COMSATS University, Islamabad Pakistan

KHAADIM

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Bachelor of Science in software engineering (2017-2021)

The candidate confirms that the work submitted is their own and appropriate credit has been given where reference has been made to the work of others.

DECLARATION

We hereby declare that this application, neither whole nor as a part has been copied out from any source. It is declared that we have developed this app and accompanied report entirely based on our personal efforts. If any part of the project is proved to be copied out from any source or found to be reproduction of some other. We will stand by the consequences. No Portion of the work presented has been submitted of any application for any other degree or qualification of this or any other university or institute of learning.

Fareeha Shabbir

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CERTIFICATE OF APPROVAL

It is to certify that the final year project of BS (CS) "Vote for Me" was developed by **Fareeha Shabbir (CUI/FA17-BCS-103/ATK)** and **Kiran Nisa (CUI/FA17-BCS-074/ATK)** under the supervision of "Mr. Armughan Ali" and that in (their/his/her) opinion; it is fully adequate, in scope and quality for the degree of Bachelors of Science in Computer Sciences.

Supervisor

External Examiner

Head of Department

(Department of Computer Science)

Executive Summary

Nations prosper when their reigns are in the hands of rightful, dedicated and devoted people. It is the government that is responsible for the providing the direction and fodder for the country to excel and develop. In a democratic country like our own, government is elected by the people and every citizen is responsible for voting in favour of candidates that they believe are most suitable for the prosperity and development of the country. This application is our contribution in the process of identifying the most suitable electoral candidates so that the people can make the right choice at the time of elections. The name “Khaadim” clearly depicts that our application is built with objective of serving the society. This is an android based app that would provide a platform where the politicians can share their ideology and mandate with the public (awam) and also become aware of the problems faced by the awam. This application builds a bridge between the candidates and the public and also help the candidates reach out to the public and execute their online electoral campaign.

In this era of advancement and technology, internet and android devices had become a commodity. We have developed an android app so that it can be widely used by the masses and can revolutionize the conventional process of election campaigns. Through this app awam can easily and more affectively share their grievances with the candidates and reach out to them. The candidates can also share their mandate and vision with the people and become aware of the problems in their constituency. This app can also reduce the need of congregation (jalsa/jaloos) and also very helpful in creating political awareness among the people outside the country.

Acknowledgement

By the grace of Allah almighty; who is the most gracious and most merciful by which we are able to complete our project. We are thankful to Allah almighty who make us able to complete our task timely. All praises are for Him.

First, we would like to express profound tribute to our parents who always motivate us and never let us down morally and financially. What we are now is only due to their prayers.

“Mr Armughan Ali” is a continuous source of motivation, guidance and inspiration. He is a complete institution, our trainer; our supervisor has guided us in a way that we learnt many things. We are grateful to him for making us able to achieve our goal.

We are grateful to our institution who gave us opportunity to complete our task. Some special thanks to those who are always there for boasting up, their support and their prayers who encouraged us at certain phases.

May Allah Almighty keep providing us with all the resources and the guidance to serve people. Ameen.

Kiran Nisa

Fareeha Shabbir

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Chapter 1
Introduction

1. Introduction:

In this digital era, world is moving towards automation of processes and activities for achieving more efficient and transparent outcomes. In our application "Khaadim" we have automated the process of election campaign for reducing the gap between the politicians and the public. This app bridges the former and the later thus building a strong and more reliable bond between the two. As we know that governments are built on promises and commitments, politicians use social media, electronic and print media for reaching out to the public along with the conventional jalsa/jaloos but these methods do not allow general public to communicate their grievances to the politicians more effectively. Our app has provided a platform that allows the politicians to conduct their electronic election campaign and also be aware of the problems faced by the people of their constituency. This app allows the public to inform the politicians about their problems and also chat with them in person for building credible relation. Candidates can share their mandate and ideology with the people through this app and also get an idea about their popularity among the public.

In our app, we have two main users **Politicians** (candidates) and **Public** (awam). Politician will be able to post all information and details about their election campaign such as manifesto, procession details, their political achievements and other important announcements. User will see their posts, comment against them, give feedback by liking and disliking posts, follow the politicians and also get important notifications.

Every politician will have their separate profile which includes general political affiliation and political background along with education and contribution towards the wellbeing of the society. This information will include sectored number, seat number, constituency, current post, achievements, tenure etc. The app also uses recommendation system, we will take feedback from people and will suggest them the rating wise best politician for respective area. People will search politician of their respective area. There will 3 panels, one for admin, one for user and one for politician. We will use Machine Learning algorithms for classification of data such as differentiation of positive and negative reviews. Text Extraction algorithm for extracting keywords from the comments of users and recommendations would be made on the basis of positive reviews.

1.1 Brief:

In short, the main aim of this project is to provide a platform for politicians where they will easily run their campaign, share their motive and manifesto, easily earn good reputation by sharing their achievements. It will also help them to save their time and efforts as well as expenses. On the user end, this app will help them to see the activities of politicians their ranking and popularity based on their achievements and reputation. User will be able to select their potential candidate who they

should vote for. This classification is done using machine learning algorithms such as Text extraction algorithms and data classifiers.

1.2 Relevance to Course Modules:

1.2.1 **Report Writing Skills (RWS):** through which we are able to write our documentation, able to know how to select format and structure to meet formal needs, ensuring that document sequence is logical, meaningful and presentable. Presenting information differently through text, graphs, tables and diagrams.

1.2.2 Mobile App development (MAD): is the core subject of CS regarding the development of mobile apps through which we are able to design and develop this app. This course helps us to cope up with the various issue and features of app development.

1.2.3 Machine Learning (ML): is one of the main subject through which we are able to apply different techniques and algorithms to classify the data, extract required results from this classification and achieve accuracy.

1.2.4 **Human computer interaction (HCI):** is a multidisciplinary field of study that focuses on the design of computer and technology and especially interaction between human and computers. The design principles to improve human interaction with computer. Through this subject, we are able to make interactive and user friendly interface.

1.2.5 **Software engineering (SE1 and SE2):** helps us to start our final year project by 5 phases of software engineering i.e. requirement gathering, design, implementation, testing and maintenance. Different types of software models we have learn helps to decide which software model is to be used in our project according to our requirements.eg water fall, agile, spiral etc.

1.2.6 **Software Design and Architecture** enables us to learn the Unified Modeling Language Diagrams. How to design a software system based on requirement. This course helps in our project that how to design a system. We learn following diagram from this course.

- Activity Diagram
- Use Case Diagram
- Sequence Diagram
- Class Diagram
- Communication Diagram

1.2.7 **Database Management System** is one of the core course of our program that we have studied. This course helps in interacting with the relational databases that are used by most

of the applications now a days. It helps in understanding queries, joins, constraints, validations, stored procedures, function etc. These all are the techniques that we have used in this project.

1.3 Motivation and Scope:

The main reason behind the development of this app is to play a pivotal role in adding value to the society in some way. We identified that the process of political campaign can be improved by automating it that would not only facilitate the candidates by saving their money and time but would also help the general public to identify the potential candidates to cast vote for. This app would reduce the need for the conventional gatherings like jalsa/jaloos and would also enable the candidates to reach out to wide audience and present their manifesto and ideology in a better and more effective way. It is not easy for people to access politicians and inform them about their problems in person but this app also helps them in recording their grievances and getting immediate reply. This app makes the election campaign process more transparent and hassle free. Political congregations are always prone to mishaps and terrorism so this app also reduces probability of such unfortunate events by providing an electronic platform for reaching out to the public.

1.4 Literature review:

Since the beginning of time, politics remains as an interesting game based on lies, over promises and deceit but literally it is not a game for those who have the motivation and devotion to serve their society and make a positive difference. It is a responsibility that what you are representing yourself as, what you are saying to the public, how you will manage and fulfill the requirements of public to build their trust on you and how you will handle the problems and issues raised by other political parties. As it is era of technology and almost everything is being held online so we came up with an idea that there should be an online political forum for candidates where they can share their news, progress, activities and achievements to earn good reputation and they could convince the users to vote for them. Following are some other apps related to our project but these all are European apps and are not aimed at facilitating the election campaigns and creating a liaison between the candidates and the public..

- Political Campaign Strategy:
  Political campaign strategy app's goal is to help political parties plan and execute their campaigns, while you can also learn quite a bit about campaigning from this app. The app contains a campaign plan and strategy, candidate workshop, political quotes, and number of other aspects.

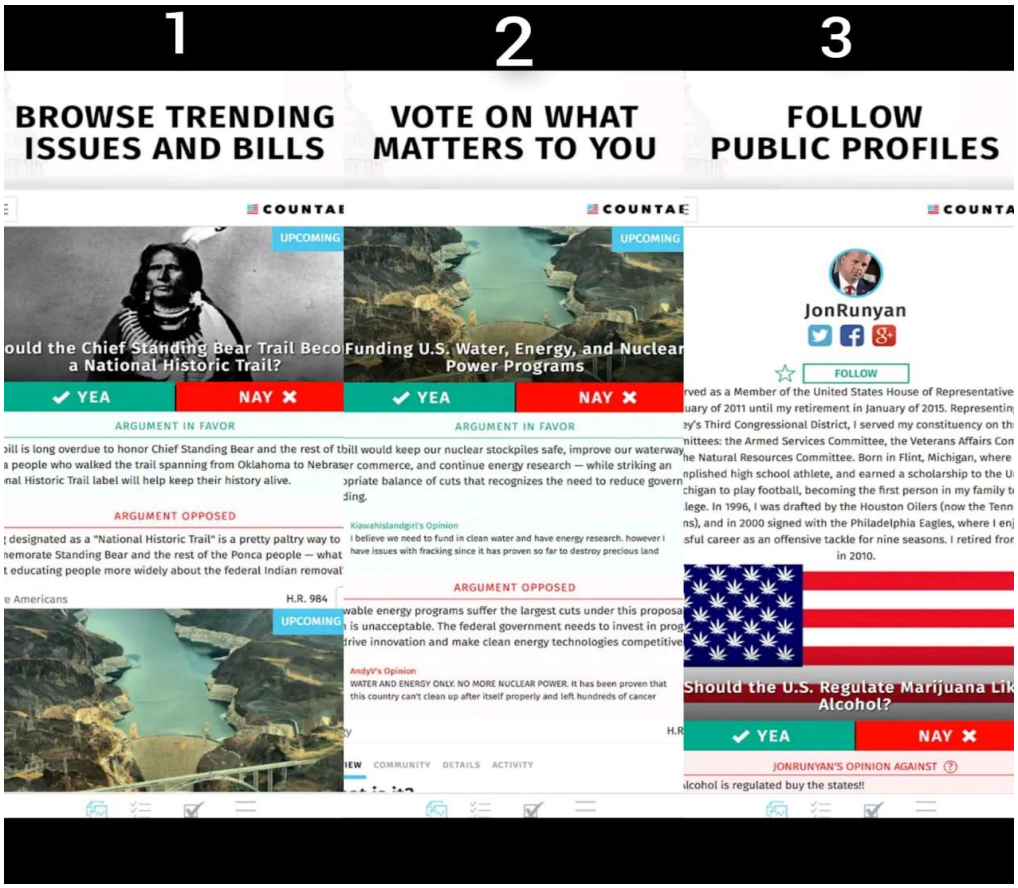
Figure 1: Political Camping Strategy

Services:

- Campaigning
- Campaign Plan and Strategy
- Ontario Campaign Plan
- Candidate workshop
- Start A Campaign
- Political statements display
- Famous political statements

- Countable:
  This app brings you short summaries of House and senate bills and explains how all that impacts you. This app will also reveal how much the legislation costs while you can also join the debate available inside the app. You can vote on bills by clicking yes or no.

Figure 2: Countable



Services:

- Make up your own mind: Read short, unbiased summaries of breaking news, upcoming and active bills and trending topics. Receives notification about upcoming votes in congress.
- Preparation for next Election: Use voter center, get register, find polling station, and get all information about Election Day.
- Hold your Replies Accountable: how to vote by clicking “yea” or “Nay”. Add message for your replies
- What’s your case: start your own rally and community into taking action. Share your voice with community.

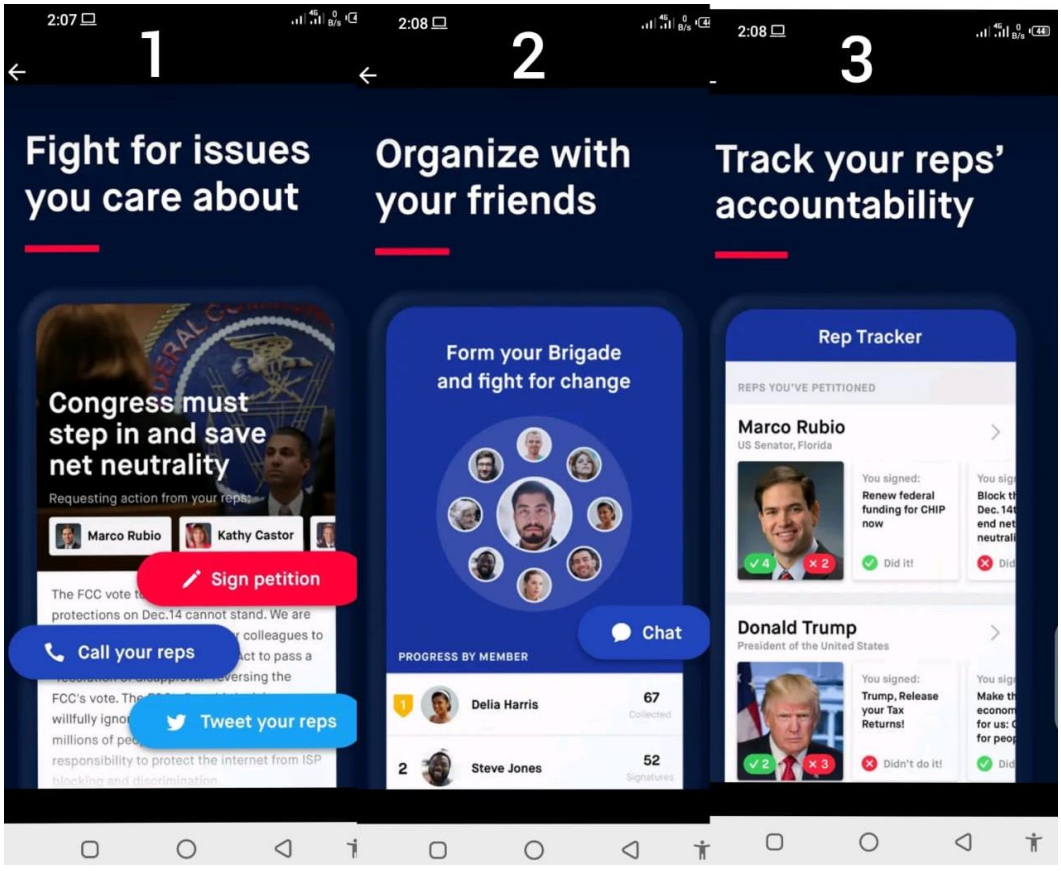
- Icitizen:

  This app allows you to vote on issues that are affecting your community and government. This app's goal is to connect you to your community and elected officials, and in the end allows you to weigh in on polls and issued that you care about.

- Brigade:

  Brigade is an app that allows you to state your opinion on various subjects from taxes to climate change, while you can also see where your friend stand on some issues as well. This app will also help you stay informed on what the congress is and is not doing while you can sign various petitions.

Figure 3: Brigade



Services:

- Form your opinion on issues: Take notice on important issues form taxes to climate change, see what is opinion of your friend about it, get recommendations and updates from campaigning leaders.

- Sign petition and deliver them directly on twitter, share actions and campaign updates with your network to spread the word.

- Politicio:

POLITICO was once a really popular politics app, but it hasn't been updated for quite a while now, and has managed to induce really negative reviews over the last few months. Regardless, this can be a really good source for political news and views, although it's not precisely the latest in terms of the planning or features.

Figure 4: Politico

Services:

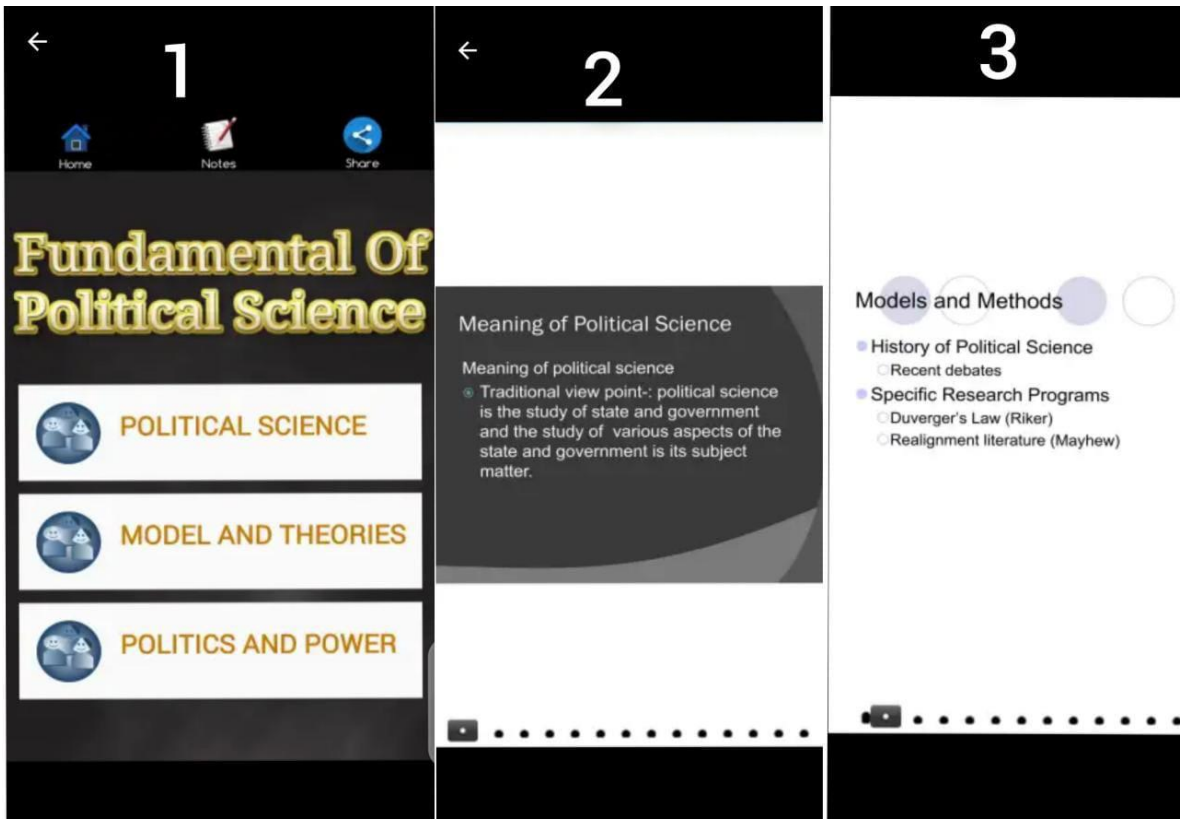
- It provides news about current affairs. You can read them, listen to them, and watch videos of these news. Its main feature is that it provide up-to-the-minute insight.
- Stay up to the speed on the political news driving the day with the POLITICO app.

- One World Politics:

One World Politics is an app that has been around for quite a while now, and despite that fact, it's only one review within the Google Play Store. This app basically throws various political news your way, from everywhere the globe, and you'll also discuss your views with others, as this app has quite a few features. This app is totally absolve to use.

- Fundamental of Politics:
  This application focuses on the speculation and practice of state and politics, and it does that on the local, state, national, and international levels, so there's quite an little bit of info you'll be able to get from this application. It can facilitate your better understand institutions, practices, and relations in politics. Truth be said, the look of this application isn't exactly modern, in any way, but the app is somewhat functional, and therefore the point is, you'll be able to access all that content without a controversy.

Figure5: Fundamental of Politics



Services:

- Traditional view point about politics
- Modern view point about politics

- Contains sub fields such as comparative politics, political economy, international relations, political theory, public administration.

1.5 Analysis from Literature Review:

Table 2: Analysis of literature

Application Name	Features	Weakness
Political Campaign strategy	To make and execute plans of their campaigning, planning strategy, political quotes.	These all apps are just like news bulletin where you find political news only. These are only the source of information and few among them provide the feature of feedback from user.
Countable	Provide summaries of House and Senate bills, explain their effect, allows to join debate.	
Icitizen	Allows to vote on several issues of community.	
Brigade	Allows to state opinion on any issue, tells where your friend lies on any issue, provide activities info of congress.	
Politicio	Source of US political news.	
One Word Politics	Throws various political news to your way from all over the globe.	
Fundamental of Politics	Provide know how of political institutes, activities at state, local, national and international level.	

1.5.1 Features of our App:

- Online campaigning platform
- Proper profile Management of candidate & Public User
  - Personal information
  - Educational background

    - Political background
    - Current Position
    - Designation
    - Party mandate
    - Manifesto
- Public Feedback
- Comments
- Popularity Index
- Searching of Candidates.
- Private Chat
- Live Video Address/Messages.

1.6 Methodology and lifecycle

Methodology selection is as important as first building block for development of application. After designing of this app, the methodology selected should be flexible so that it can be molded as user's interest changes or with any increase in features of application. For example introducing new fields and features. So, our project will follow agile process model.

1.6.1 Rational behind selected Methodology

We selected agile development as the possibilities of changes in system are high as user's interest and priorities may change or may be new features introduced later. This development focuses on user's satisfaction. In this case politicians are the main users who have to motivate the public to vote for them. So the main objective of this app is to provide an integrated communication platform where they will satisfy the public and motivate them.

Chapter 2
Problem Definition

2. Problem Definition

2.1 Problem Statement

Our political system is so faulty and adulterated that public has lost faith in it, the politicians have lost their credibility because of constant lies, over promising and deceit. Public does not trust their words and abstain from even casting votes at the time of election. This lack of trust can be attributed to the gap between the public and the politicians, dearth of forums where politicians can be held accountable for their acts and lies. Our app has reduced that gap and provided the required platform for the communication between awam and politicians.

Election campaign involves lots of money for advertisements and promotions, it requires great human effort and contribution from the political party workers (jhialaas) and is a cumbersome and daunting task. Our app has also resolved it since candidates can promote themselves and their party manifesto through this online forum.

During elections all candidates hold congregations (jalsa) for sharing and presenting their ideology and manifesto with the public. These gatherings not only cost money but also are prone to mishaps and terrorism. Our app enables the candidates to address the public online and share their vision with them.

2.2 Tools and Technologies:

Our project is aimed at delivering an android based platform that will help the politicians and provide them facility of online campaigning and motivate the users to vote. It will use recommendation system to make suggestions to vote for the most suitable candidate. It also provides the feature of profile management of politicians so that public can assess the candidates.

2.2.1 Tools:

- Android studio
- Firebase database
- MS Word
- MS PowerPoint
- Visio 2013
- Star UML
- pycharm
- Jupyter notebook

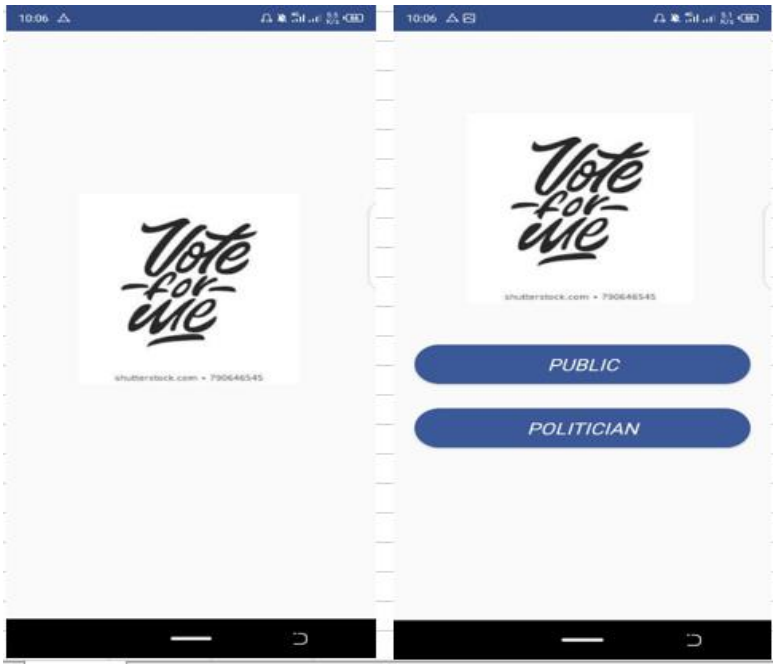
2.2.2 Languages:

- Java
- Python
- Javascript

2.3 Current System

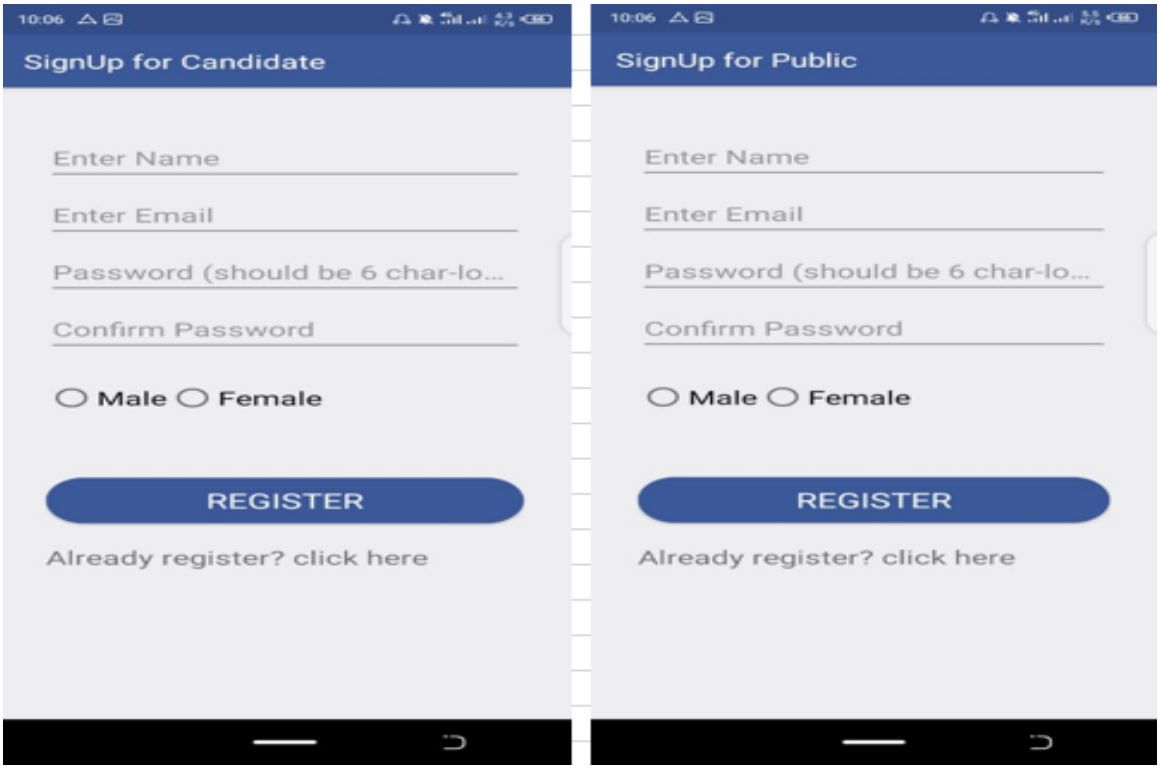
Splash screen, and start page:

Figure 6: splash screen and start page



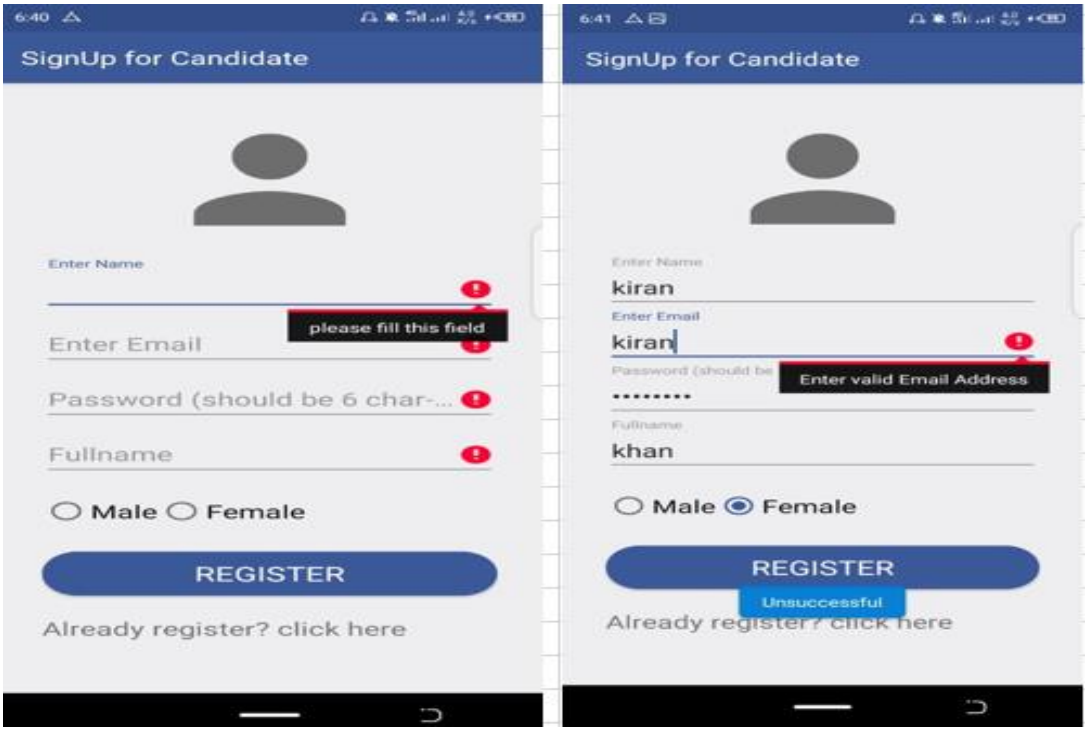
Signups:

Figure 7: signs-up



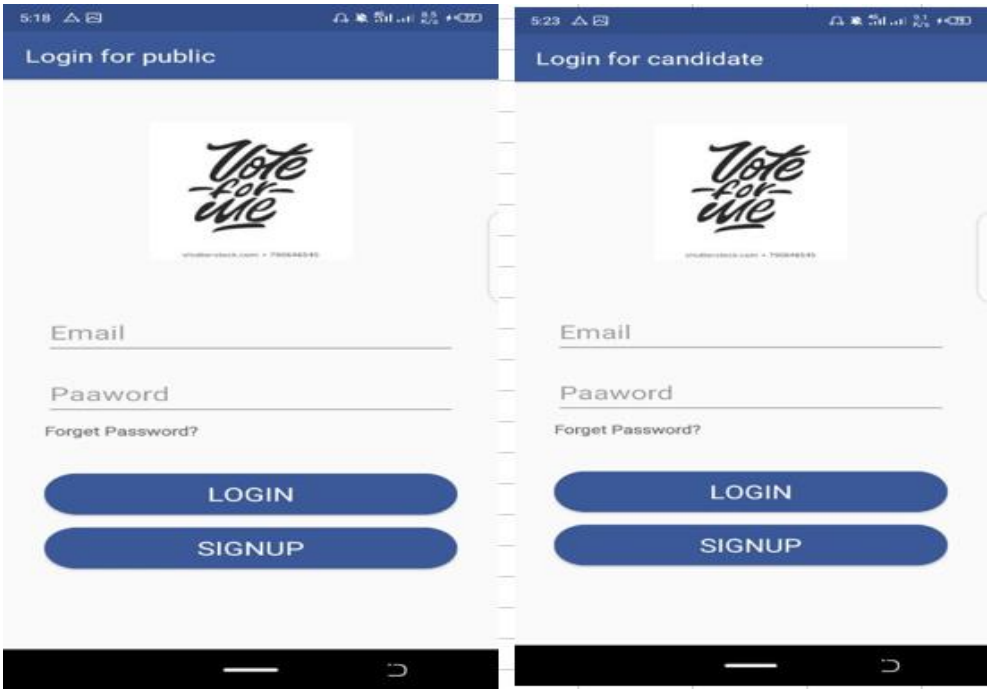
Email and Fields validation:

Figure 8: Email and Fields validation



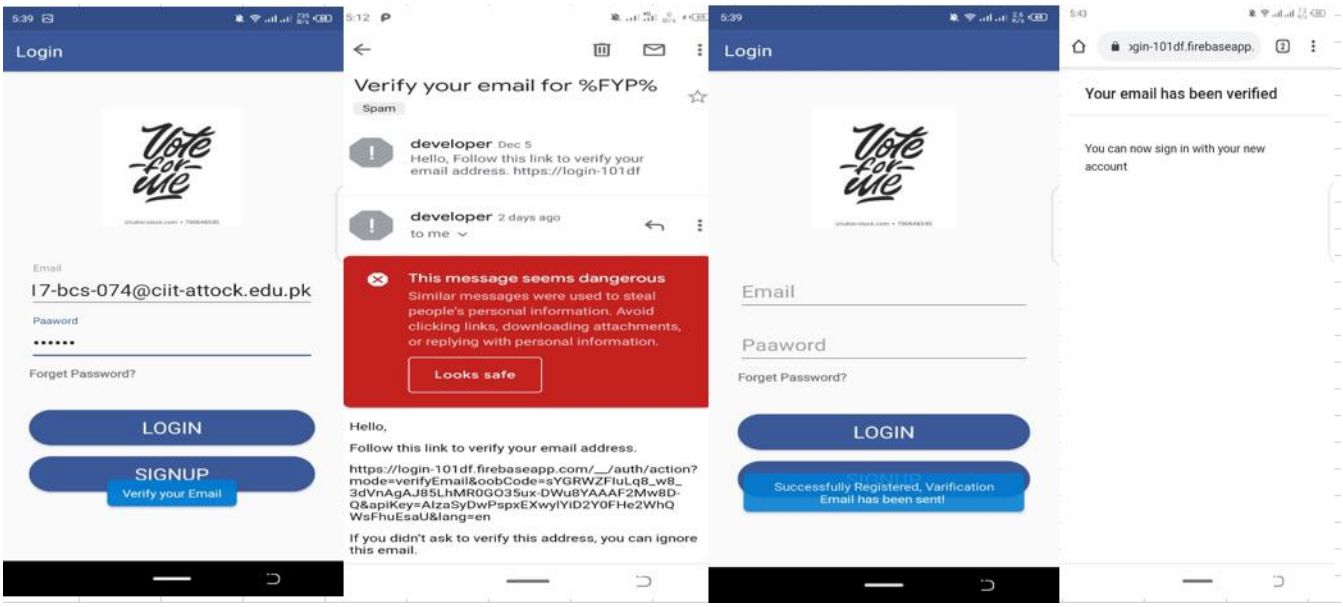
Logins:

Figure 9: Logins



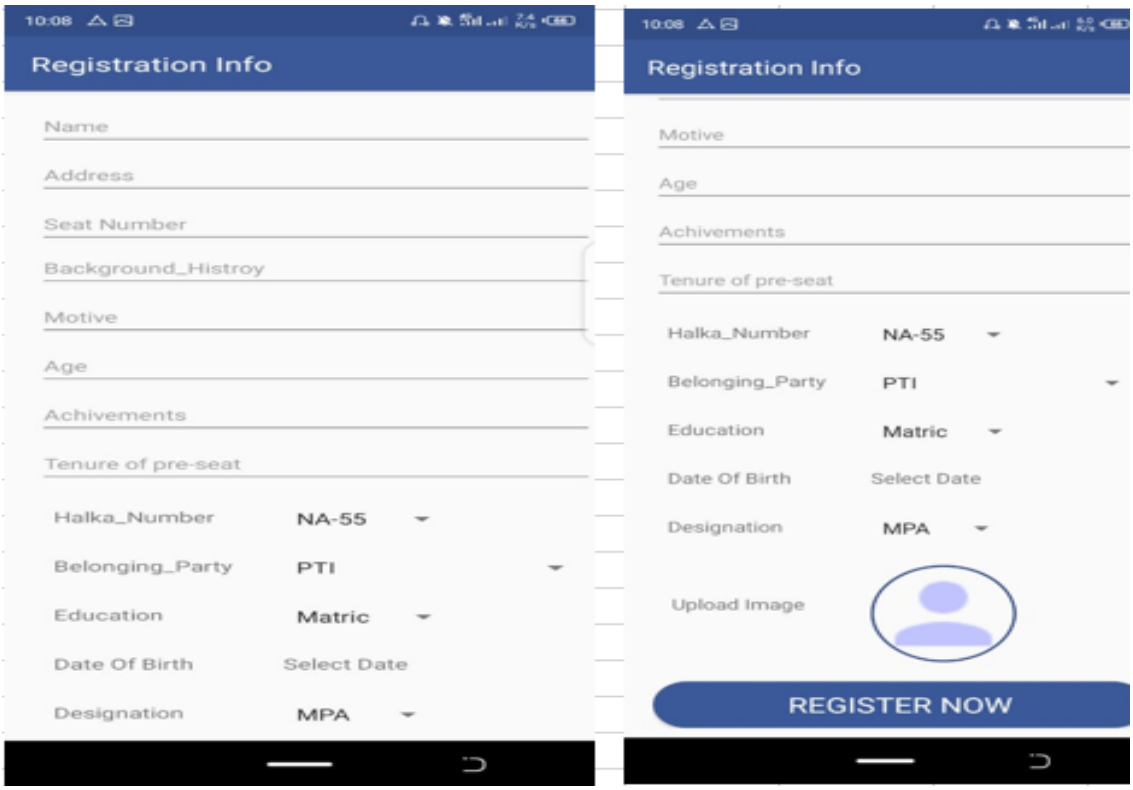
Verification of Email:

Figure 10: Verification of Email



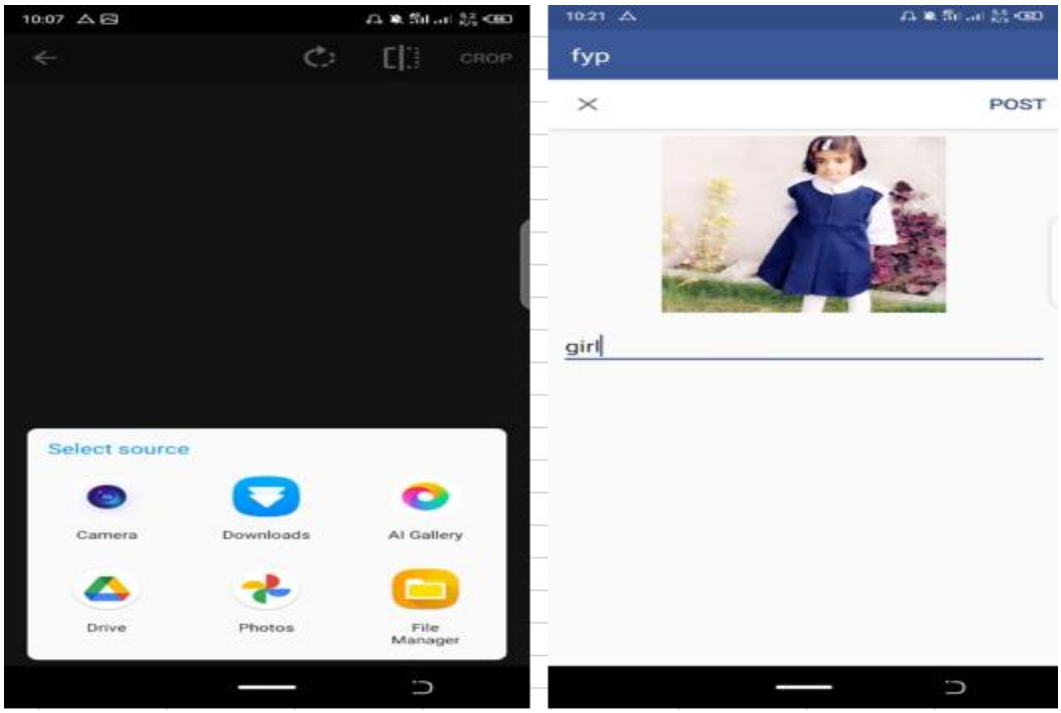
Candidate's Registration:

Figure 11: Candidate's Registration



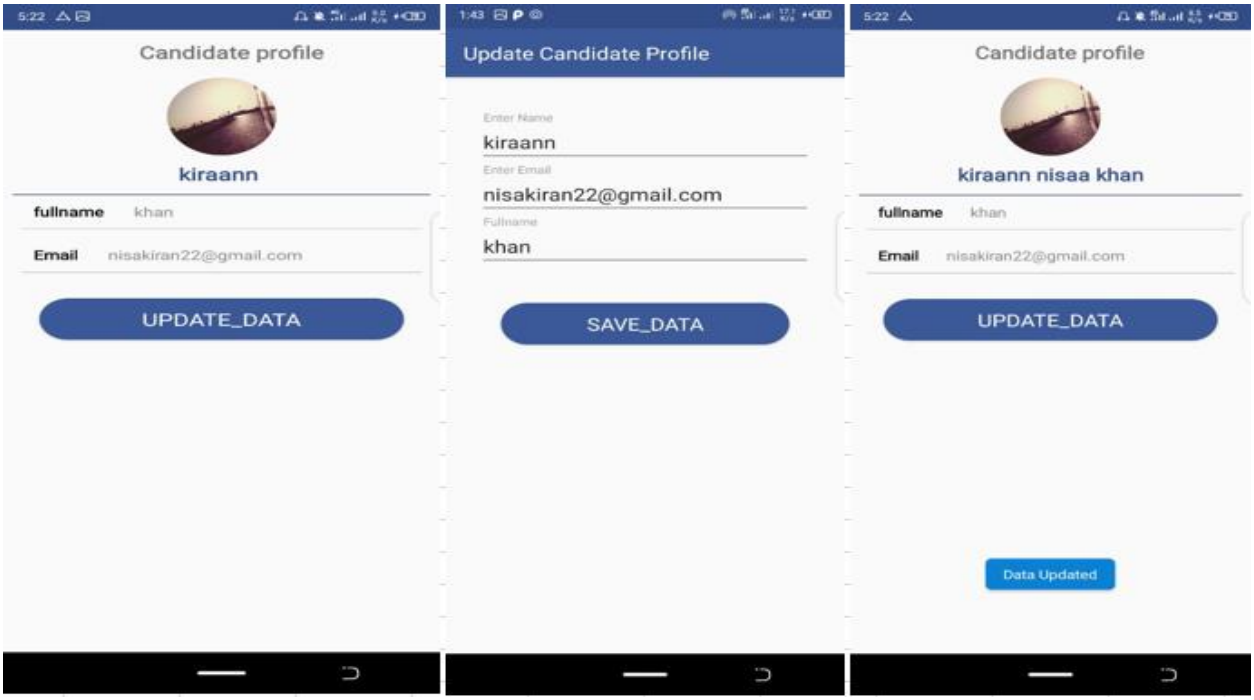
Post Something:

Figure12: Post something



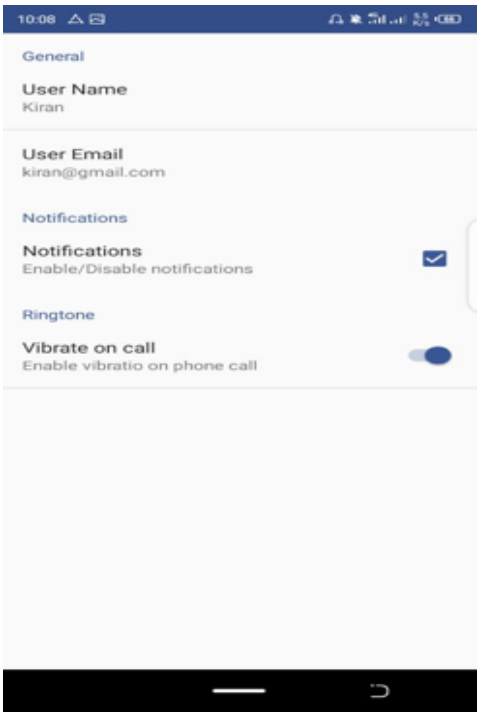
Profile Updation:

Figure 13: profile updation



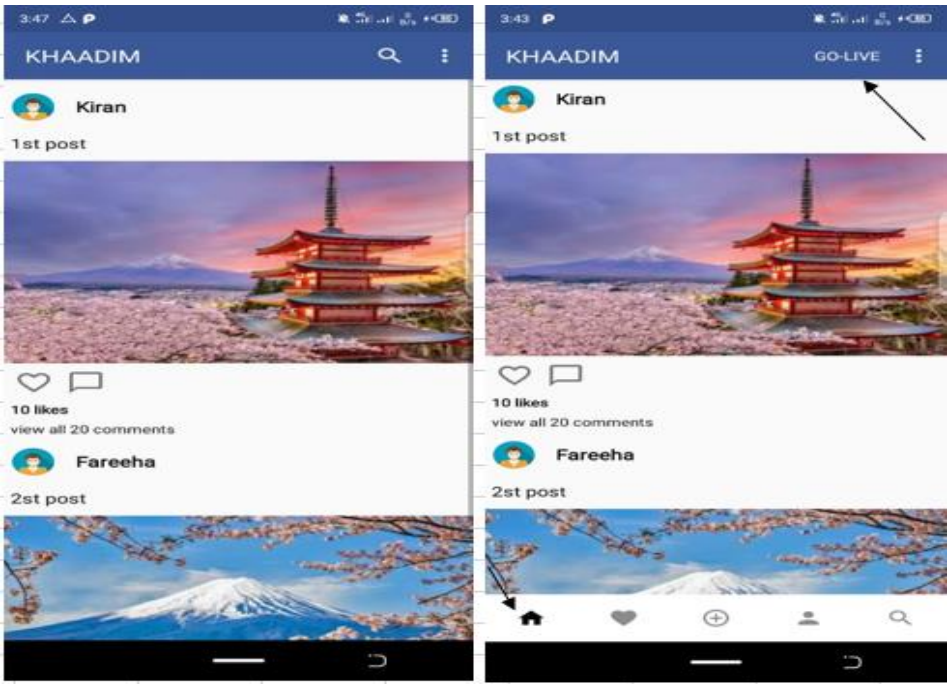
Setting screen:

Figure 14: setting screen



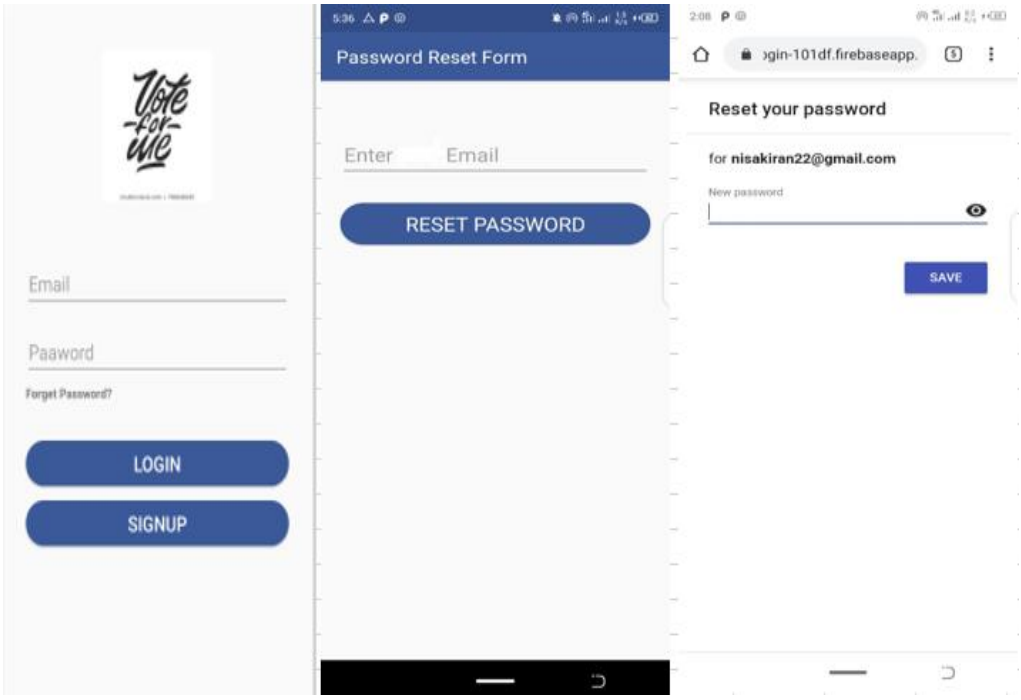
TimeLine with Navigation Fragments:

Figure 15: Timeline with navigation fragment



Update password:

Figure16: update password



Chapter 3

Requirement Specification

3. Requirement Specification:

In this part, we will talk about necessities of the task. In the sub areas, we will examine useful, non-useful requirements and use-instance of project. Prerequisite elicitation and examination is one of the significant piece of project development lifecycle. Software requirement specification characterizes the prerequisite that will be planned and afterward will be created to make a working item.

3.1 Detailed use case:

3.1.1 Candidates use case:

3.1.1.1 Sign-up for(Candidate and User)

Table 02: Sign-up

Use case name	**Sign Up for (Candidate and User)**
Actor	Candidate
Description	Candidate can register and create an account
Pre-condition	Candidate must not be registered.
Post-condition	Candidate's data will be added to database and redirect to login page.
Extend	Nil
Normal flow	1. Go to the start page of app. 2. Click on sign up button. 3. Fill all the fields. 4. Click on sign up button

3.1.1.2 Login for Candidate and User:

Table 03: Login

Use case name	**Login for (Candidate and User)**
Actor	Candidate
Description	Candidate can log into the system
Pre-condition	Candidate is already registered

Post-condition	Connection to server establishes, and candidate is logged in successfully.
Extend	Login error
Normal flow	1. Go to start page of app 2. Click on login button. 3. Fill username and password 4. Click on login button.

3.1.1.3 Complete the Profile:

Table 04: Complete the profile

Use case name	**Complete the profile**
Actor	Candidate
Description	Candidate creates his/her complete profile
Pre-condition	Candidate must be logged into the system.
Post-condition	All data will be stored in data base.
Extend	Nil
Normal flow	1. Click on the complete profile button. 2. Different questions and options will be provided. 3. Provide accurate answer according to the question. 4. Click on the submit button.

3.1.1.4 Profile updation:

Table 05: Profile maintenance or modification

Use case name	**Profile Updating**
Actor	Candidate
Description	Candidate can update his/her profile such as add or delete something from provided information
Pre-condition	Candidate must be logged into the system and have provided the information so that he can update it if require.
Post-condition	The changes in information will be given to the server to update
Normal flow	1. Click on the Edit button. 2. Modify or update the require information

	3. Click on the OK button to submit.

3.1.1.5 Upload picture or video:

Table 06: Upload picture or video

Use case name	Upload picture or video
Actor	Candidate
Description	Candidate can upload multimedia content (images or videos)
Pre-condition	Candidate must be logged into the system and camera or gallery must be accessible
Post-condition	Uploaded item will be saved in database and will be available against the profile of the candidate.
Normal flow	1. Click on the Upload button. 2. Small dialog box will appear to choose the item. 3. Select any item from your device and wait for loading this item. 4. Click on the OK button to confirm the uploading.

3.1.1.6 Post text Message:

Table 07: Post a Text or Paragraph

Use case name	Post text Message
Actor	Candidate
Description	He will able to share his views and opinion by posting some text message to his profile for his followers.
Pre-condition	Candidate must be logged into the system.
Post-condition	The rating and reviews on this post from users will be given to the server
Extend	Nil
Normal flow	1. Click on the POST button. 2. Write any text or paragraph. 3. Click on the OK button.

3.1.1.7 Search other candidates:

Table 08: Search other candidates

Use case name	**Search other candidates**
Actor	Candidate
Description	A candidate can search candidates of his party or his area to check their profile and reputation.
Pre-condition	Candidate must be logged into the system.
Post-condition	The results fetch out from database will be shown to the candidate
Extend	Nil
Normal flow	1. Click on the Search button. 2. Type the name of required person. 3. List from data base will appear to you. 4. Click on the name of required person and details will appear.

3.1.1.8 Manages message requests from user

Table 09: Manages messages request from user

Use case name	**Manages message requests from user.**
Actor	Candidate
Description	Candidate can manage or choose the message requests of his followers.
Pre-condition	Candidate must be logged into the system.
Post-condition	The selected followers by candidate will be able to do chat with candidate.
Extend	Nil
Normal flow	1. Click on the Requests button. 2. List of requested followers will appear. 3. Click on Accept button to allow them to message him. 4. Click on the OK.

3.1.1.9 Send Message:

Table10: Send Message

Use case name	**Send Message**
Actor	Candidate
Description	Candidate can message to other candidates if he is following them and reply to the users if they send message to him.
Pre-condition	Candidate must be logged into the system.
Post-condition	The selected person can chat with each other.
Extend	Nil
Normal flow	1. Click on the Message icon on candidate's profile 2. Chat bot will appear 3. Type any message. 4. Click on to send it.

3.1.1.10 Logout for candidate:

Table 11: Logout

Use case name	**Logout**
Actor	Candidate
Description	Candidate can logout from the system to secure its data
Pre-condition	candidate must be logged in.
Post-condition	Candidate will navigate to the start page of app which shows that he logged out successfully.

3.1.2 User use case:

3.1.2.1 Search and follow:

Table 12: Login

Use case name	**Search and follow**
Actor	User
Description	User can search the candidate of his interest and follow him by clicking the Follow button.
Pre-condition	User must be logged in to the system
Post-condition	List of results matched to query will be displayed and user can pick any of them.
Extend	Nil
Normal flow	1. Click on the Search button 2. Write the name of required person. 3. List of names from database will appear. 4. Click on the name of required person. 5. His profile will appear and click on Follow button if u want to follow him.

3.1.2.2 Give review:

Table 13: Post Review

Use case name	**Post a review**
Actor	User
Description	User can post a review on candidate's profile that whether he likes him or not in context of his services for general public.
Pre-condition	User must be logged in to the system.
Post-condition	That review will be stored in data base and help us to make ranking of candidate.
Extend	Nil
Normal flow	1. Go to the profile of candidate. 2. Click on Review button. 3. Give some ratings. 4. Click on Submit button.

3.1.2.3 Give a Comment:

Table 14: Give a comment

Use case name	**Give a comment**

Actor	User
Description	User can give a comment on the post uploaded by candidate. This post is also visible to user if he is following the candidate. User's comment can be positive or negative depends on whether he like that post or not.
Pre-condition	User must be logged in.
Post-condition	That comment is stored in database for further processing such as classifiers will classify them to negative or positive and it help in marking the reputation of candidate.
Extend	Nil
Normal flow	1. Visit timeline or check new post of candidate 2. Press the Comment button. 3. Write any comment in text field. 4. Click on Ok to send it.

3.1.2.4 Send message:

Table 15: Send Message

Use case name	**Send Message**
Actor	User
Description	User can send messages to candidate to share any issue.
Pre-condition	User must be logged in and candidate already accept the message request of user.
Post-condition	Message will send to candidate as well as get stored in data base.
Extend	Nil
Normal flow	1. Click on the Message icon on candidate's profile 2. Chat bot will appear 3. Type any message. 4. Click on to send it.

3.2 Functional Requirements

Functional requirements are those functions that a system must do in order to achieve specific goal in specific situation. Functional requirements include a specific task, technical details, calculations, logic, processing, and data manipulation of a system. Functional requirements explain the features and functions of the app and the expected behavior of the app. In software development and system

engineering, the functional specification is a document that spells out the functions a system or component must perform.

3.2.1 Sign-up

Table 16: FR-1 sign-up

Identifier	FR-1
Title	**sign-up**
Requirement	The candidate and user shall be able to create a new account.
Source	This requirement is originated from candidate and user as well.
Rationale	Through this requirement, the User can create new account as candidate or general user by putting all required information, after signup user can access other features of app. After creating account he can login.
Business Rule(if requires)	Unauthorized person cannot access the system
Dependencies	NIL
Priority	High

3.2.2 Login

Table 17: FR-2 Login

Identifier	FR-2
Title	**Login**
Requirement	The candidate or user shall be able to login to the system by entering the valid email address and password. The homepage requires having a login mechanism in order to identify unique person and maintain session.
Source	This requirement is originated from the candidate and user as well.
Rationale	Through this requirement, the session can maintained for the candidate, users and all the relevant details of the candidate will be shown multiple time viewing
Business Rule(if requires)	Unauthorized person cannot access the system

Dependencies	NIL
Priority	High

3.2.3 Profile maintenance:

Table 18: FR-3 Profile maintenance

Identifier	FR-3
Title	**Profile Maintenance**
Requirement	The candidate shall be able to fill up a form by entering the valid information.
Source	This requirement is originated from the candidate.
Rationale	Through this requirement, user will know all specific details of details
Business Rule(if requires)	NIL
Dependencies	NIL
Priority	High

3.2.4 Upload or post something:

Table 19: FR-4 Upload or post

Identifier	FR-4
Title	**Upload or post**
Requirement	The candidate shall be able to upload picture or video or post any text or paragraph.
Source	This requirement is originated from the candidate.
Rationale	Through this requirement, the candidate will update his followers about his activities to motivate them.
Business Rule(if requires)	Unauthorized person cannot access the system
Dependencies	NIL

Priority	High

3.2.5 Commenting on Posts:

Table 20: FR-5 commenting on post

Identifier	FR-5
Title	**Commenting on posts**
Requirement	The user shall be able share his opinion on various issues and posts which are uploaded by candidate.
Source	This requirement is originated from the candidate and user as well.
Rationale	Through this requirement, we will classify the reputation of candidate.
Business Rule(if requires)	Unauthorized person cannot access the system
Dependencies	FR4
Priority	High

3.2.6 Give reviews:

Table 21: FR-6 Give reviews

Identifier	FR-6
Title	**Give reviews**
Requirement	The user shall be able to visit the profile of any candidate and give him reviews in form of like or dislike.
Source	This requirement is originated from the candidate and user as well.
Rationale	Through this requirement, we will classify the ranking of candidate.
Business Rule(if requires)	Unauthorized person cannot access the system
Dependencies	FR4

Priority	High

3.3 Non-functional Requirements:

Non-functional requirements are those requirements that participate with functional requirements to help and define the system quality with respect to the following parameter from NFR-01 to NFR- 5.

3.3.1 **NFR-01 usability:**

Usability of our app is as follows:

- USE-1: The User interface of the app shall be responsive
- USE-2: Easy to use as chances of errors will be minimum and the user can navigate through the app easily

3.3.2 NFR-02 Performance:

Performance of our app is as follows

- PER-1: The 90% of the app data shall be downloaded completely within 4 seconds from the time the user requests the data over the faster Internet connection.

3.3.3 NFR-03 Security:

The security of the app is as follows:

- SEC-1: A user will not be able to access the account of any other user

3.3.4 NFR-04 accuracy:

The accuracy of the app is as follows:

- ACC-1: The information provided to the user shall be highly accurate according to their interest.

3.3.5 NFR-05 validation:

The validation of the app is as follows:

- VAL-1: before granting access to the system and user account, a validation will be performed to check if the either the user is registered in the system or not.

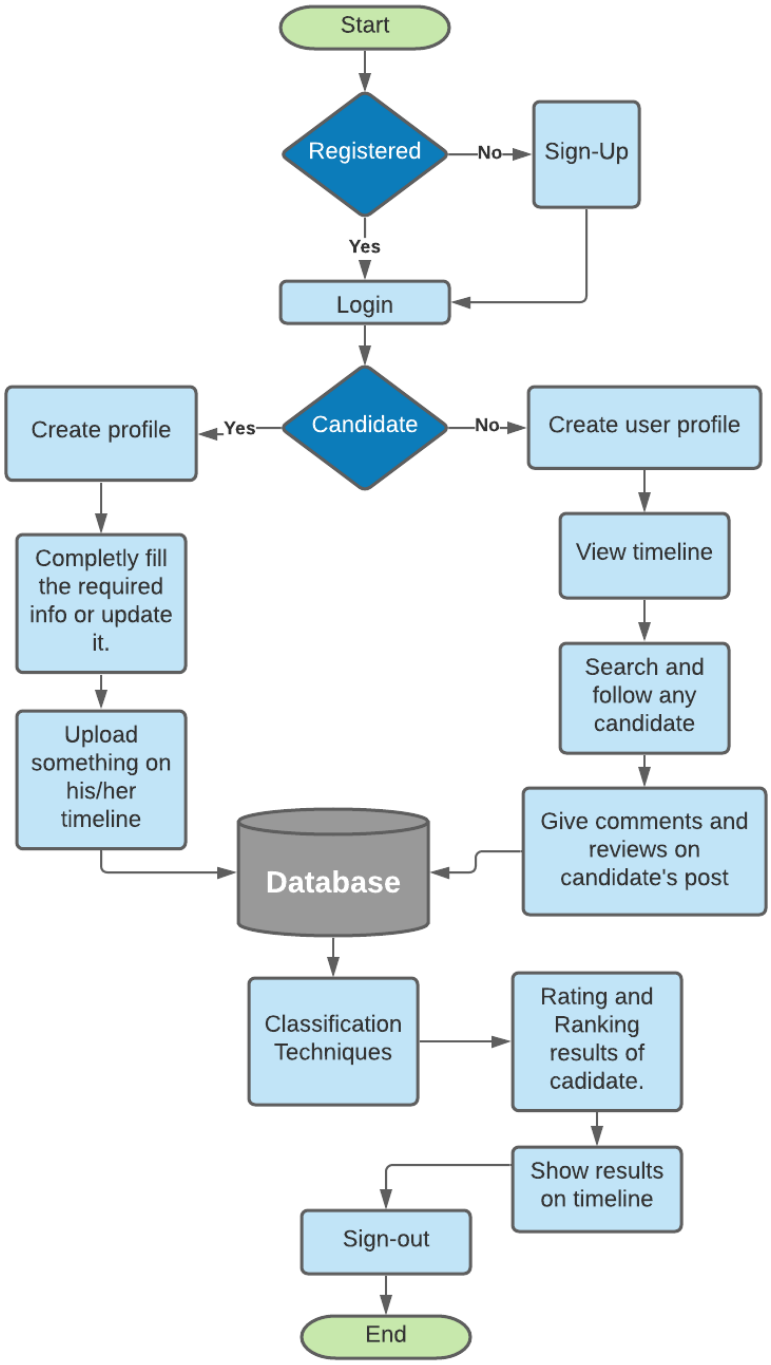
Chapter 04
Design and Architecture:

4 Design and Architecture:

4.1 System Architecture:

4.1.1 Flow chart

Figure 17: Flowchart



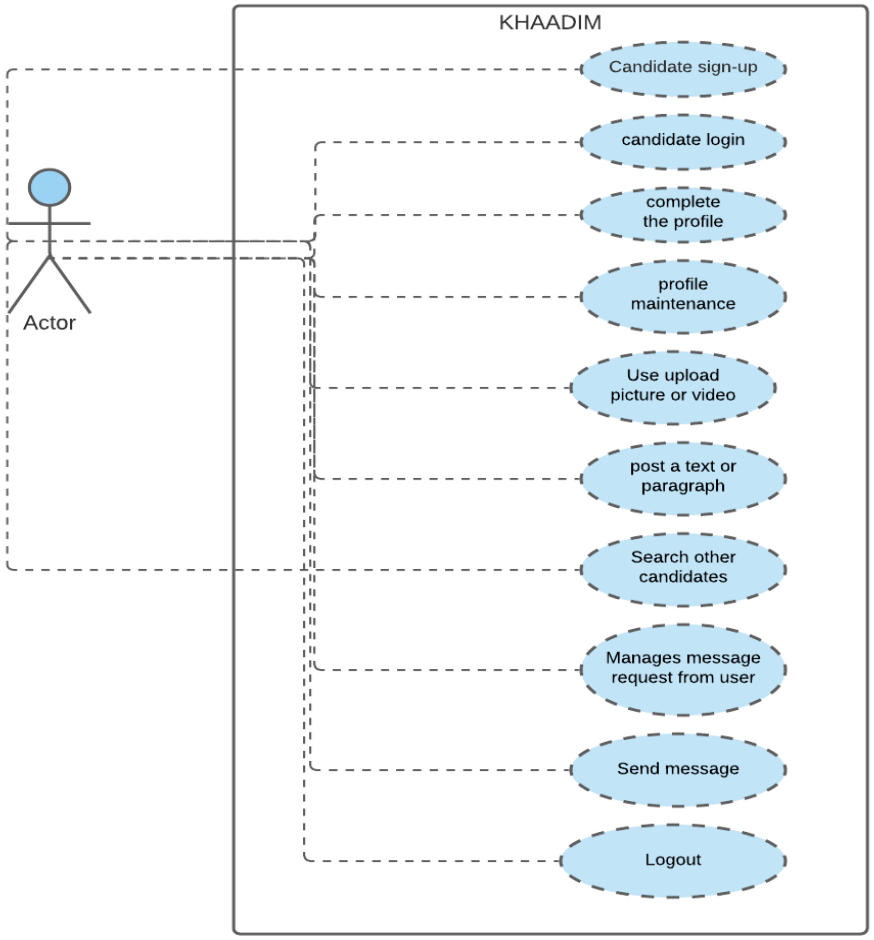
Description:

This above diagram shows the flow that how the candidate and public will interact with app. They well register themselves first and get into the app by logging in. Candidates can post, update, edit and view while public users can only view and give reviews. There are basic three components as shown in figure. This information and reviews will be stored in database for later use. Then the Recommendation engine having classifier algorithms of collaborative filtering will be applied on those reviews and comments and the recommendations will be generated. The top N-Recommendation will be displayed. At the end candidate will see his rating and progress on his/her timeline and users will get idea that to whom they should vote for.

4.2 Use Case Diagram[s]:

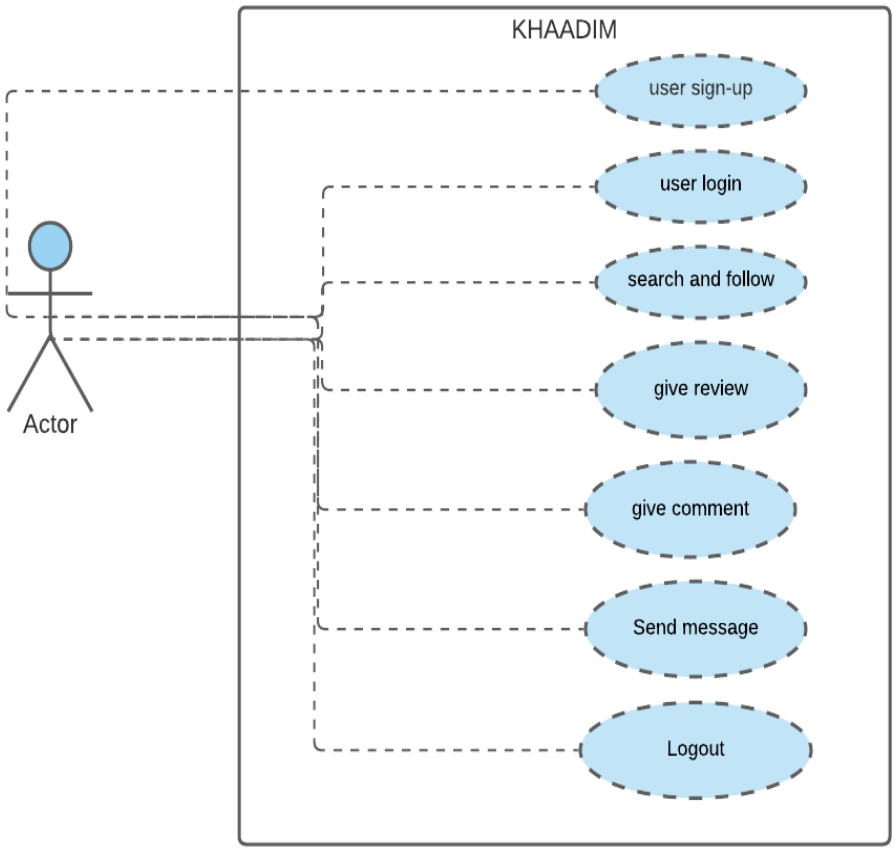
4.2.1 Candidate use case:

Figure 18: Candidate use case



4.2.2 User use case:

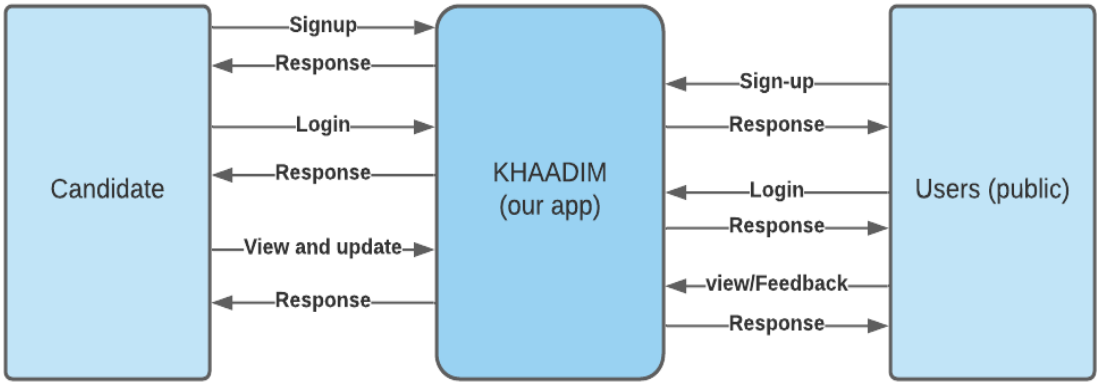
Figure 19: User use case



4.3 Data Representation [Diagrams + Description]

4.3.1 Data Flow Diagram(level 0)

Figure 20: DFD level (0)

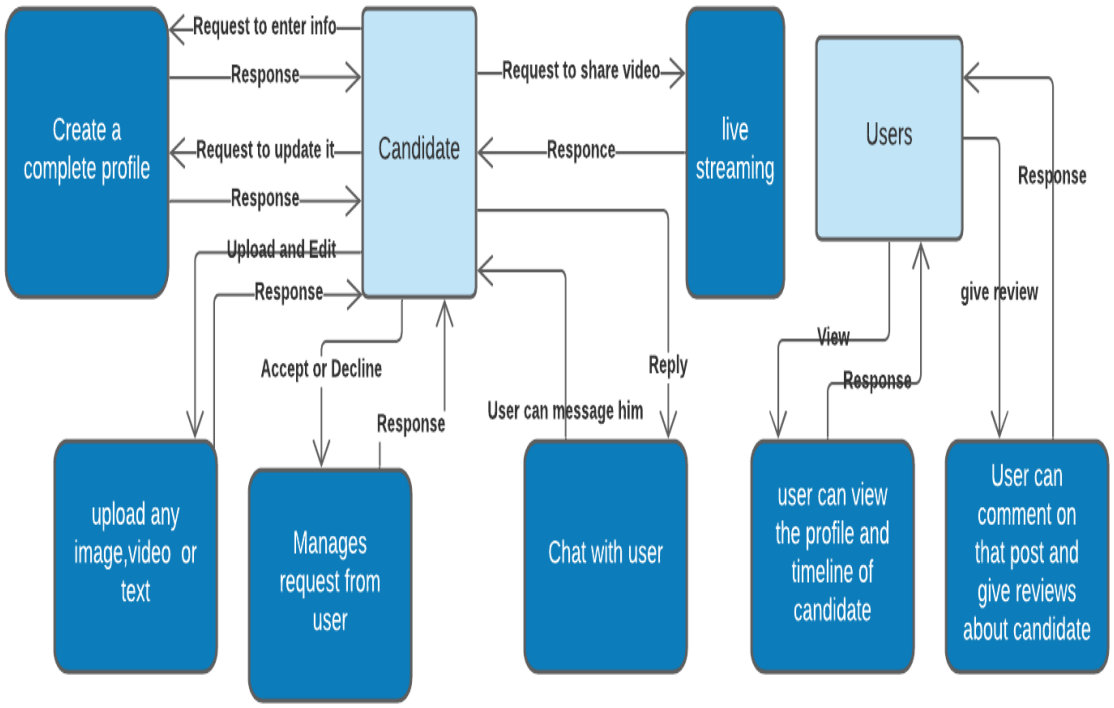


Description:

This DFD (0) shows the overall implementation of the system. The candidate and user can sign up into the system and as a result of it the system will give the response in the form of confirmations. They can also sign in and perform various activities and the system will give response accordingly.

4.3.2 Data Flow Diagram (level 1)

Figure 21: DFD level (1)



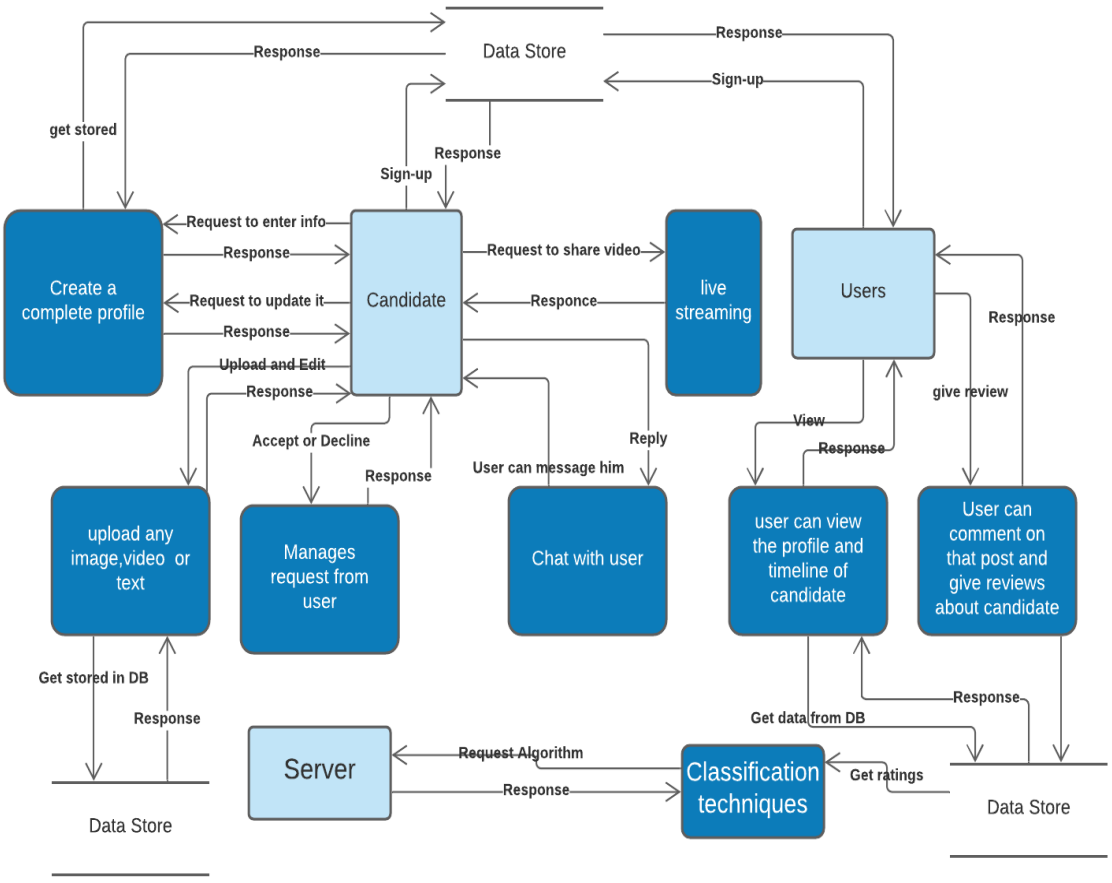
Description:

This DFD (1) shows the more detailed implementation of the system. The candidate and public users can sign up, sign in into the system and it will respond accordingly.

Afterwards, the candidate will completely fulfill the requirements to complete his profile. His followers can see the activities and he can give comments and reviews which will send to the system (classifiers). In the result we get the reputation and ranking of candidate. At the end user will come to know that which candidate is on highest ranking and to whom he should vote for.

4.3.3 Data Flow Diagram (level 2)

Figure 22: DFD level (2)



Description:

This DFD (02) shows the whole flow that candidate and public user can sign up into the app and as a result of it the app will store the details (email, password) into the database and then it give response in the form of confirmations by sending a confirmation link to that email.

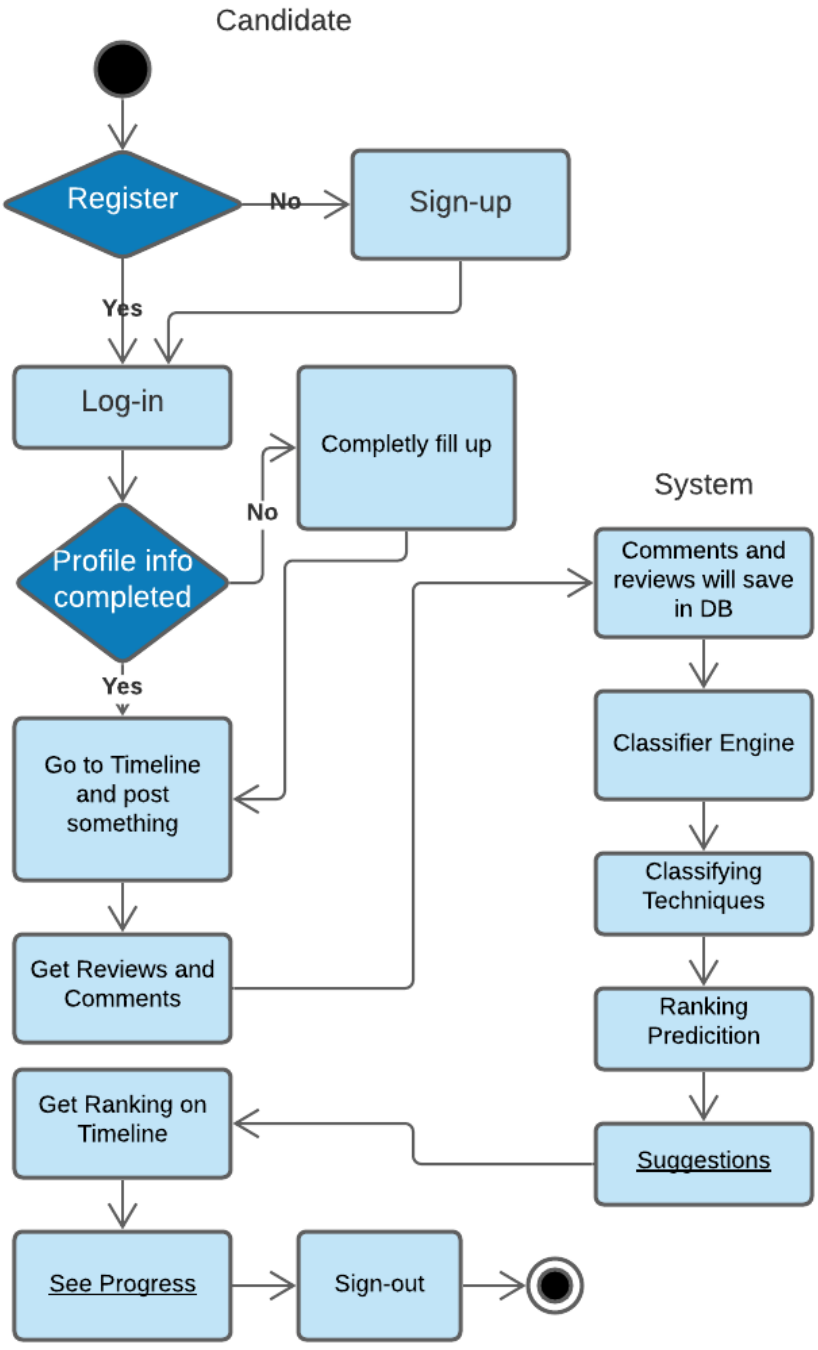
After signing into the system, the candidate will completely fill his profile info and post something on timeline. User can view these post and can comment on post, give reviews by liking these post. Those data and reviews will be stored in database for later use. The Reviews will be sent to server where the trained model (collaborative filters) will classify the ratings and will predict the recommendations that which candidate is doing well and who is on the top. The top N-recommendation will be displayed. The user can get details of candidates that are stored in the database and decide which candidate should be voted.

4.4 Process Flow and Description:

4.4.1 Activity Diagram

4.4.1.1 Candidates:

Figure 23: Activity Diagram

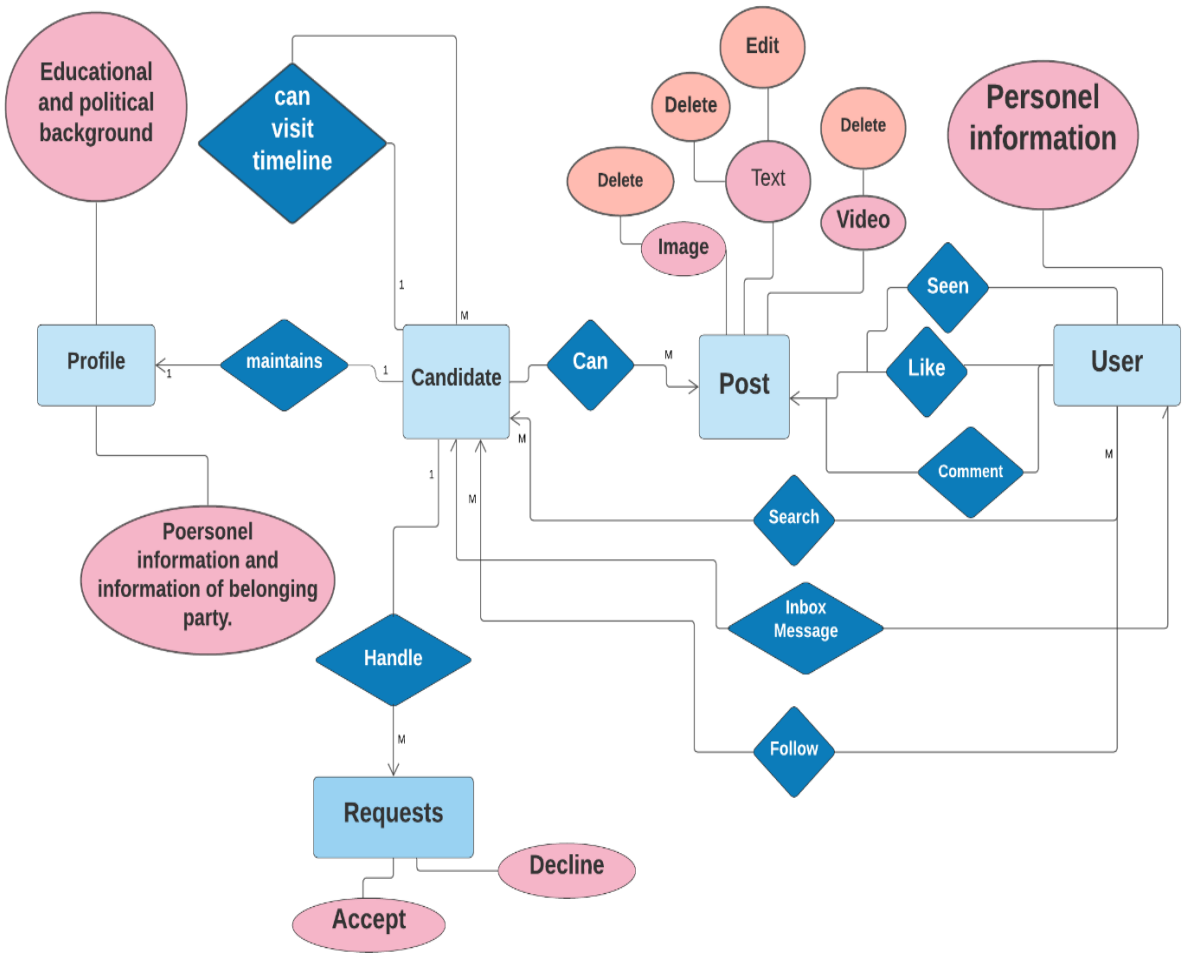


4.4.2 Sequence Diagram

4.5 Design Models with Description:

4.5.1 Entity Relation Diagram:

Figure 24: Entity Relationship Diagram



4.5.2 Class Diagram

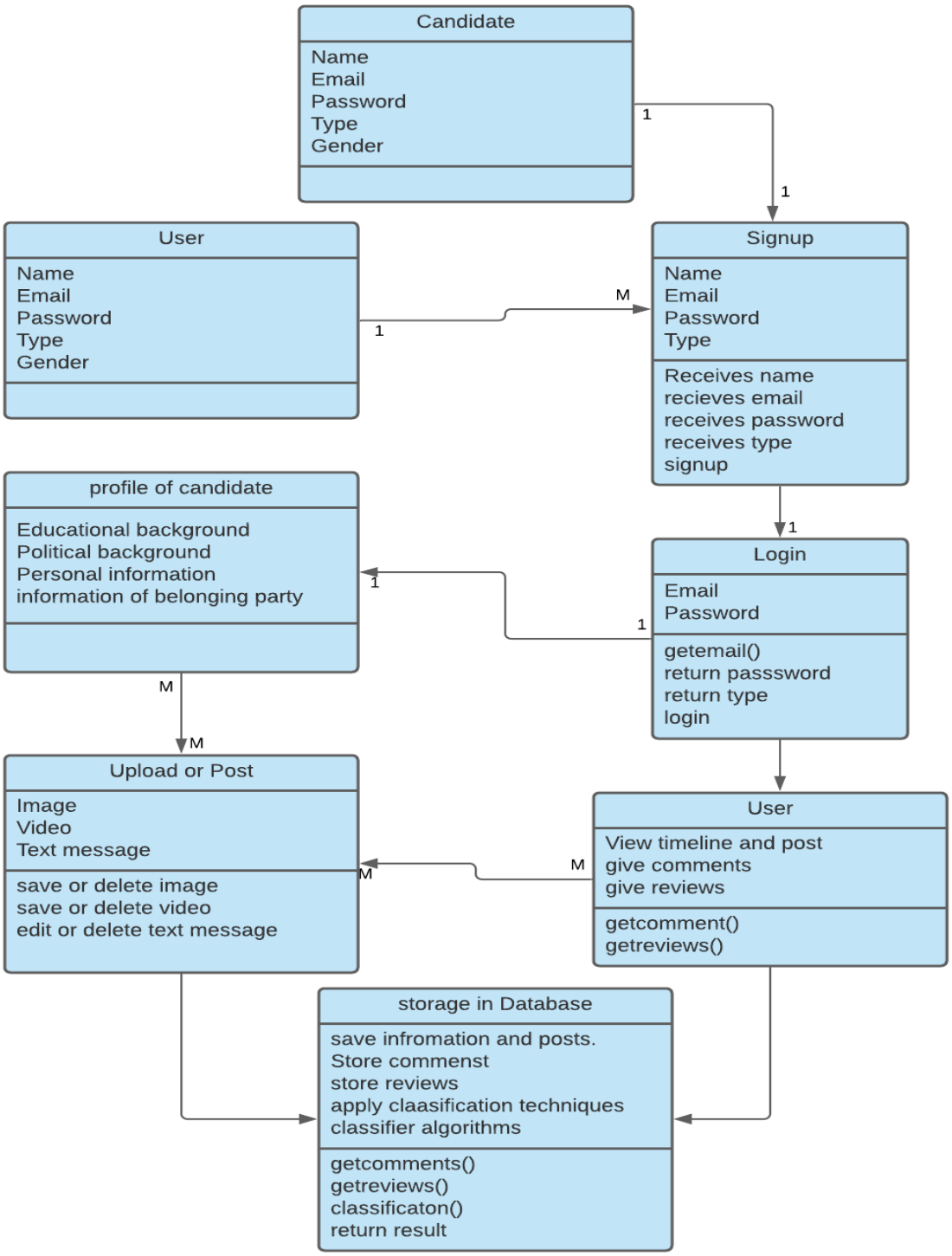



Figure 25: Class Diagram