a thorough analysis of the mobile app development industry is conducted. To comprehend the difficulties facing the sector, some scholarly study articles are also consulted.

F**indings/Result:** According to the SWOC analysis of the mobile app development industry, this sector will be one of the most in-demand ones, particularly in a world plagued by pandemics.

Originality/Value: In this article, several facets of the mobile app development industry are analyzed. The analysis is used to highlight the industry's present and future situation.

Keywords: Android, iOS, Industry Analysis, App Development Industry, App Development Companies, Mobile App Development

INTRODUCTION

Since the beginning of its age, various pieces of software in the information technology sector have altered the way we view the world. We observe that practically all other processes we formerly carried out manually are now carried out and controlled by technology. One example of this industry is software development.

Creating and distributing software that falls under the heading of standalone programmers and websites is referred to generally as "parenting." The minimum hardware needed to create these programmers was often a personal computer with sufficient specifications. Those who could buy and own a computer in the age of software could only use or make use of it. People used to only use Cyber Cafes to view websites up to a certain point.

Despite the fact that many people now have access to laptops and PCs, the number is still remarkably low when compared to the population. The number of people who started purchasing mobile phones when they were introduced—which were typically a hand-held computer—is substantially higher, and the number of people who can understand applications started to multiply. Today, we can claim that individuals are learning to utilize an application in the form of a mobile app, regardless of the age group to which they belong. Since then, the app development industry has profited from it.

Description:

The three basic categories for developing mobile applications are native, web, and hybrid. Installing native mobile apps requires visiting an app shop like the Apple Store or Google Play Store. They are designed exclusively for a single platform and can fully utilise the device's potential. Mobile operating systems are used to execute it. The second web-based mobile application is accessible from mobile phones using web browsers and is hosted on web servers. Because they may be used on a variety of mobile operating systems and do not rely on hardware specific to any one device, web apps are very portable.

Native and web solutions are used in hybrid mobile applications. The hybrid application's main output is created utilising web technologies including HTML, CSS, and JavaScript. Making a mobile application is more difficult than making a traditional software programme. User interface, input technologies, data management, portability, and security are different from those of traditional development. Therefore, modifications in the life cycle of developing mobile applications, including process models, tools, frameworks, development, and testing procedures, must be made by mobile application developers and development firms. Otherwise, they can't remain in the market for very long.

If we used the traditional software development life cycle models for developing mobile applications, we might end up with low-quality apps because the app developers did not follow the development life cycle phases, they lacked knowledge and experience in the relevant technologies, they did not provide enough training to the developers and testers, and they did not maintain the apps well.

A methodology is a model, which project managers employ for the design, planning, implementation and achievement of their project objectives. Effective project management is essential in absolutely any organization, regardless of the nature of the business and the scale of the organization. From choosing a project to right through to the end, it is important that the project is carefully and closely managed.

The concept of system lifecycle models emphasized on the need to follow some structured approach towards building new or improved system. Many models were suggested like waterfall, prototype, rapid application development, V-shaped etc. With the growing operations of organizations, the need to automate the various activities increased. So, it was felt that some standard and structural procedure or methodology be introduced in the industry so that the transition from manual to automated system became easy.

Looking at the disadvantages of the traditional software development life cycle models for developing mobile applications, we tried to opt for another model which could be useful for

the mobile application development. Based on the nature of our project solution, we decided to use prototype Software development life cycle model. The project typically has a number of Phases and the level of control required over each phase are primarily defined by the nature of the Project, the complexity of the same and the industry to which the Project has to cater to.

Methodology:

The prototype model requires that before carrying out the development of actual software, a working prototype of the system should be built. Since, the requirements are not complete known at the initial stage, also the choice of interfaces and the colour combinations generally varies from user to user so it was necessary to build a prototype prior to the start of complete development.

Therefore, the system is partially implemented before or during the analysis phase thereby giving the customers an opportunity to see the product early in the life cycle. The process starts by interviewing the customers and developing the incomplete high-level paper model. This document is used to build the initial prototype supporting only the basic functionality as desired by the customer.

Once the customer figures out the problems, the prototype is further refined to eliminate them. The process continues until the user approves the prototype and finds the working model to be satisfactory.

The purpose of preliminary investigation is to evaluate project requests. It is not a design study nor does it include the collection of details to describe the system in all respect. Rather, it is the collecting of information that helps users or customers to evaluate the merits of project request and make an informed judgement about the feasibility of the proposed project.

A prototype usually turns out to be a very crude version of the actual system, possible exhibiting limited functional capabilities, low reliability, and inefficient performance as compared to actual software. In many instances, the client only has a general view of what is expected from the software product.

This model is much better equipped to handle change. Each incremental functionality is verified by the customer and hence the relative risk in managing large and complex projects is substantially reduced. On the downside, there is a possibility of gold plating, wherein the functionalities not really required end up being built into the Product or Deliverable.

The mobile application developed by us using the prototype model turned out to be a successful attempt. Hence, the same model can be used by other developers for developing a creative and successful mobile application instead of using the traditional development model.

This research intends to aid mobile app developers in recognising the numerous problems and difficulties. This will assist businesses and developers in locating efficient and user-friendly settings, models, and methods for developing mobile applications.[1]

The environment for creating mobile apps is extremely competitive, changing, and unpredictable (Flora & Chande, 2013). The particular difficulties the mobile app market faces make this obvious. Because of this, the use of "agile methodologies" has been suggested as a logical fit for developing mobile application software to address these difficulties (Flora, Chande, & Wang, 2014).

The use of generalists as opposed to specialists, client on-site, test-first development, evolutionary and emerging needs, and continuous delivery are some of the key attractions. Yet, investigations on the use of such agile approaches in the creation of mobile applications have shown that there is a need to modify general, agile software development processes to specifically meet the needs of mobile apps (Flora, Chande, & Wang, 2014).

The first discussion of the viability of the agile method for developing mobile applications took place in 2003. (Abrahamsson, Warsta, Siponen, & Ronkainen, 2003). When developing mobile applications, the study by Abrahamsson (2005) laid out the relationships between agile themes and development characters. The mapping illustrated why agile is thought to be the best strategy for developing mobile applications. This is a result of rapid development cycles, an unstable environment, application-level software, small teams, an environment that values objects, and a clear target market.

Case study:

A case study research method is an empirical study that examines a current phenomenon in its actual setting, particularly when it is difficult to distinguish clearly between the phenomenon and setting (Yin, 2013). The natural environment of the phenomena is important to this methodology's qualitative nature.

According to Runeson and Höst (2009), this enables the researcher to gain more complete replies from participants and a deeper grasp of the setting. This kind of research uses a methodical procedure for gathering data, analysing data, and producing results (Verner, Sampson, Tosic, Bakar, & Kitchenham, 2009).

Case studies can be used for both explanatory and descriptive reasons in addition to being utilised for exploratory objectives (Yin, 2013). Because the context can be crucial in developing an emerging theme or theory, it is crucial to incorporate instances from the industry when using exploratory case study research (Runeson & Höst, 2009; Verner, 2009). Also, it is strongly advised that case studies be supported by multiple sources of information and proof (Yin, 2013).

The use of such case study research fits our study's goals perfectly. As a result, we will be able to explore the use of agile and incremental development methods in the industrial

setting of mobile app development using a qualitative methodology with a limited number of participants to fully grasp their situations.[2]

Various case studies and research paper proves the agile methodologies to be the best methodology for the development of mobile application but that is just a part of study specifically done to prove the worth of agile methodologies in the field of mobile application development. However, it does not prove that other methodologies cannot come up as a successful use for mobile application development.

Our study and successful usage of prototype model shows that other methodologies can also be used as for mobile application development. However, this completely depends on the type of projects being developed by the developers. The selection of models and methodologies varies from project to project and this decision has to be taken on the initial stages of software development lifecycle.

Mobile App Objectives and Technology:

Defining the goals for developing an app is an essential step in the process where the client wants to specify goals that the app must be able to achieve. Also, at this phase, it is ensured that all of the app's technical and non-technical needs are well documented. In this stage, the developer gains a thorough understanding of the problem statement and the client's needs . For instance, we must be able to, so to speak, respond to inquiries like these:

Who are the app's target markets and end users?

What was the motivation behind creating this app?

How would creating this app assist the developer or company?

What tools and technologies could we need to create this app?

Who are the market rivals and what will this app's Unique Selling Proposition (USP) be?

By the conclusion of the First Stage, we must be able to respond to a number of questions, including those listed above. Finding a way for this software to be updated and expand its capabilities as the business or region develops is also crucial. Most of the time, an app's success is determined by its future potential.

because in a world where today's newest technology may become a legacy technology tomorrow, it must endure on its own.[3]

This model is used when the customers do not know the exact project requirements beforehand, like in the case of our project where ,

• Major requirements were evidently defined, however many of the details evolved with time.

• There was a need to complete the project within a short time schedule.

• A new technology is being used or the resources with needed skill set are not available.

We were learning C# and could iterate from one technology to another to ensure I effective implement all the functionalities.

• The project had some high-risk features and goals.

This justifies the use of this model for the development of our project. If any other project has same requirements then the developers can use the same software development model for the development of their project.

Java, Kotlin, Python, R programming, C++, HTML5, and C# are the major programming languages used for developing Android mobile apps. iOS mobile apps are powered by programming languages like Swift, Objective-C, C#, and HTML5.There are various technologies that can be used for mobile application development but each language develop only a particular type of application either for Android or for iOS.

Therefore, there is a need to use a trending technology which could be used to develop cross-platform applications for Android, iOS, Linux, macOS, Windows, Google Fuchsia, and the web from a single codebase. And that current trending or the latest technology which has a huge scope in the future is – Flutter.

Flutter is a mobile app development platform created by Google. It allows developers to create web, desktop, and cross-platform apps that run on Android and iOS devices. Flutter uses a reactive programming language called Dart, making development faster and easier than traditional methods.

With powerful graphics and animation libraries, the Flutter framework makes it easy to build user interfaces that react smoothly in response to touch. Flutter is built on the Dart programming language and provides a fast development workflow with hot reloading, so you can quickly iterate on your code.

Conclusion:

It is evident from the experiment's findings, as well as the research and discussion that followed, that a Flutter app does not perform worse than a native app. This study provides

proof that Flutter outperforms native in various circumstances, such as decoding fles. This should have a significant effect on how people perceive cross-platform applications.

The user experience is not compromised by Flutter's performance overhead. Furthermore, the differences in timing execution are insufficiently significant, suggesting that mobile developers shouldn't be alarmed by the performance of cross-platform applications.

This study demonstrates that for geolocating the user, database access, and infinitely scrolling lists, the Flutter application performs similarly to the native Android application. Flutter, however, performs worse than native while rendering an animation. Last but not least, Flutter outperforms native in base64-decoding.

The findings of this study and the results of subsequent studies demonstrate that cross-platform frameworks are getting better at offering the same functionality and performance as their native alternatives. Flutter is updated regularly and a sizable portion of every upgrade is typically performance.

Future work:

Research is constantly needed in this field because the tools and frameworks are upgraded frequently. Over time, this might get them closer to native performance.

Further research in this field might examine additional well-known cross-platform frameworks, like NativeScript, Cordova, Xamarin, React Native, and many others. Then, in order to determine which type of framework or which framework performs best, comparisons between various types of frameworks, such as cross-compiled and progressive web apps, could be made.

Another potential future topic of research is the development or use of an app with more intricate features to make the app more realistic. The majority of applications employed in studies in this field are simple. A non-trivial app would require significantly more time to develop, thus that would have to be taken into consideration.

Instead of just Android, comparisons with iOS or perhaps other platforms might be made. Conclusions on which cross-platform application performs better—native or Flutter—could be reached.

Finally, additional research might be done on other desirable qualities like usability, security, or how simple it is for developers to use Flutter.[4]

Another potential future topic of research can be the development of another mobile application with other requirements that have different scope or future to prove the worth of other methodologies and technologies in the field of mobile application development.

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CHAPTER 3: MODULES

Modules Description

The project consists of various modules that has been used for complete development of project. These modules are as follows:

1. **Login module: -**

   It will provide security feature through login credentials which will ensure that only the authorized user can get access to the system. A high-quality regex has also been used to provide security to the system.

2. **Registration module: -**

   It will allow the Alumnus and Students to register in the system. For registration there are various options provided such as:

   Register as an alumni
   Register as a student
   Register as a teacher

3. **Searching module: -**

   It will help students and staff to search different alumni members based on their position, passing year etc. A user will also be able to see all the details of the teachers, alumni and students and will be able to connect easily.

4. **Admin panel: -**

This panel is designed so that admin can perform all the CRUD operations upon the available data.

CRUD refers to the four basic operations a software application should be able to perform – Create, Read, Update, and Delete. In our app, users will be able to **create data**, have access to the data in the UI by **reading** the data, **update** or **edit** the data, and **delete** the data.

5. **Alumni Panel: -**

This panel will show all the details about the alumni. Here the alumni will be able to update their information according their current role or the current organization.

Also, the alumni will be able to view details of other alumni other than himself/herself who are registered in the same panel.

6. Students Panel: -

This panel will show all the students studying currently in the college and also the details related to the student. Students registering in the app will be able to see the details of their alumni as well as teachers.

Later, after passing out they will be treated as an Alumni so their account will be transferred to alumni section.

CHAPTER 4: REQUIREMENT SPECIFICATIONS

Hardware Used: -

Processor:	11th Gen Intel(R) Core(TM) i3
System Type	32-bit operating system
Speed:	3.00 GHz
Hard Disk Space:	256 GB
Ram Memory:	4 GB
Operating System:	Windows 10

Tools / Software used: -

- Android Studio
- VS Code

Technologies used: -

- Flutter
- Firebase

Scope:

This system can be used as the office of Alumni and college Relations seeks to protect the privacy of its alumni and friends, and thus, endeavours to safeguard theuse of information in its custody. To that end, the office of Alumni and College Relations provides constituent information to requestors only under the conditions.

This system can be used as an application for the **Alumni Information Database** to manage the college information and student's information. The system is an online application that can be accessed throughout the organisation and outside customers as well with proper login provided, which will give better service to the customers.

The app can be enhanced in the future by adding the functionality of communicating through messages, which will help students to talk to their pass out seniors and resolve their queries and take guidance from them if they feel like.

The " Kiet Alumni App " is a fully functional app which is time saving, easy to use, an efficient way of managing relatable data, making it for the institution to connect with the alumni and students easily and updating them about the ongoings of the institution.

Automating techniques to some extent can increase feasibility in order to increase functionality in the further development of the app. This can also include in updating the user interface to latest standards and keeping it agile to bring in faster changes with less modification in the original app and still getting valuable outcomes.

Further, other facilities can be added in the app such as –
Job postings can be automatized using tools such as web scrapping which are available to scrap data from other websites.

SOFTWARE SYSTEM ATTRIBUTES

- **Portability**: -

  The system should be machine independent.

- **Security**: -

  The system is designed in such a way that it will store the recorded data in the system of the owner. The system will be secure from unauthorized access of the application.

- **Maintainability**: -

  The system will be designed in a maintainable order. The system can be easily modified and renewed according to the need of the organization.

Features of User Performance System

- Internet connection required against the computer.
- Multiple users can login and register on the same portal remotely.
- People can register and login in the system.
- Graphics with a classic look and the feel of a royal Web Application.
- Classic Profile Details to display profile of each user.
- Security of data to be stored.
- Ensures data accuracy (number of alerts generated).
- Minimize manpower.
- Minimize time consumption.
- Greater efficiency.
- Fast.

- Better services.
- User-friendliness and Interactive.
- Minimum time required.
- Easy to add, update and delete.
- User friendly.
- Free for the user.

METHODOLOGY

Introduction

This Section describes the methodology applied during the development of Kiet Alumni App. A methodology is a model, which project managers employ for the design, planning, implementation and achievement of their project objectives. Effective project management is essential in absolutely any organization, regardless of the nature of the business and the scale of the organization. From choosing a project to right through to the end, it is important that the project is carefully and closely managed.

Based on the nature of our project solution, it was essential to use prototype Software development life cycle (SDLC). The project typically has a number of Phases and the level of control required over each phase are primarily defined by the nature of the Project, the complexity of the same and the industry to which the Project has to cater to.

In the prototype model, the system is partially implemented before or during the analysis phase thereby giving the customers an opportunity to see the product early in the life cycle. The process starts by interviewing the customers and developing the incomplete high-level paper model. This document is used to build the initial prototype supporting only the basic functionality as desired by the customer. Once the customer figures out the problems, the prototype is further refined to eliminate them. The process continues until the user approves the prototype and finds the working model to be satisfactory.

The prototype model requires that before carrying out the development of actual software, a working prototype of the system should be built. A prototype is a toy implementation of the system. A prototype usually turns out to be a very crude version of the actual system, possible exhibiting limited functional capabilities, low reliability, and inefficient performance as compared to actual software. In many instances, the client only has a general view of what is expected from the software product.

Justification for the Methodology

This model is used when the customers do not know the exact project requirements beforehand, like the case of this project where,

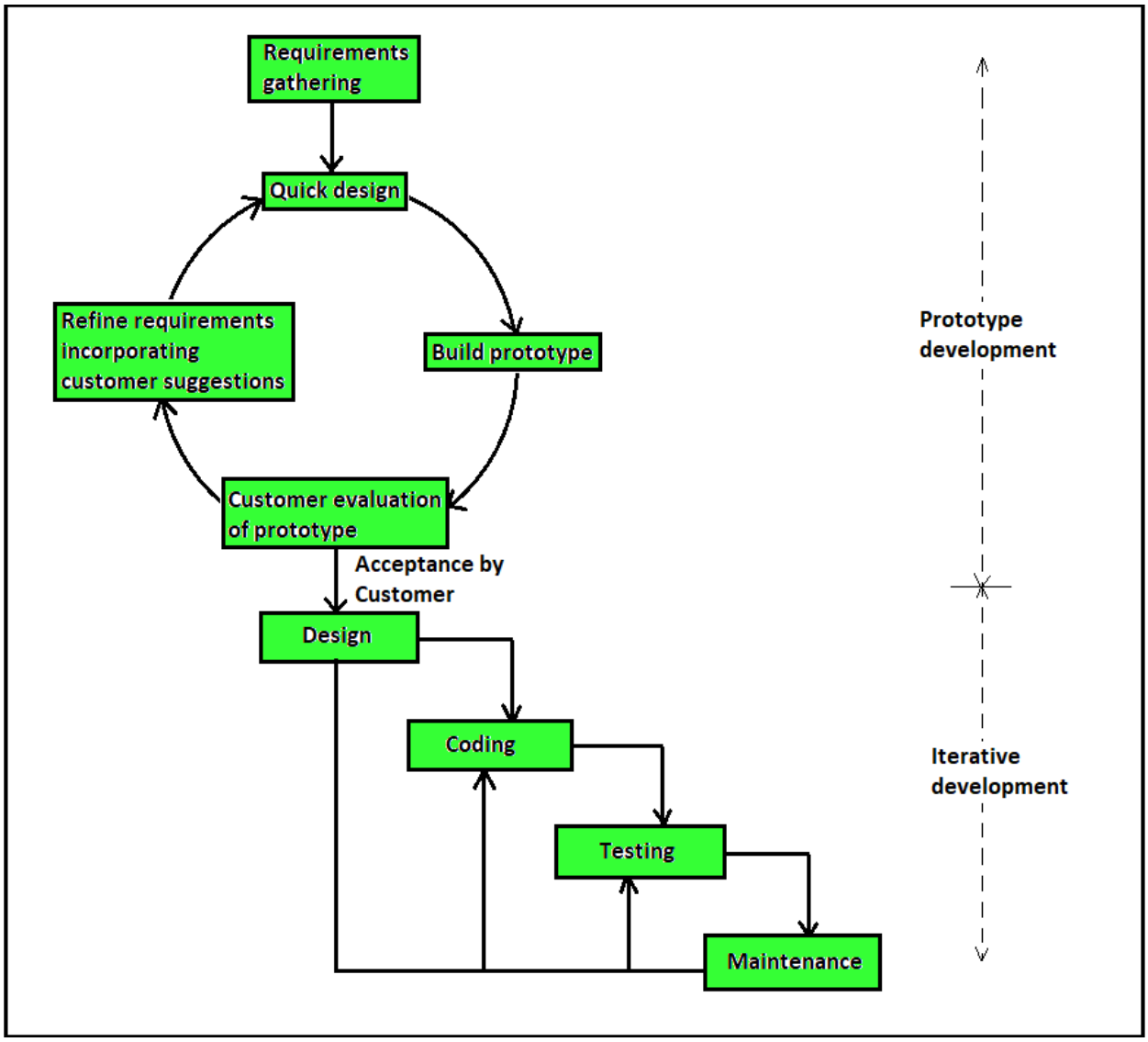
• Major requirements were evidently defined, however many of the details evolved with time.

• There was a need to complete the project within a short time schedule.

• A new technology is being used or the resources with needed skill set are not available.

We were learning C# and could iterate from one technology to another to ensure I effective implement all the functionalities.

• The project had some high-risk features and goals.



The prototype model is much better equipped to handle change. Each incremental functionality is verified by the customer and hence the relative risk in managing large and complex projects is substantially reduced. On the downside, there is a possibility of gold plating, wherein the functionalities not really required end up being built into the Product or Deliverable.

In a nutshell, prototype SDLC model provide plethora of advantages inducing:

• Generates working software quickly and early during the software life cycle.

• This model is more flexible and less costly to change scope and requirements.

• It is easier to test and debug during a smaller iteration.

• In this model customer can respond to each built.

• Lowers initial delivery cost.

• Easier to manage risk because risky pieces are identified and handled during the prototype building.

Preliminary Description

The first step in the system development life cycle is the preliminary investigation to determine the feasibility of the system. The purpose of preliminary investigation is to evaluate project requests. It is not a design study nor does it include the collection of details to describe the system in all respect. Rather, it is the collecting of information that helps committee members to evaluate the merits of project request and make an informed judgement about the feasibility of the proposed project.

Analyst working on the preliminary investigation should accomplish the following objectives:

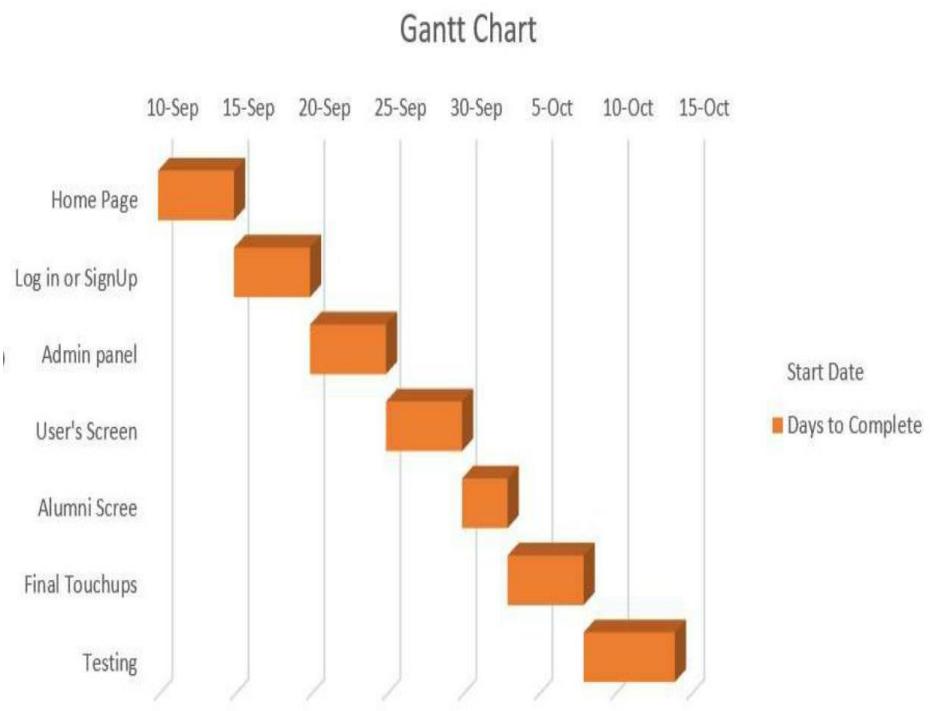
- Clarify and understand the project request.
- Determine the size of the project.
- Access costs and benefits of alternative approaches.
- Determine the technical and operational feasibility of alternative approaches.
- Report the findings to management with recommendations outlining the acceptance and rejection of the proposal

CHAPTER 6: PLANNING & SCHEDULING

Gantt chart

A Gantt chart can be developed for the entire project or a separate chart can be developed for each function. A tabular form is maintained where rows indicate the task with milestones and columns indicate duration (Weeks).

The Gantt chart for our system is represented below which shows the complete schedule for the development of our project:



CHAPTER 5: ANALYSIS

Analysis is an important part of any project, if analysis is not done properly then whole project move in the wrong direction. It also provides a schedule for proper project work.

Analysis task divided into 3 areas:

✓ Problem Recognition.

✓ Feasibility Study.

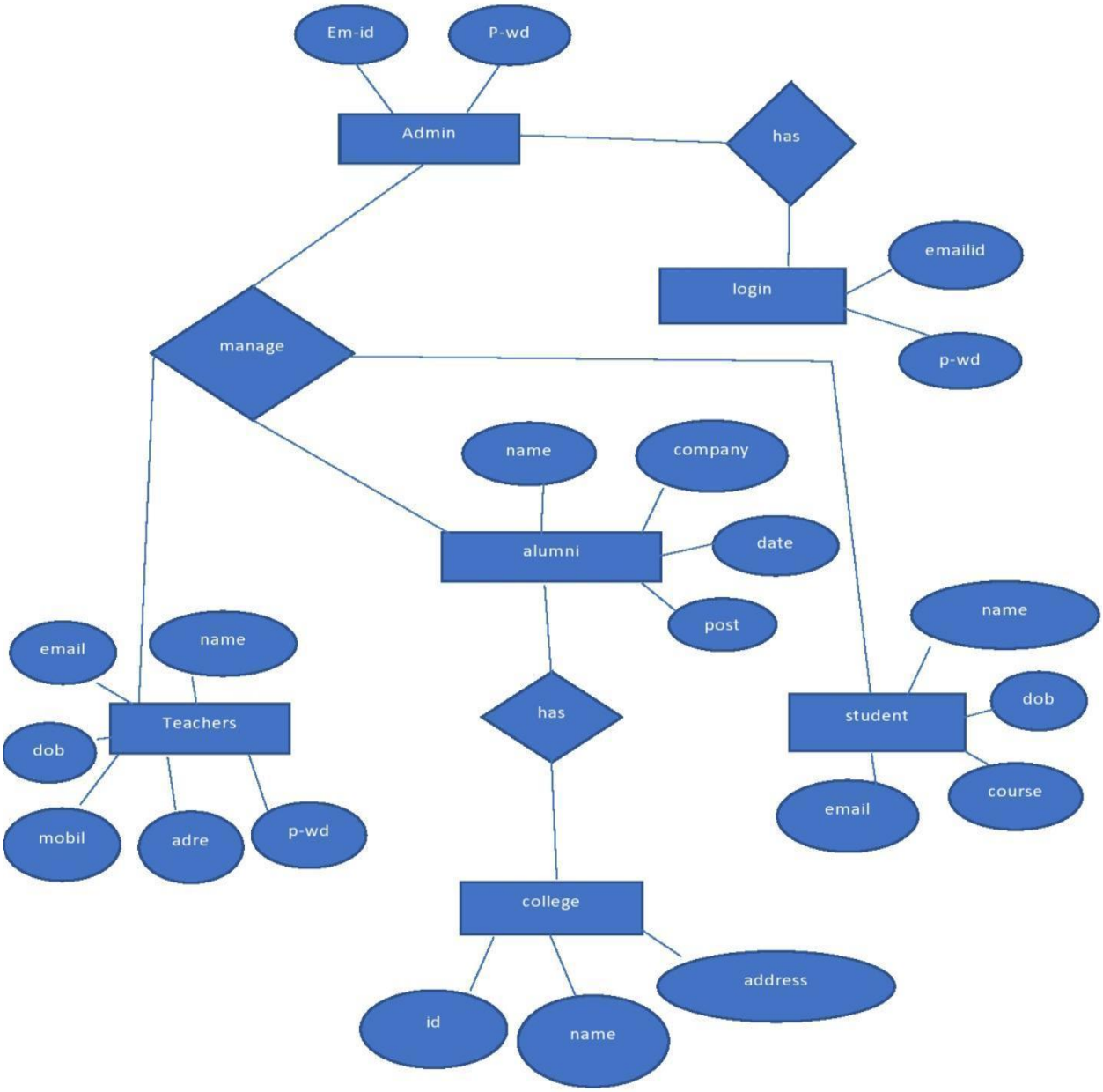
✓ Requirement Analysis.

ENTITY- RELATIONSHIP DIAGRAM

This ER Diagram represents the model of Workplace Coaction System Entity. The Entity Relationship Diagram show all visual instrument of Database table and relation between Homepage, Admin Page, User Page. All of it have Structured data and every entity may have some attributes.

User Performance System Entity and their Attributes:

1. Admin: Attribute of admin: Email id, Password, Forget Password.
2. Insert New User Details: Attributes are: Name, Email, Password, Gender, Phone.
3. Delete New User: Attributes are: Name, Email, Password, Gender, Phone.
4. Update Details of Self: Attributes are: Name, Email, Password, Gender, Phone.
5. User: Attribute of User: Email id, Password, Forget Password.
6. User Update Details: Attributes are: Name, Email, Gender, Phone.
7. Search User: Attributes are: Name, Email, Gender, Phone.
8. View Profile of User: Attributes are: Name, Email, Gender, Phone.



ER-DIAGRAM of KIET ALUMNI APP

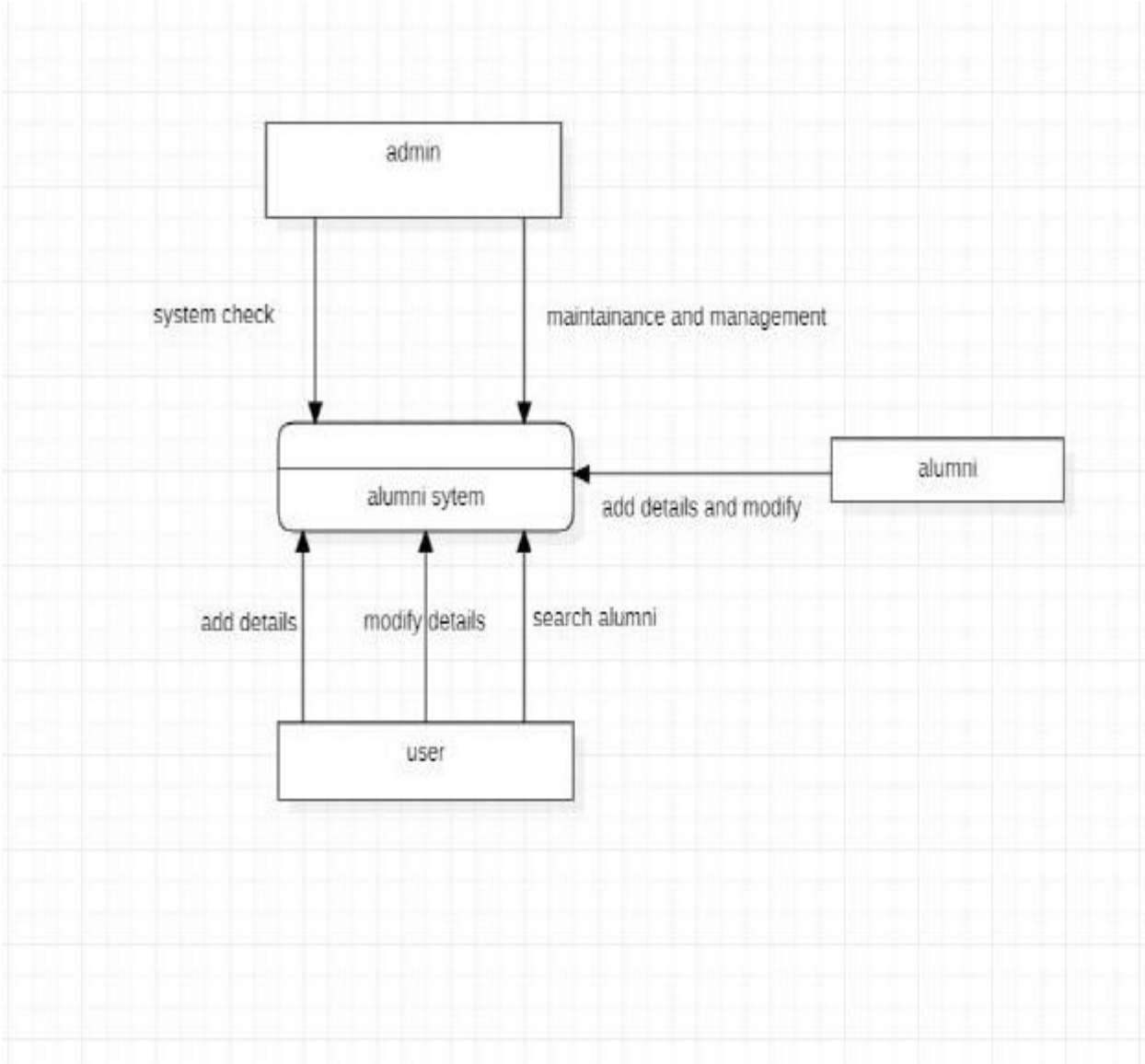
DATA FLOW DIAGRAM

Data flow diagram is used here to graphically represent the flow of data in a **"KIET ALUMNI APP".** DFD describes the processes that are involved in a system to transfer data from the admin to the user, user to the user, user to admin etc.

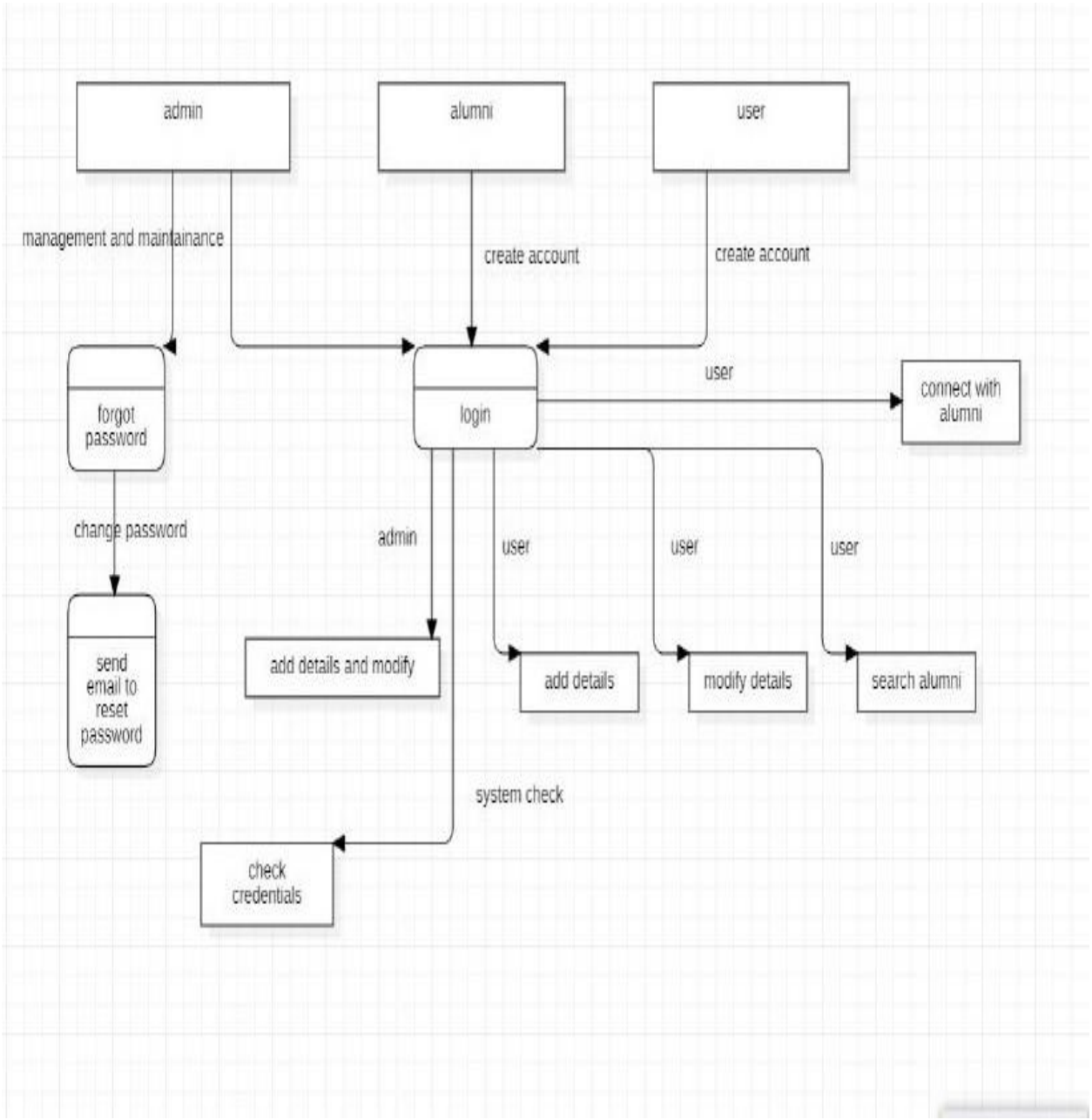
"KIET ALUMNI APP", this system shows the flow of data in admin Modules on many actions. It shows the flow of data among the sub module in it Admin data flow on the sub screen.

User Performance System, this system shows the flow of data in User Modules on many Actions. It shows the flow of data among the sub module in it User data flow on the sub screen.

0 LEVEL DFD:


admin
system check
maintainance and management
alumni sytem
alumni
add details and modify
add details
modify details
search alumni
user

1 LEVEL DFD:


admin
alumni
user
management and maintainance
create account
create account
forgot password
login
user
connect with alumni
change password
admin
user
user
user
send email to reset password
add details and modify
add details
modify details
search alumni
system check
check credentials

FEASIBILITY STUDY

Feasibility study of the system is a very important stage during system design. Feasibility study is a test of a system proposal according to its workability impact on the organization, ability to meet user needs, and effective use of resources. Feasibility study decides whether the system is properly developed or not.

There are five types of feasibility as mentioned below:

1. Technical Feasibility

2. Time Schedule feasibility

3. Operational feasibility

4. Implementation feasibility

5. Economic Feasibility

This project will be developed on computer, so first check whether the technology is technically available or not. Now a day's computer interaction with any job becomes common for any kind of job or work.

And because of increasing usage of Computer, Computer is also available with a variety of hardware. Vendors can fulfill any type of hardware requirement. The whole project is developed by some special tools or by using languages and databases, which are also available in a variety.

Preliminary investigation of a system examines the feasibility of a system that is useful to an organization. It is the first phase of system development.

The main objective of this phase is to identify the current deficiencies in the user's environment and to determine which existing problem are going to be solve in proposed system and also which new function needs to be added in proposed system.

An important outcome of such preliminary investigation is to determine whether the system that will meet all needed requirements.

Thus, three tests are carried out on the system namely operation, technical and economical.

Any project is beneficial if and only satisfies the organization requirement. For any new system setup, it only meets to be communicated and work the other supporting system.

The new system meets all existing operations since it provides right information at a right time to the right user. A Leigh man can easily operate with the system.

- **Technical Feasibility**

Technical feasibility corresponds to determination of whether it is technically feasible to develop the software. Here those tools are considered, which will be required for developing the project. The tools, which are available, and tools, which will be required, are taken into account. Considering all above points and aspects it is observed that the cost incurred in developing this project from a technical perspective would not be too high. Thus, it is feasible to develop this system.

The technical needs of a system include:

- The facility to produce outputs in a given time.

- Ability to process large number of transaction at a particular speed.
- Giving response to users under certain conditions.

The technology needed for our system is mainly:

- Latest version of browsers.
- Any operating system.

These technologies are available which helps to carry out the system efficiently.

- **Time Feasibility**

Time feasibility corresponds to whether sufficient time is available to complete the project.

Parameters considered:

- Schedule of the project.
- Time by which the project has to be completed.
- Reporting period

Considering all the above factors it was decided that the allotted time that is 3 months was sufficient to complete the project.

- **Operational Feasibility**

Operational feasibility corresponds to whether users are aware of interface environment and sufficient resources are available or not.

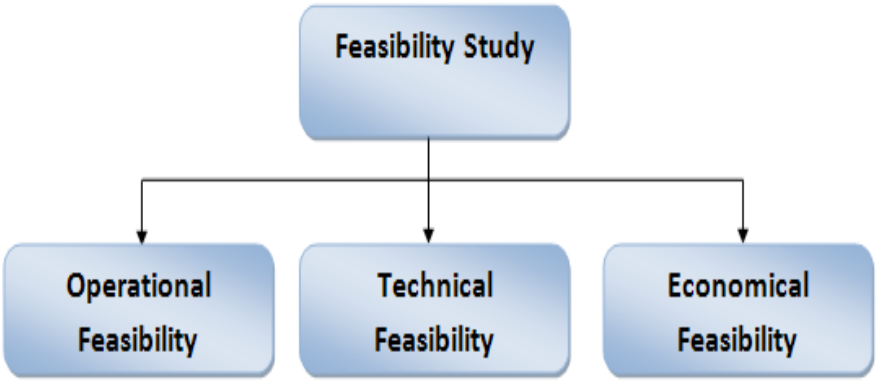
Parameters considered:

- People with a basic knowledge of computers would be able to use our system very effectively and easily, as the system would have an intuitive GUI.
- All the relevant necessary resources for implementing and operating this system are already present on int internet and hence can be downloaded. Bearing in mind the above factor, it was observed that the cost would be incurred in developing this project from an operational standpoint would be low. Thus, it would be operationally feasible.

- **Economic Feasibility**

Economic Feasibility is about total cost incurred for the system. The software resource requirement of the proposed system is C#, Angular, entity framework, dot net core, SQL management server studio and Postman for functional and backend development and HTML, CSS, JS for the frontend UI.

Thus, hardware requirements used for proposed system are very standard. Moreover, by making use of proposed system to carry out the work speedily will increase and also saves the valuable time of an individual.



REQUIREMENT ANALYSIS AND SPECIFICATION

A complete understanding of software requirement is essential to the success of a web development effort. No matter how well designed or well coded, a poorly analysed and specific program will disappoint user and bring grief to the developers.

The requirement analysis task is process of discovery, refinement, modified and specification. The software scope, initially established by the system engineer and refined during project planning, is refined in detail. Models of the required data, information and control flow, and operational behaviour are created. Alternative solutions are analysed and various project element.

Currently who want to buy some shoes or any clothing type they have to go to the shop and buy them this is very tedious for customer therefore we upload this site on internet. This web-site should be developed with an aim to simplify shopping process and keeping transparency and flexibility in performing each operation.

Requirement Gathering:

Also known as data collection. Data Collection is an important aspect of any type of research study. Inaccurate data collection can impact the results of a study and ultimately lead to invalid results. The methods used to gather the projects requirements involves Quantitative research to review the existing systems in the market.

Data Collection Methods:

This study used quantitative techniques like online survey and questionnaire. Qualitative data collection methods play an important role in impact evaluation by providing information useful to understand the processes behind observed results and assess changes in people's perceptions of their well-being. Furthermore, qualitative methods can be used to improve the quality of survey based quantitative evaluations by helping generate evaluation hypothesis; strengthening the design of survey questionnaires and expanding or clarifying quantitative evaluation findings. These methods are characterized by the following attributes:

• They tend to be open-ended and have less structured protocols.

• They rely more heavily on interactive interviews; respondents may be interviewed several times to follow up on a particular issue, clarify concepts or check the reliability of data.

• They use triangulation to increase the credibility of their findings.

• Generally, their findings are not generalizable to any specific population, rather each case study produces a single piece of evidence that can be used to seek general patterns among different studies of the same issue Existing written and visual materials were assessed to find important data and information towards the development of the system. Information about appointment managements, patient's management were collected. During data collection, the investigation found out how the current system operates, not

only that but also tried out which problems are faced and how best they can be settled. Requirement analysis and specification may appear to be relatively simple task, but appearances are deceiving. Communication content is very high, chances for misinterpretations or misinformation abound. Ambiguity is probable. The dilemma that confronts a software engineer may best be understood by repeating the statement of an anonymous customer: “I know you believe you’re understood what you think I said, but I am not sure you realize that what you heard is not what I meant”.

Requirements:

The requirements from the proposed system were categorized into functional and non-functional requirements.

Functional Requirements:

The following is the desired functionality of our system:

User Generated Email and Password

The application will work with E-mail and password generated by the admin after joining the application.

Delete and Update User

Admin will add, update and delete a user.

Register and Login

To work on the Application, one should be registered and should have to login with the personal email and password.

Non-functional Requirements:

It specifies the quality attribute of a software system. They judge the software system based on Responsiveness, Usability, Security, Portability and other non-functional standards that are critical to the success of the software system.

- User friendly**:** The system should be user friendly so that it can easily be understand by the user without any difficulty.
- Ease of Maintenance: - System should be easy to maintain and use.
- Less time consuming: The system should be less time consuming which could be achieved by good programming.
- Error free: The system should easily handle the user error in any case.
- Static: Application runs on stand-alone machine. Support only single user.
- Secure: The system will be able to provide security against any external injections by using a layered security system. Implementation of user login functionalities also ensures the system is secure from unauthorized persons.
- Reliability of the system: The system will be highly reliable and it generates all the updates information in correct order. Data validation and verification is done at every stage of activity. System recovery will also be speed.

System Specifications:

This section describes the hardware components and software requirements needed for effective and efficient running of the system.

Hardware Requirements:

Processor	11th Gen Intel(R) Core(TM) i3
System Type	32-bit operating system
Speed	3.00 GHz
Hard Disk Space	256 GB
RAM Memory	4 GB
Operating System	Windows 8

Software Requirements:

Operating system-

This is the Application which can run on both Android and IOS.

Database-

Fire Database is used in storing the data in structured manner.

Development tools and Programming language-

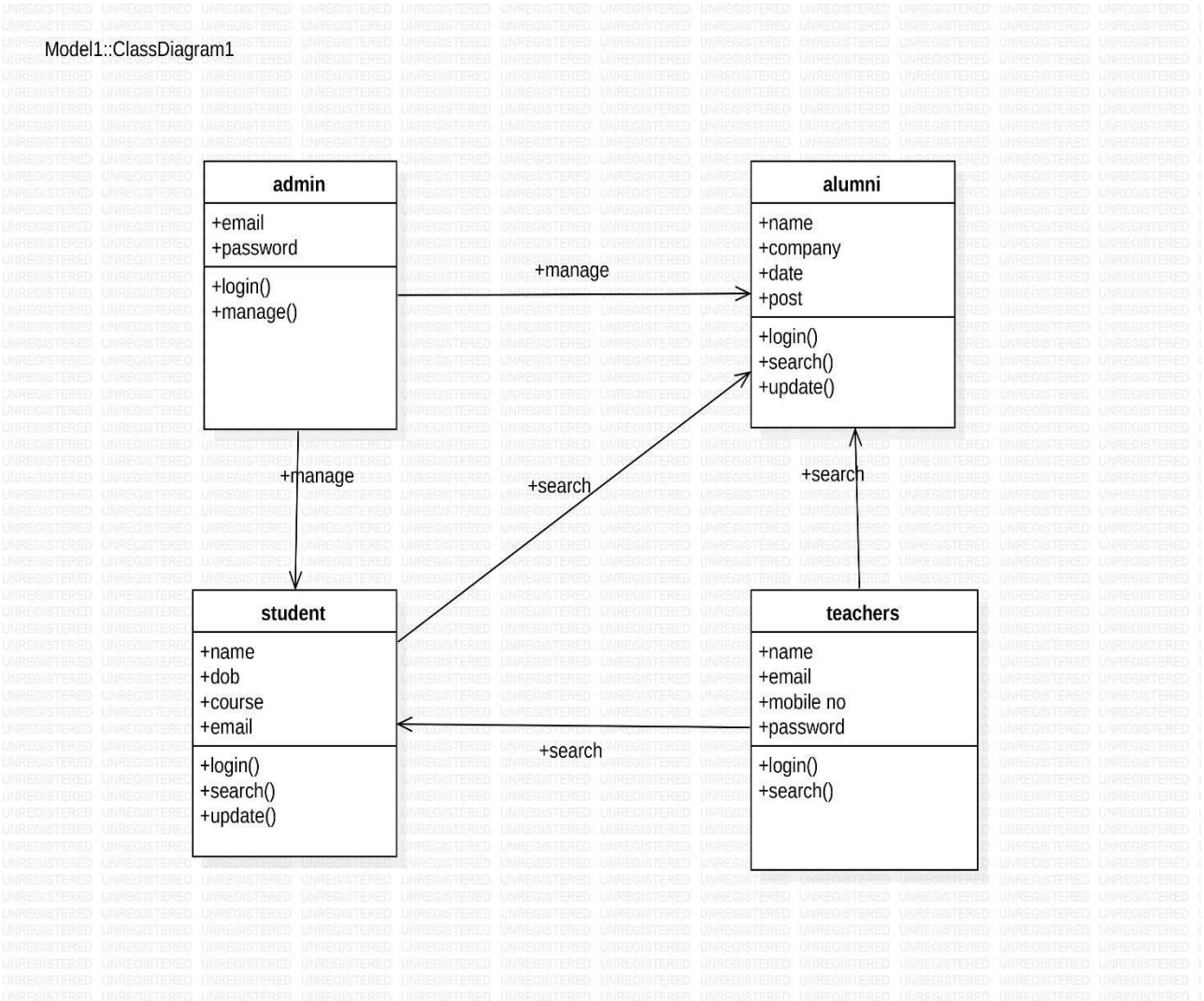
Dart is used to write the whole designing and operational code. Fire Database is used for backend maintenance.

SYSTEM DESIGN

The section describes the system study, analysis, design strengths and weaknesses of the current system, Contest level diagrams, Entity Relationship Diagram, Architectural design. After interpretation of the data, tables were drawn and process of data determined to guide the researcher of the implementation stage of the project.

The tools, which were employed during this methodology stage, where mainly tables, Data Flow Diagrams and Entity Relationship Diagrams. The design ensures that only allows authorized users to access the systems information.

CLASS DIAGRAM



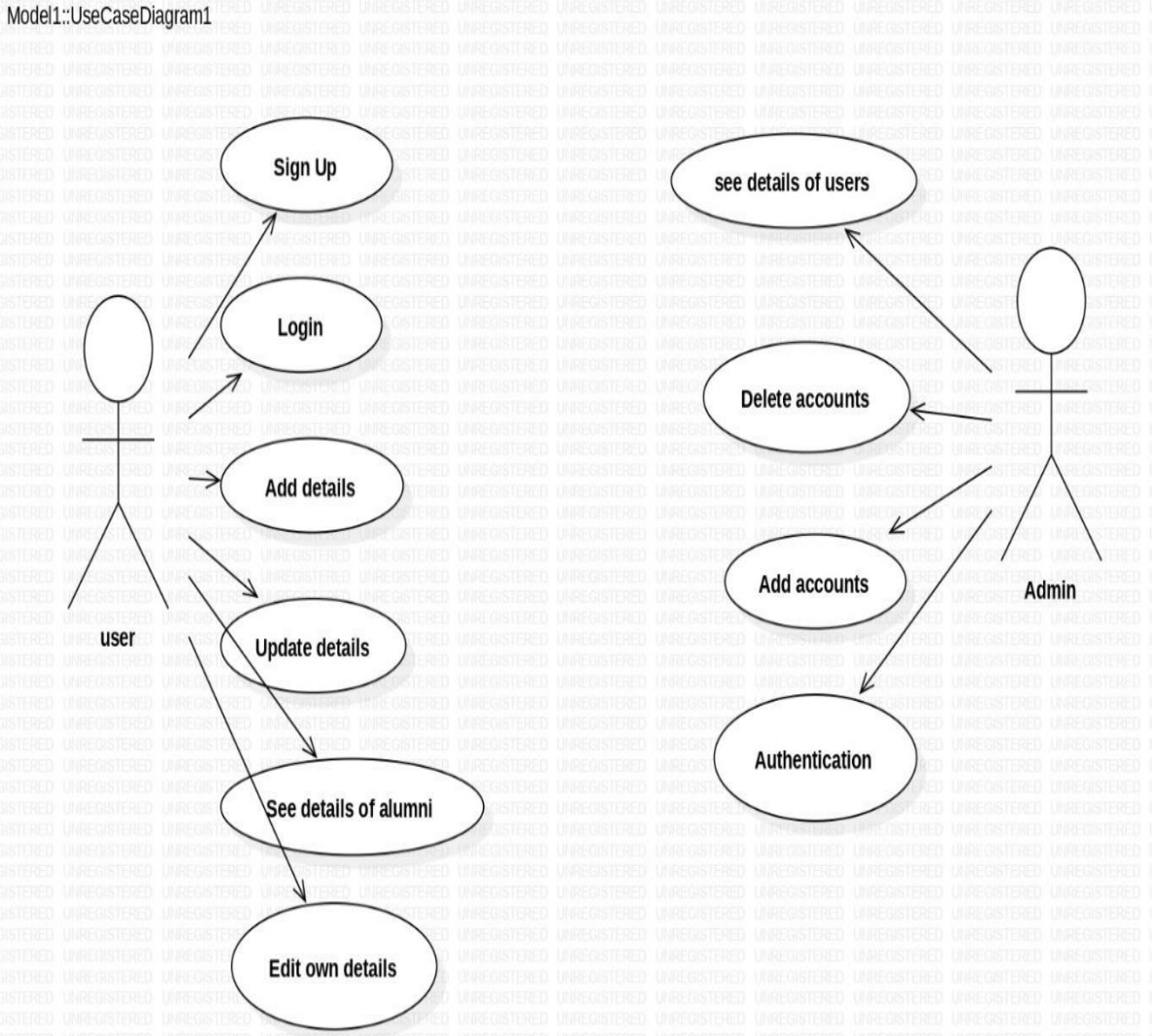
USE CASE DIAGRAM

Use-case diagrams model the behavior of a system and help to capture the requirements of the system. Use-case diagrams describe the high-level functions and scope of a system. These diagrams also identify the interactions between the system and its actors.

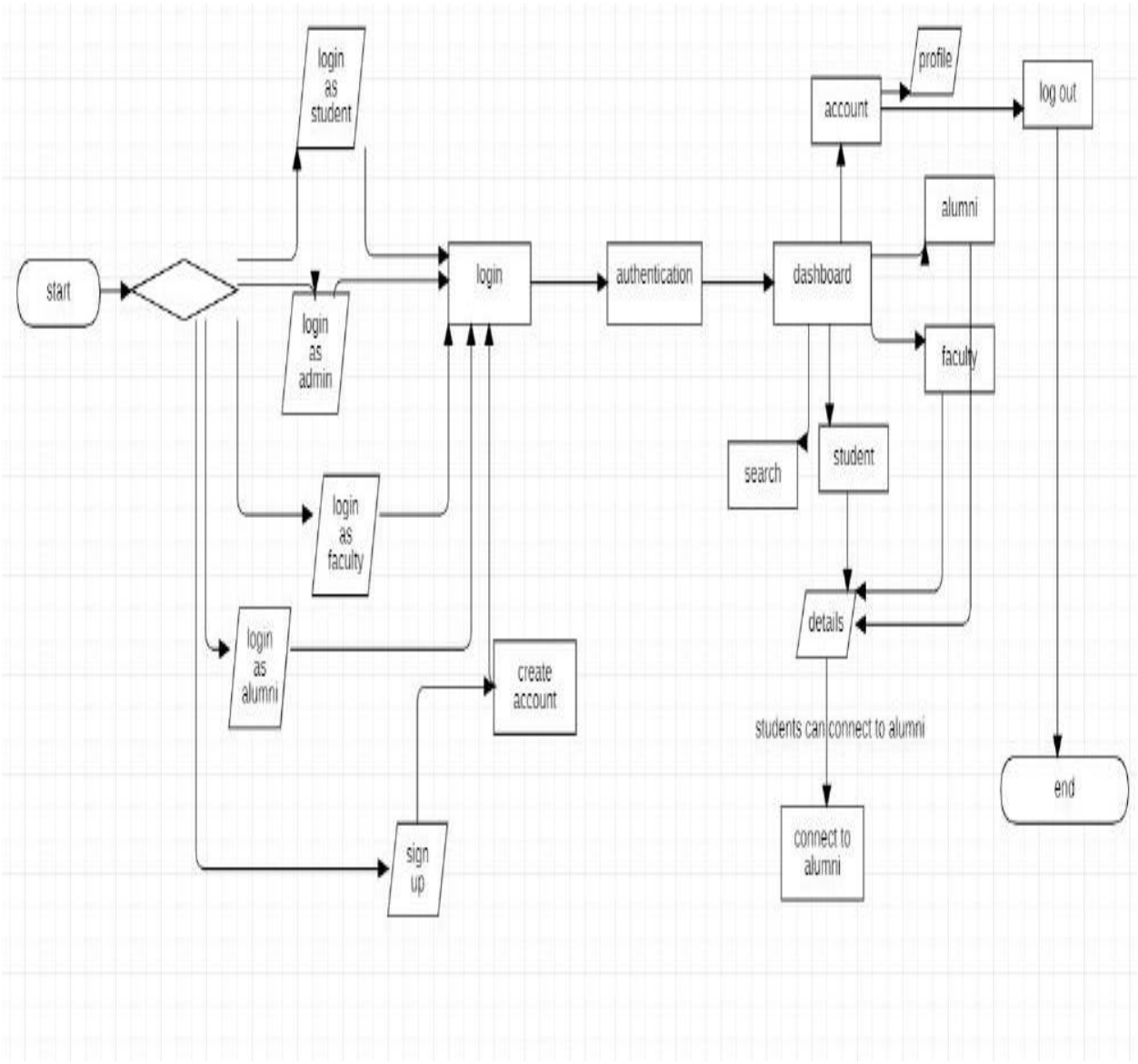
A use case diagram is used to represent the dynamic behavior of a system. It encapsulates the system's functionality by incorporating use cases, actors, and their relationships. It models the tasks, services, and functions required by a system/subsystem of an application. It depicts the high-level functionality of a system and also tells how the user handles a system.

Purposes of a use case diagram given below:

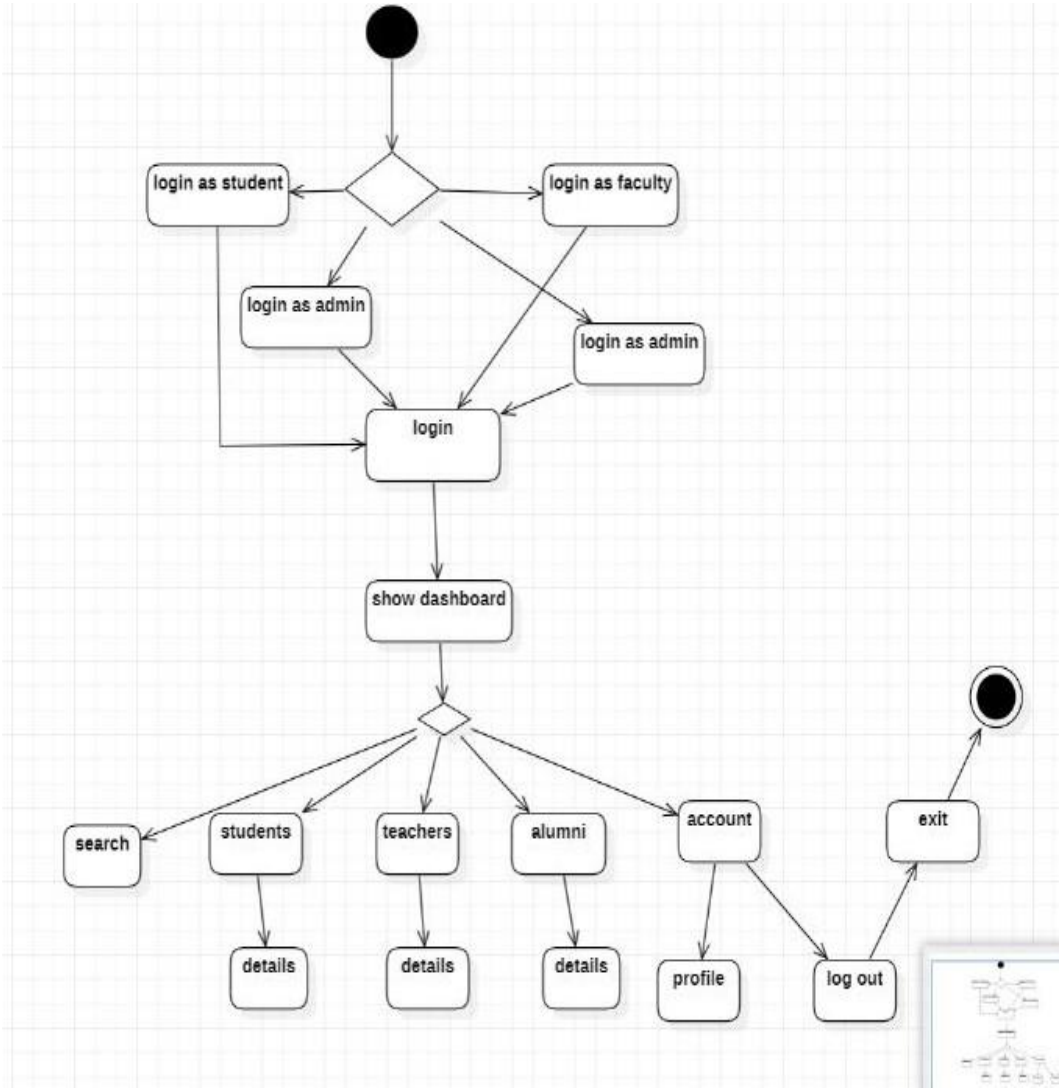
1. It gathers the system's needs.
2. It depicts the external view of the system.
3. It recognizes the internal as well as external factors that influence the system.
4. It represents the interaction between the actors.


Model1::UseCaseDiagram1
Sign Up
Login
Add details
Update details
See details of alumni
Edit own details
user
see details of users
Delete accounts
Add accounts
Authentication
Admin

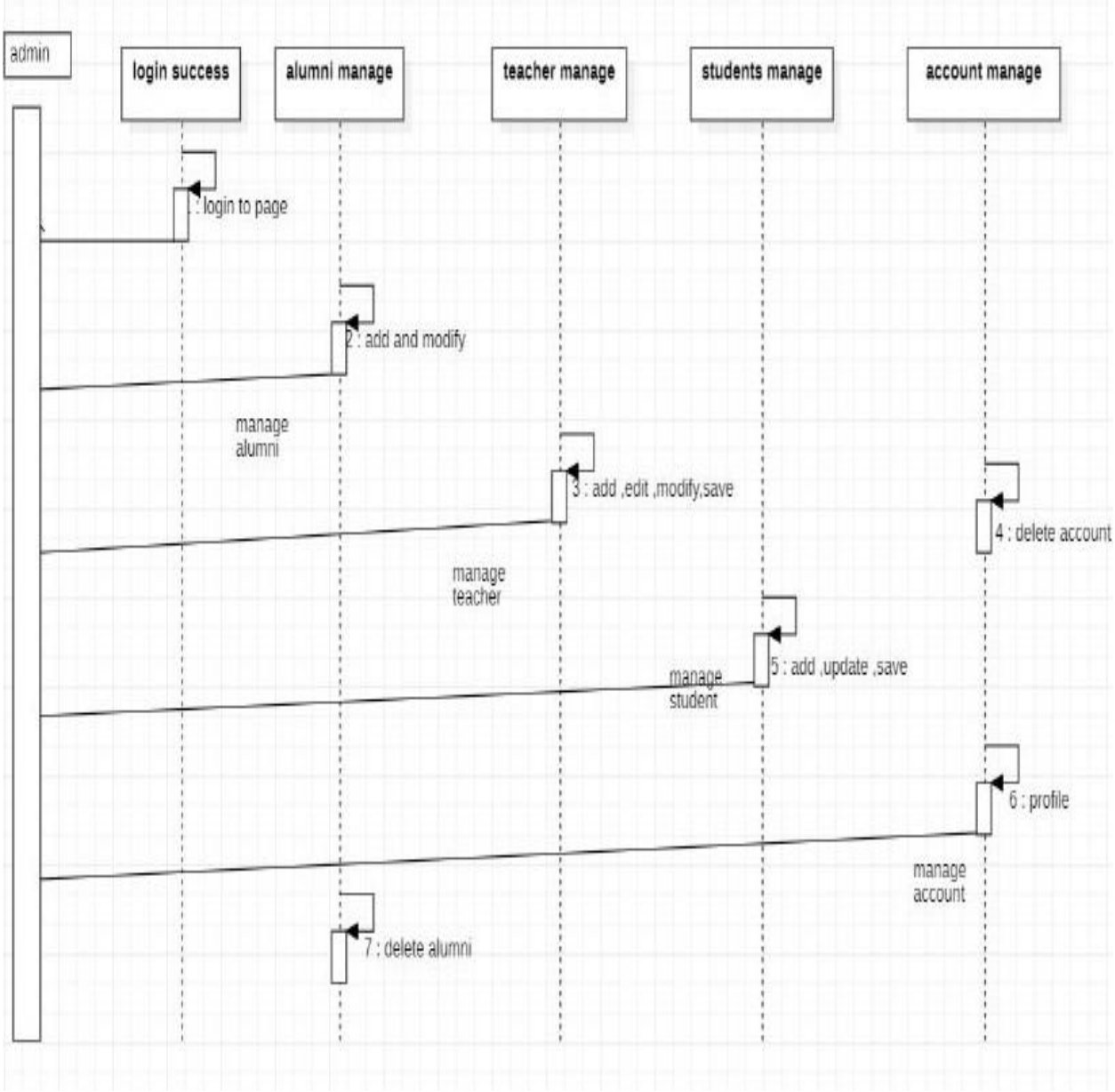
Process Flow Chart:



Activity Diagram:



Sequence Diagram:



DATA DICTIONARY

Data validation:

Procedures are designed to detect errors in data at a lower level of detail. Data validations have been integrated in the system in almost every area where there is a possibility for the user to commit errors. The system will not recognize invalid data.

Whenever an invalid data is keyed in, the system immediately prompts the user and the user has to again key in the data and the system will accept the data only if the data is correct. Validations have been integrated where necessary.

The system is designed to be a user friendly one. In other words the system has been designed to communicate effectively with the user. The system has been designed with pop-up menus.

Different Type Of validation:

- Data type validation
- Range and constraint validation
- Code and Cross-reference validation
- Structured validation

CHAPTER 7: CODE

Code GitHub link: https://github.com/RajulSahu/alumni_app

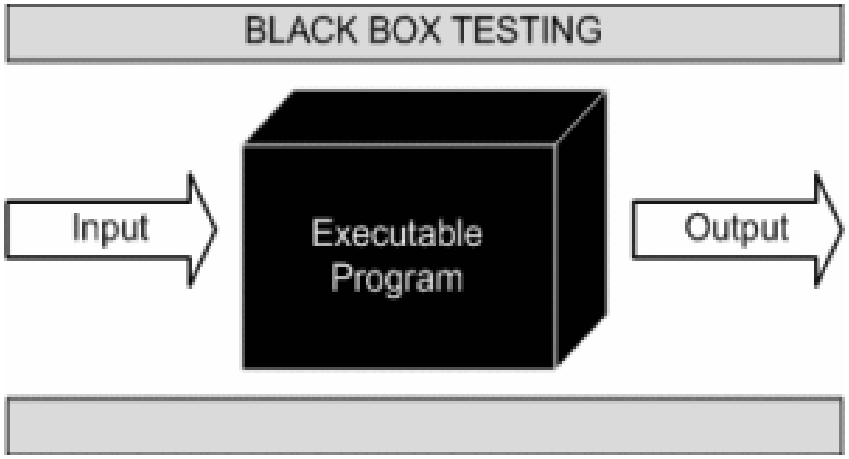
IMPLEMENTATION AND TESTING:

Black-Box Testing:

Black Box Testing, also known as Behavioural Testing, is a software testing method in which the internal structure/ design/ implementation of the item being tested is not known to the tester. These tests can be functional or non-functional, though usually functional.

This can be following way:

- Input interfacing
- Processing
- Output interfacing



This method is named so because the software program, in the eyes of the tester, is like a black box; inside which one cannot see. This method attempts to find errors in the following categories:

- Incorrect or missing functions
- Interface errors
- Errors in data structures or external database access
- Behaviour or performance errors

- Initialization and termination errors.

White-Box Testing:

White Box Testing ,also known as Clear Box Testing, Open Box Testing, Glass Box Testing, Transparent Box Testing, Code-Based Testing or Structural Testing is a software testing method in which the internal structure/ design/ implementation of the item being tested is known to the tester.

The tester chooses inputs to exercise paths through the code and determines the appropriate outputs. Programming know-how and the implementation knowledge is essential.

White box testing is testing beyond the user interface and into the nitty-gritty of a system.
This method is named so because the software program, in the eyes of the tester, is like a white/ transparent box; inside which one clearly sees.

Limitations and Future Application of the Project

Futures Enhancement:

- The app can be enhanced in the future by adding the functionality of communicating through messages , which will help students to talk to their pass out seniors and resolve their queries and take guidance from them if they feel like.

- The app can be further customized in the future as per the needs of any organization or the university to be used there for the same purpose.

- Automating techniques to some extent can increase feasibility in order to increase functionality in the further development of the app. This can also include in updating the user interface to latest standards and keeping it agile to bring in faster changes with less modification in the original app and still getting valuable outcomes.

- Further, other facilities can be added in the app such as –
  Job postings can be automatized using tools such as web scrapping which are available to scrap data from other websites.

Limitation :

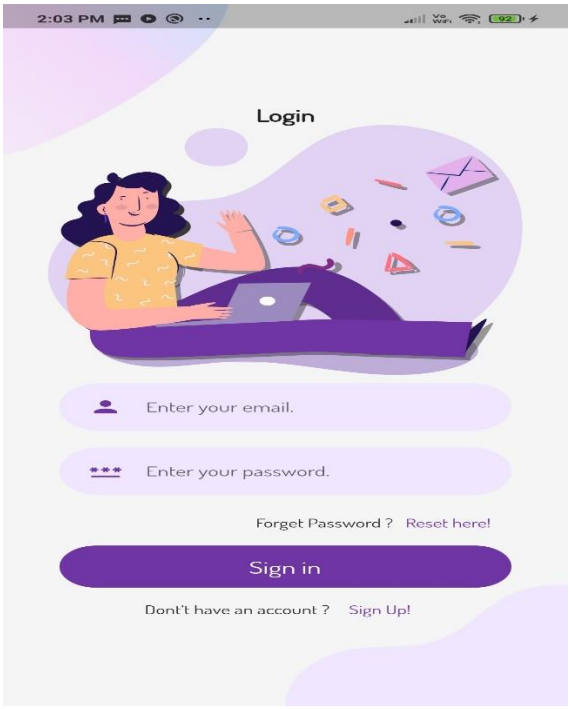
- We currently don’t have the facility to of communicating through messages.
- Multiple profiles of a user can be created using different e-mails.

SCREEN SNAPSHOTS

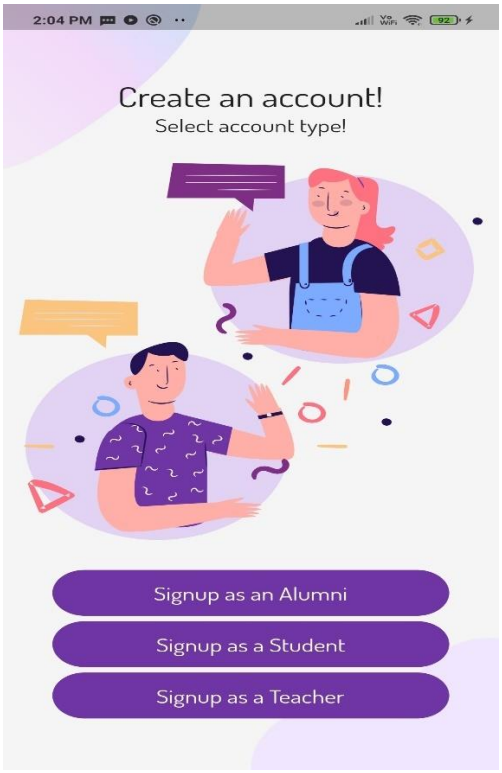
The developed app and its working is shown using the snapshots of the system step by step.

1. **Splash screen:**

2. **Login page:**

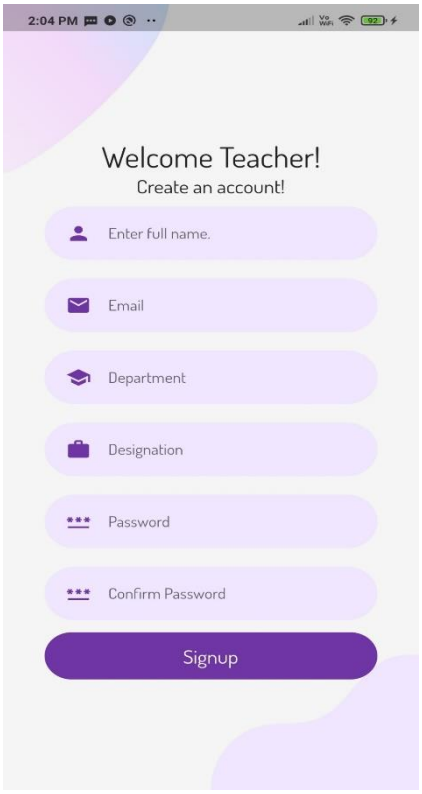


3. Sing-up Page

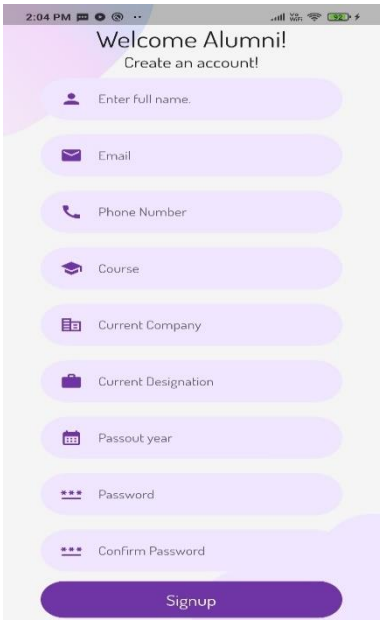


5. Sing-Up page for Student

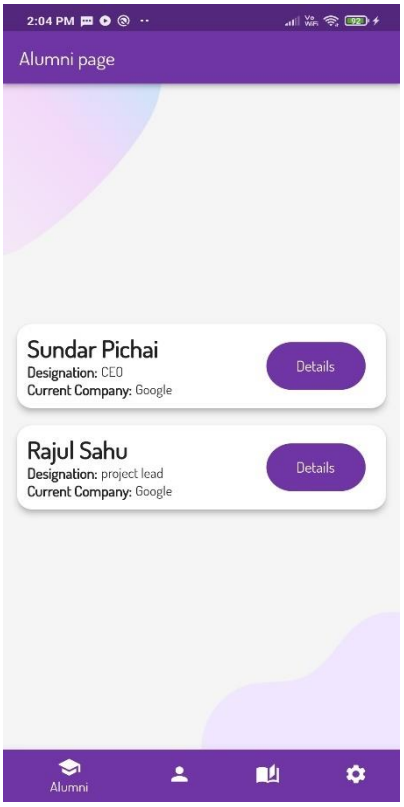
6. Sing-Up Page for Teachers



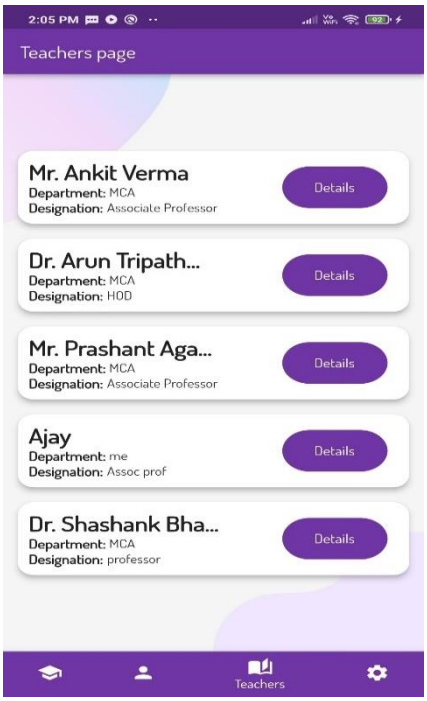
7. Sing-Up Page for Alumni



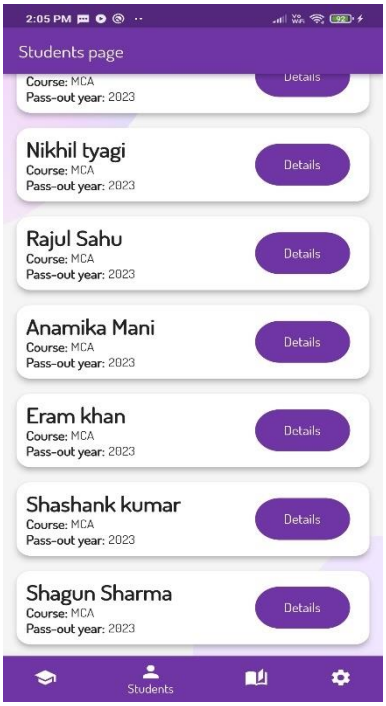
8. Alumni Page



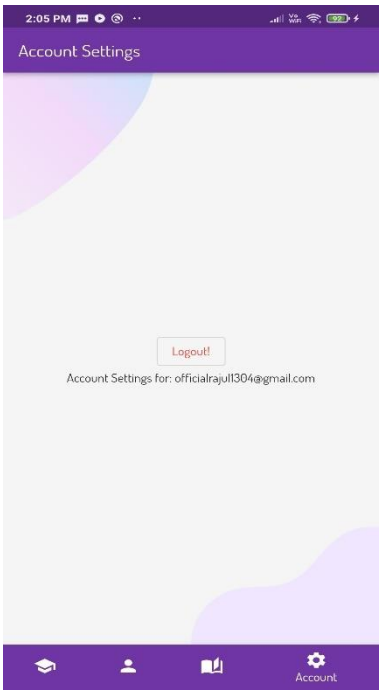
9. Teachers Page



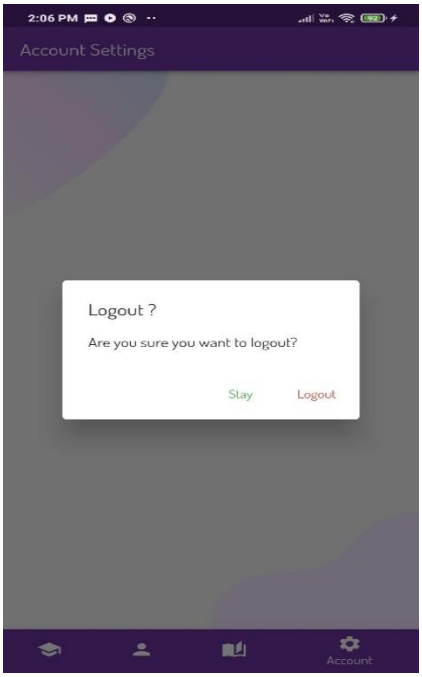
10. Student Page



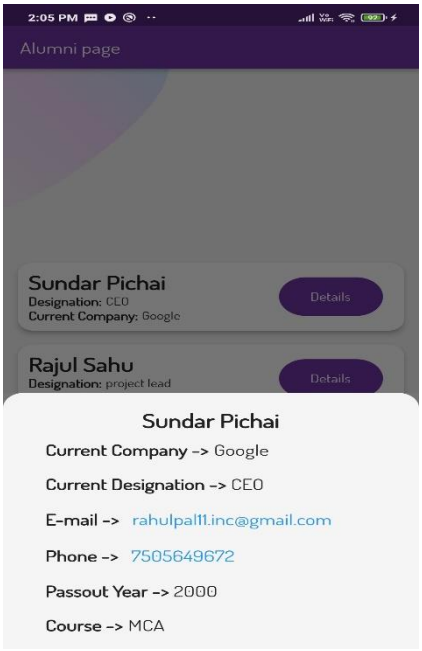
11. Setting Page



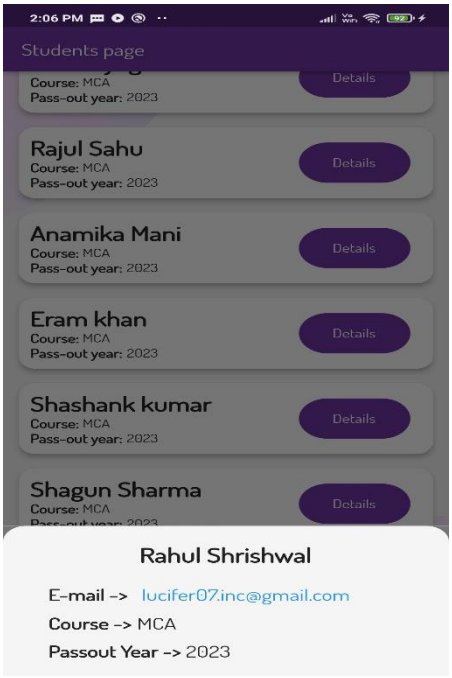
12. Logout Page



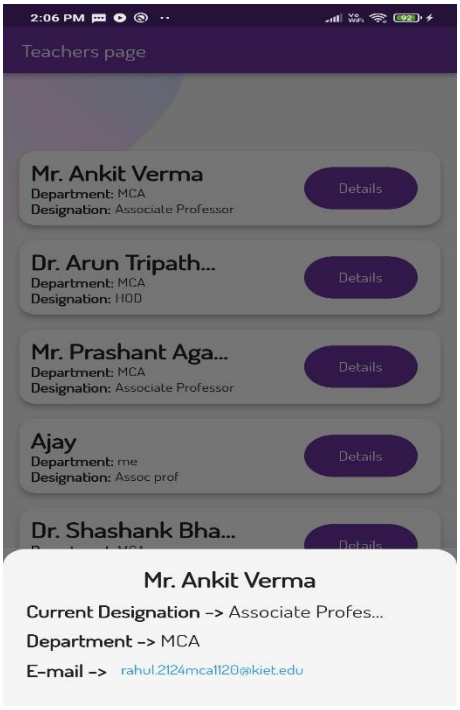
13. Alumni Details



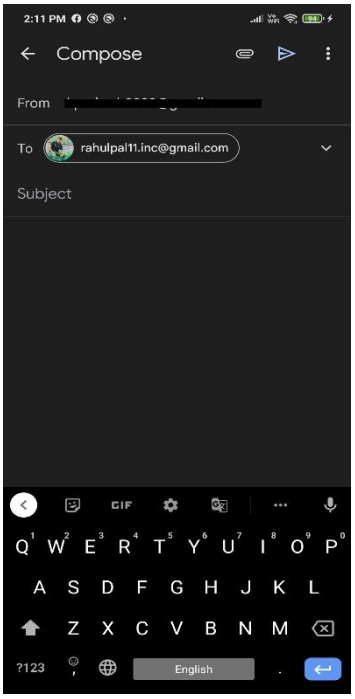
14. Student Details



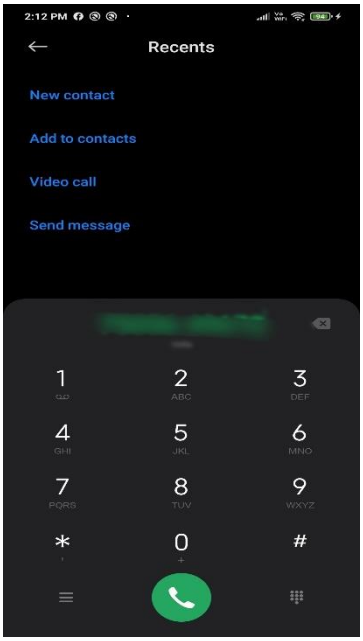
15. Teacher Details



16. Page after click on Mail



17. Page after we click on Number



CHAPTER 8: CONCLUSION

The project entitled KIET Alumni App was completed successfully. The system has been developed with much care and free of errors and at the same time it is efficient and less time consuming. Alumni app is very important for any college, it will increase interaction, knowledge sharing and networking among alumni students. It will provide a better platform to the college for storing the complete recruitment information of all the batches at a single place.

The entire system is secured. Also, the project helped us to develop an understanding about the development phases of a project and software development life cycle. We learned how to test different features of a project. This project has given us great satisfaction in having designed an application which can be implemented easily in other organizations by simple modifications. However, it was very challenging learning and developing an application using a new technology.

CHAPTER 9: References

1. Gather Flutter documentation from –

   *https://docs.flutter.dev/resources/faq

   * https://fluttercompletereference.com/
2. Youtube
3. Github
4. Flutter Packages- https://pub.dev/
5. Gather firebase knowledge from –

   * https://docs.flutter.dev/development/data-and-backend/firebase

   *https://firebase.google.com/docs?gclid=Cj0KCQiAyMKbBhD1ARIsANs7rEEM0YJ7UJ7bSRVBR6r87kbCA4I7DhcHvbfz-DdAumPCcLs8ebxYcEwaAkiVEALw_wcB&gclsrc=aw.ds