Android Application for NITJ Placement Cell

A PROJECT REPORT

submitted in fulfillment of requirements for the award of the degree of

Bachelor of Technology

in

Computer Science and Engineering

submitted by

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CANDIDATE'S DECLARATION

We hereby certify that the work presented in this report entitled "Android Application for NITJ Placement Cell" in fulfillment of the requirements for the award of Bachelor of Technology with specialization in Computer Science and Engineering, submitted to National Institute of Technology, Jalandhar is an authentic record of our own work carried out during the period, August 2017 to May 2018 under the supervision of Mr. Rahul Aggarwal, Assistant Professor, Department of Computer Science & Engineering, National Institute of Technology, Jalandhar.

We have not submitted the matter presented in this report to any other university or institute for the award of any degree or for any other purpose.

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This is to certify that the statement submitted by the above candidate is correct and true to best of our knowledge, further it is recommended for external evaluation.

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We would like to thank our families for their continuous support and blessings throughout the entire process, both by keeping us harmonious and helping us putting the pieces together. We also like to thank all our batch mates for the useful discussions, constant support and encouragement during whole period of the work.

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Bharath Mopati Sanchit Sindhwani Vivek Kumar Gupta Sanket Kumar

ABSTRACT

The purpose of the project "ANDROID APP FOR NITJ PLACEMENT CELL", the manual work makes the process slow and other problems such as inconsistency and ambiguity on operations. In order to avoid this Android based placement app is proposed, where the student information in the college with regard to placement is managed efficiently. It intends to help fast in fast access procedures in placement related activities and ensures to maintain the details of the student. Students logging should be able to upload their information.

The placement cell calls the companies to select their students for jobs via the campus interview. The placement cell allows the companies to view the student in selective manner. They can filter the students profile as per their requirement. The job details of the placed students will be provided by the administrator. The administrator plays an important role in our project. Our project provides the facility of maintaining the details of the students and gets the requested list of candidates for the company who would like to recruit the students based on given query.

Students choose a specific company in which they want to sit for placement, there is a need to maintain all required papers, causing large amount of space. It is manually done, chances of missing, difficult to handle the details of student. The aim of the proposed system is to develop a system with improved facilities. The proposed system can overcome all the limitation of the existing system, such as student's information is maintained in the database, it gives more security to data, ensures data accuracy, reduces paper work and save time, only eligible students get chance it makes information flow efficient and proposed system is cost effective.

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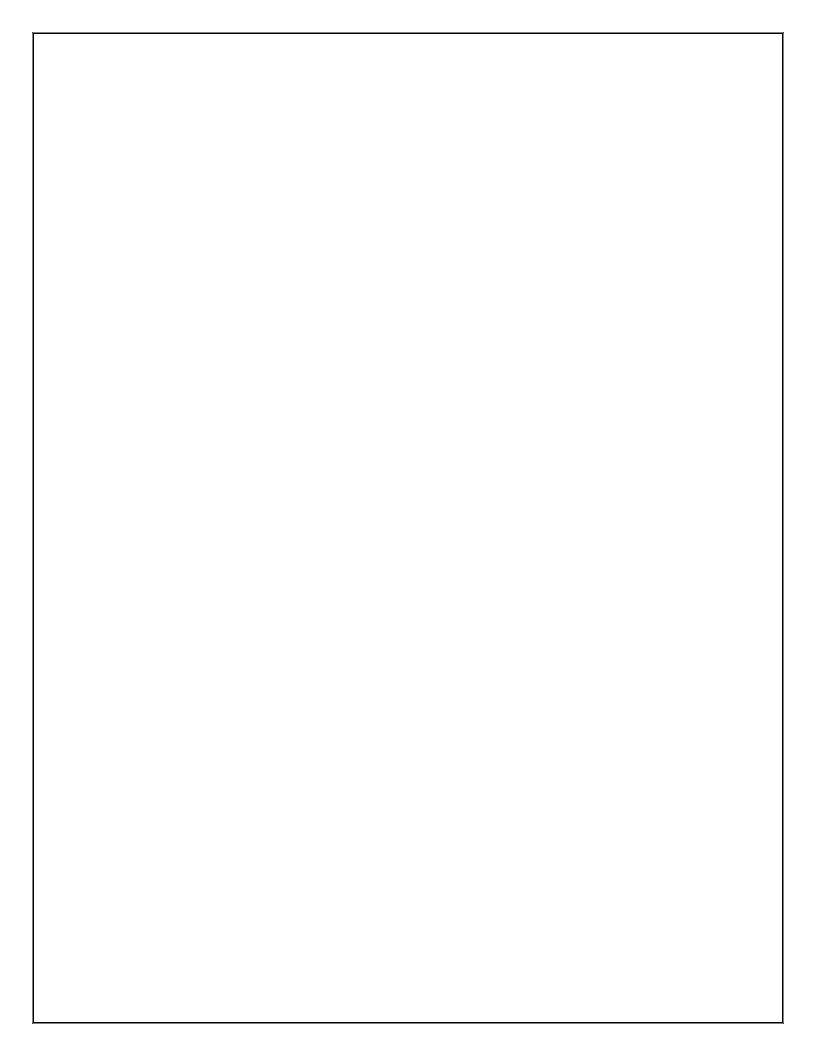
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MOTIVATION REVIEW

Mobile devices these days have gradually become more powerful and distributive, influencing our daily lives on a larger scale. Android, which has proven to be one among the best mobile-based application development platforms provides the developers with many APIs and tools for the development of Android applications.

We intend to develop one as such for the Training & Placement cell of our college and make it accessible to all the students. It includes regular updates about the cell along with the list of students selected for companies, events and activities, training schedules, placement information, company information, discussion forums etc., which would provide ease to both the management and the students as well.

- When users open the application a splash screen appears with the college logo.
- The app Bar contains App Logo and the Application name
- When users click on the different functionalities one can navigate to the respective Module of your choice.
- When user clicks on the Discussion Forum lists Recent queries, post a question
- Only a Registered User can post a question or reply to a post.

1.1 Functional Requirements:

1.1.1. Authentication

The most important function of the login page is to provide access only to the registered students. The Placement coordinator must provide the users ids and password.

- REQ-1: Providing the users to be listed as the administrators.
- REQ-2: Correct username and password to enter into the administrator controls

1.1.2. Upcoming Companies

The most important function of the upcoming companies is to provide important information regarding visiting company-its related information –it's CTC, the criteria, and all other information like the previous interview session information etc.

1.1.3. Previous Companies

The most important function of the previous company is to provide important information about selected student

1.1.4. List of Companies

The most important function of list of companies is to make track of company visited in campus and contact information of those companies.

1.1.5. Student Zone

The most important function of the student zone is to filter students on some required criteria.

1.1.6. Chat

The most important function of the chat application is to provide common communication platform between student and placement representative.

1.2 Non Functional Requirements

1.2.1 Performance Requirements

1.2.1.1 Real-Time

The application will provide up-to-date information. It should display the latest results at all times, and if it lags behind, the user should be notified.

1.2.1.2 System Resource Consumption

Resource consumption of this application should not reach an amount that renders the mobile device unusable. The application should be capable of operating in the background should the user wish to utilize other applications.

1.2.2 Safety Requirements

User needs to sign in with their account to prove their identity before using.

1.2.3 Security Requirements

The security system features from having a login for all the users to access the applications full features. The login details will be used in the system also. So the chances of the application getting intruded are very less.

- 1.Login Requirements
- 2. Password requirements.

1.2.4 Software Quality Attributes

1.2.4.1 Reliability

The application will meet all of the functional requirements without any unexpected behaviour. The information entered by the PR should be reliable as well as by the Student.

1.2.4.2 Availability

The application will be available at all times on the user Android device, as long as the device is in proper working order. The functionality of the application will depend on any external services such as internet access that are required.

<u>1.2.4.3 Security</u>

The software should never disclose any personal information of any users, and should collect no personal information from its own users.

1.2.4.4 Maintainability

The application can be maintained easily.

1.2.4.5 Portability

This software will be designed to run on any Android operating system jellybean or higher. The software will be forward compatible for all currently released Android operating system versions.

Introduction

2.1 THE SYSTEM

2.1.1 Overview

This project is aimed at developing an android application for the Training and Placement Department of the College. The system is an android application that can be accessed throughout the organization with proper login provided. This system can be used as a android application for the Training and Placement Officers (TPO) of the college to manage the student information with regard to placements. The key feature of this project is that, it is a centralised informative communication channel. Our project provides the facility of maintaining the details of the students. It also provides a requested list of candidates to recruit the students based on given query. Administrator logging in may also search any information put up by the students. This project will aid colleges to practice full IT deployment. This will also help in fast access procedures placement related activities

2.1.2 About Present System

In Various colleges, training and placement officers have to manage the students profile and documents of students for their training and placement manually. Placement Officer have to collect the information of various companies who want to recruit students and notify students time to time about them. Placement Officer have to arrange profiles of students according to various streams and notify them according to company requirements. If any modifications or updates are required in the profile of any student, it has to searched and to be done it manually.

Even Students face problem regarding placement information and updates. Due to usage of crude methods for communication regarding placements this often creates chaos among students. Mobile devices these days have become more powerful and distributive, influencing our daily lives on a larger scale. Android, which has proven to be one among the best mobile-based application development platforms provides the developers with many APIs and tools for the development of Android applications.

2.1.3 About the Project

This project is to facilitate students in college to communicate with Placement Office. The users can access easily to this and the data can be retrieved easily in no time. In the main page there are options for a registered student to directly login using username and password. The job details of the placed students will be provided by the administrator. The administrator plays an important role in our project. They provide approval of student registration and updating. In this project we create a filter for administrator, who can filter everything about the students.

It includes regular updates about the cell along with the list of students selected for companies, training schedules, placement information, company information, discussion forums, placement coordinator's communication with employees etc., which would provide ease to both the management and the students as well.

2.1.4 Objective of the project

Computers and information technology has a major influence on the society and the society is becoming more and more dependent on technology. Going on is an era of simplifying almost all complicated works using computers. The last few years have witnessed a tremendous increase in the capabilities and use of computers. Manual processing makes the process slow and other problems such as inconsistency and ambiguity on operations. The proposed system intends user-friendly operations which may resolve ambiguity. By considering all this factors, the applications produced, which performs the social service simply and effectively.

The main aim is to make interaction among placement coordinator and students more feasible ensuring that the students get notification and updates timely and increase the accessibility of company information among students.

2.1.5 Scope of the project

Our project has a big scope to do. We can store information of all the students. Students can maintain their information and can update it. There are updates about the companies. Students can access previous information about placement. Students have one platform to communicate and get information of company. Placement coordinator have information of placed students. Students can know about previous placement status. Placement coordinator can easily filter students accordingly as requirements. Placement coordinator can select companies from database of companies and communicate with them to book slots for interview and show them for students.

The project is to record the information of the candidate and manage the huge data of all applicants that includes Job postings, applicants, companies, resumes and the people. The app allows us to retrieve information such as Job details and Applicant details. The candidate can search for the job by logging in. The PR application allows PR personnel to shortlist the applicants and makes selection criteria

INTRODUCTION TO THE PROGRAMMING ENVIRONMENT

The app is being developed using Java and firebase. Tools for the same are the android studio.

Java is a programming language originally developed by Sun Microsystems and released in 1995. James Gosling, Patrick Naughton, Chris Warth, Ed Frank and Mike Sheridan developed Java at Sun Microsystems, Inc. in 1991. This Language was initially called —Oak but was renamed —Java in 1995. The language derives much of its syntax from C and C++ but has a simpler object model and fewer low-level facilities. From C, Java derives its syntax. Many of Java 's object oriented features were influenced by C++. The major feature of Java is that it is platform independent. Java applications are typically compiled to byte code that can run on any Java virtual machine(JVM) regardless of computer architecture.

Java Features:

- 1. <u>Platform Independent:</u> The Write-Once-Run-Anywhere ideal has not been achieved (tuning for different platforms usually required), but closer than with other languages.
- 2. <u>Object Oriented:</u> Java is pure object oriented throughout i.e. there is no coding outside of class definitions, including main (). There is an extensive class library available in the core language packages.
- 3. <u>Compiler/Interpreter Combo</u>: Code is compiled to byte codes that are interpreted by a Java virtual machines (JVM). This provides portability to any machine for which a virtual machine has been written. The two steps of compilation and interpretation allow for extensive code checking and improved security.
- 4. <u>Robust</u>: Exception handling built-in, strong type checking (that is, all data must be declared an explicit type), local variables must be initialized.
- 5. Several Dangerous Features of C and C++ Eliminated: No memory pointers are used. No preprocessors defined. Array index limit checking.

6. Security:

- No memory pointers.
- Programs run inside the virtual machine sandbox.
- Array index limit checking
- 7. <u>Dynamic Binding</u>: The linking of data and methods to where they are located, is done at run-time. New classes can be loaded while a program is running. Linking is done on the fly. Even if libraries are recompiled, there is no need to recompile code that uses classes in those libraries. This differs from

C++, which uses static binding. This can result in fragile classes for cases where linked code is changed and memory pointers then point to the wrong addresses.

8. Good Performance: Interpretation of byte codes slowed performance in early versions, but advanced

virtual machines with adaptive and just-in-time compilation and other techniques now typically provide performance up to 50% to 100% the speed of C++ programs.

- 9. <u>Threading</u>: Light weight processes, called threads, can easily be spun off to perform multiprocessing. We can take advantage of multiprocessors where available. Great for multimedia displays.
- 10. <u>Built-in Networking</u>: Java was designed with networking in mind and comes with many classes to develop sophisticated Internet communications. Features such as eliminating memory pointers and by checking array limits greatly help to remove program bugs. These and the other features can lead to a big speedup in program development compared to C/C++ programming.

FIREBASE

Firebase is a platform that makes developing android apps easier. it is owned by Google and is easy to integrate to your project

It combines Analytics, Database, Authentication, Storage, Hosting, Crash Reports, AdMob etc.. Google is trying to Integrate all basic services needed for an android app through Firebase

<u>Analytics</u>-Provides Insights about your app like number of users, what are they doing with your app (you can track users based on buttons they click, activities through which they navigate etc.)

<u>Authentication</u> - Lets you to use firebase as a database to manage users

Storage -you can store data by using firebase as backend

Testing - A/B Testing for your app

<u>Crash</u> - Notifies about your app crashes

Notifications - You can send Notifications from firebase by filtering users based on segments and app.

ANDROID STUDIO

Android Studio is the official Integrated Development Environment (IDE) for Android platform development.

In simple words it is a software made by Google through which on can make android applications but one should have knowledge of codes for that. It also consists of graphic layout where one can review how the interface of app looks like and what modifications are required.

PROJECT OBJECTIVES AND FEATURES

3.1 OBJECTIVES

- To make interaction among placement coordinator and students more feasible.
- To ensure that the students get notification and updates timely
- To increase the accessibility of company information among students.
- To ensure there is no miscommunication among students about any company information.
- To maintain a database of companies by PR for future use

3.2 FEATURES

The Android App for Placement contains following features

- 1. Authentication
- 2. Upcoming Companies
- 3. Previous Companies
- 4. List of Companies
- 5. Student Zone
- 6. Chat Room

3.2.1 Authentication

3.2.1.1 Description

This feature will give the user a secure and simple login screen. There are two type of login,

- 1. Student login
- 2. PR login

Student have view access of upcoming companies, previous companies and their own profile whereas PR will update upcoming companies and result of different companies. They also have access to change the concerned profiles.

3.2.1.2 Stimulus/Response Sequences

It will consist of two basic fields, Username and Password. There is a button Login for submitting the entered username and password. On successful entry the user will be provided with the facilities and concerned functionalities as per the student or the PR. PR's control page is to control all the settings of the database. On unsuccessful login the user is directed again to the same login page with an error message.

3.2.1.3 Functional Requirements

The most important function of the login page is to provide access only to the registered students. The Placement coordinator must provide the users ids and password.

REQ-1: Providing the users to be listed as the administrators.

REQ-2: Correct username and password to enter into the administrator controls.

3.2.2 Upcoming Companies

3.2.2.1 Description and Priority

This feature will acknowledge all student about upcoming companies. Placement coordinator will add information about all upcoming companies.

3.2.2.2 Stimulus/Response Sequences

Only placement coordinator can manipulate information about upcoming companies. On user side, user has only view access of upcoming companies' information

3.2.2.3 Functional Requirements

The most important function of the upcoming companies is to provide important information regarding visiting company-its related information –it's CTC, the criteria, and all other information like the previous interview session information etc.

3.2.3 Previous Companies

3.2.3.1 Description and Priority

This feature will help student as well as placement coordinator to track about all visited companies in institute. This section contains information of visited companies and name and number concerned student selected in the company.

3.2.3.2 Stimulus/Response Sequences

Only placement coordinator can add information about selected student of particular company. On user side, user have view access of selected student.

3.2.3.3 Functional Requirements

The most important function of the previous company is to provide important information about selected student.

3.2.4 List of Companies

3.2.4.1 Description and Priority

It contains information about company such as company name, link of company and company information. Motive behind list of company is to track about visited companies in college and contact information of company.

3.2.4.2 Stimulus/Response Sequences

Only placement coordinator can add information of new company. On user side, user doesn't have view access of List of companies.

3.2.4.3 Functional Requirements

The most important function of list of companies is to make track of company visited in campus and contact information of those companies.

3.2.5 Student Zone

3.2.5.1 Description and Priority

Student zone provide option for placement coordinator to filter student on the basis of CGPA / dream placement and non-dream placement. Placement coordinator can update student profile information.

3.2.5.2 Stimulus/Response Sequences

Placement coordinator can update information of student profile. Placement coordinator have option to filter out student on the basis of CGPA, /dream and non-dream placement.

3.2.5.3 Functional Requirements

The most important function of the student zone is to filter students on some required criteria.

3.2.6 Chat

3.2.6.1 Description and Priority

Chat application is to provide communication between placement coordinators and students. Student will post their query in chat application regarding companies.

3.2.6.2 Stimulus/Response Sequences

Placement coordinator and student can post their query and the different problems in chat application.

3.2.6.3 Functional Requirements

The most important function of the chat application is to provide common communication platform between student and placement representative.

IMPLEMENTATION

4.1 MODULES:

4.1.1 Login Module:

Here user (student or PR) can login by their registered Email and password and can generate a new password if he/she forgets password.

- **4.1.1.1 Login Activity:** After student enters valid email and password, In the database by email as the primary key in students JSON tree we check for the PR attribute for specific user.
 - if PR attribute for the student is checked true, we direct student to Placement Representative home page.
 - if PR attribute for the student is checked false, we direct student to Student home page.
- **4.1.1.2 Forgot password Activity:** After Student enters valid Email in this activity, a password regeneration link is sent to his/her mail and here the student can set new password.

Both these login and password regeneration services are by provided by Firebase services.

4.1.2 Profile and Settings Module:

Here student or Placement representative can view their profile and change their information like password and contact number.

- **4.1.2.1 Profile Activity:** Here student information from the students JSON tree is retrieved into profile adapter and this Information is displayed to the Student or PR in the list form.
- **4.1.2.2 Settings Activity:** Here student or PR after can change their password and contact information and this change is directly reflected in Students JSON tree in firebase database in Real time.

4.1.3. Chat Module:

In here a students and PR can send messages and images among them.

4.1.3.1 Chat Conversation Activity: Here student can send messages and images. And view their group conversation.

In this all messages are retrieved from messages JSON tree using Recycler view registered with firebase recycler adapter which is internally supplied with

- message adapter to hold single message object from database
- Two message layouts to display single messages from sender and receivers in recycler view
- And a reference to messages JSON tree and after clicking each image we can view enlarged image and can download the image.

Two types of messages are stored and retrieved from messages JSON tree that is one with text and one with link of image stored in firebase Storage.

- **4.1.4 Student Module:** Here students can view upcoming companies, visited companies and PR Information.
- **4.1.4.1 View Upcoming Companies Activity: Here** a list of upcoming companies is displayed and on clicking on each company, student can view the offer details like position, salary, date of interview, company link and Information etc. and if he is eligible for the offer or not.

In this all companies are retrieved from upcoming companies JSON tree using Recycler view registered with firebase recycler adapter which is internally supplied with

- Companies adapter to hold single company object from database
- Single company layout to display single view of the company.
- And a reference to upcoming companies JSON tree and after clicking each company view we can view its information like CTC, position, eligibility or not etc.
- These are being added to the database by the concerned PR. He has all the permissions of adding, deleting and updating the information.

Here an eligibility function is used to calculate whether the concerned student is eligible for the offer or not.

- **4.1.4.2** View Visited Companies Activity: Here a list of Visited companies is displayed and on clicking on each company, student has two options
 - Student can view the offer details like position, salary, date of visit, company link and Information.
 - Student can view the placed students and can also view their profiles.

In this all companies are retrieved from visited companies JSON tree using Recycler view registered with firebase recycler adapter which is internally supplied with

- Companies adapter to hold single company object from database
- Single company layout to display single view of the company.
- And a reference to Visited companies JSON tree and after clicking each company view we can view its information like CTC, position, Date of Visit etc.
- These are being added to the database by the concerned PR. He has all the permissions of adding and updating the information.

For each visited company all selected students are retrieved from placed students JSON tree using Recycler view registered with firebase recycler adapter which is internally supplied with

- profile adapter to hold single student object from database
- Single student layout to display single view of the student.

- And a Reference in placed students JSON tree using key of visited company and after clicking on each student view we can view their profile.
- **4.1.4.3 View PR Information Activity:** Here student can view the PR information retrieved from the firebase database and displayed in the form of List view.

4.1.5 Placement representative Module:

4.1.5.1 Update Upcoming Companies Activity: In this PR can add or delete upcoming companies by using form and reflecting those changes directly in upcoming companies JSON tree so that student can view reflected changes in real time without any need for refresh.

On clicking each company PR has three options: -

- To view offer details like position, Date of interview, salary etc.
- View the list of students eligible for the offer by using a filtered query and supplying it to Firebase recycler adapter.
- To remove the upcoming company which has visited already.
- **4.1.5.2 Update Visited Companies Activity:** In this PR can add Visited companies by using form and reflecting those changes directly in visited companies JSON tree so that student can view reflected changes in real time without any need for refresh.

On clicking each company PR has three options: -

- To view offer details like position, Date of visit, salary etc.
- View the list of students selected by the company by using a reference in placed students JSON tree using the key of the visited companies and providing it to firebase recycler adapter associated with a recycler view.
- To Add students selected for a specific visited company.
- **4.1.5.3** Student Zone Activity: This activity comprises of following functions
 - To update the information of students like their placement information and academic information etc.
 - To filter students based on their CGPA by using a specific query and supplying this to a firebase recycler adapter which populates the recycler view with the list of students.
 - To filter students based on their placements i.e. dream, on dream or no placement. by using a specific query and supplying this to a firebase recycler adapter which populates the recycler view with the list of students.

4.2 FEASIBILITY STUDY

The purpose of the feasibility study is not to solve the problem, but to determine the problem is worth solving. This helps to decide whether to proceed with the problem or not. It involves the analysis of the problem & collection of all relevant information relating to the product such as items that would be input to the system, processing required to carried those data, the output data required to be produced by the system as well the various constraints on the behaviour of the system. "Android App for NITJ Placement Cell" had undergone the feasibility study so that the proposed system is possible for development deployment in our college. The feasibility study concentrates on the following, such as Operational Feasibility, Technical Feasibility, Economic Feasibility

4.2.1. ECONOMIC FEASIBILITY

The economic feasibility study evaluate the cost software development against the ultimate income or benefits get from the developed system. There must be scope for profit after the success completion of the project.

4.2.2. TECHNICAL FEASIBILITY

Technical feasibility study compares the level of technology available in the software development firm and the level of technology required for the development of the product. The level of technology consists of the programming language, the hardware resources, other software tools etc.

4.2.3. OPERATIONAL FEASIBILITY

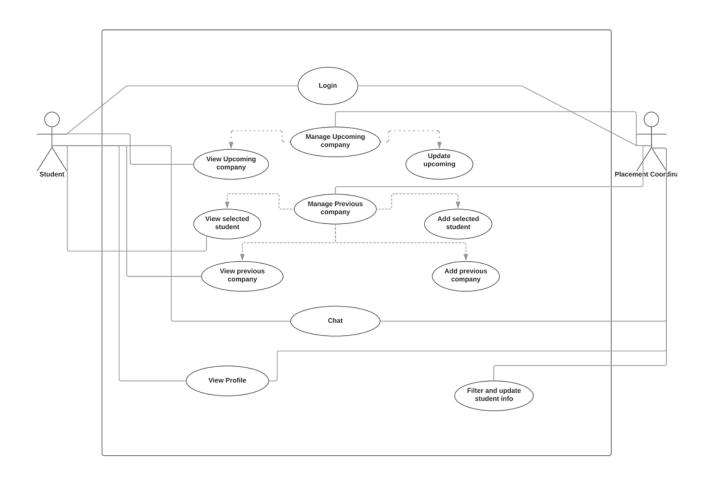
Operational feasibility study tests the operational scope of the software to be developed. The proposed software must have high operational feasibility. The usability will be high.

4.3 CONSTRAINTS AND ASSUMPTIONS

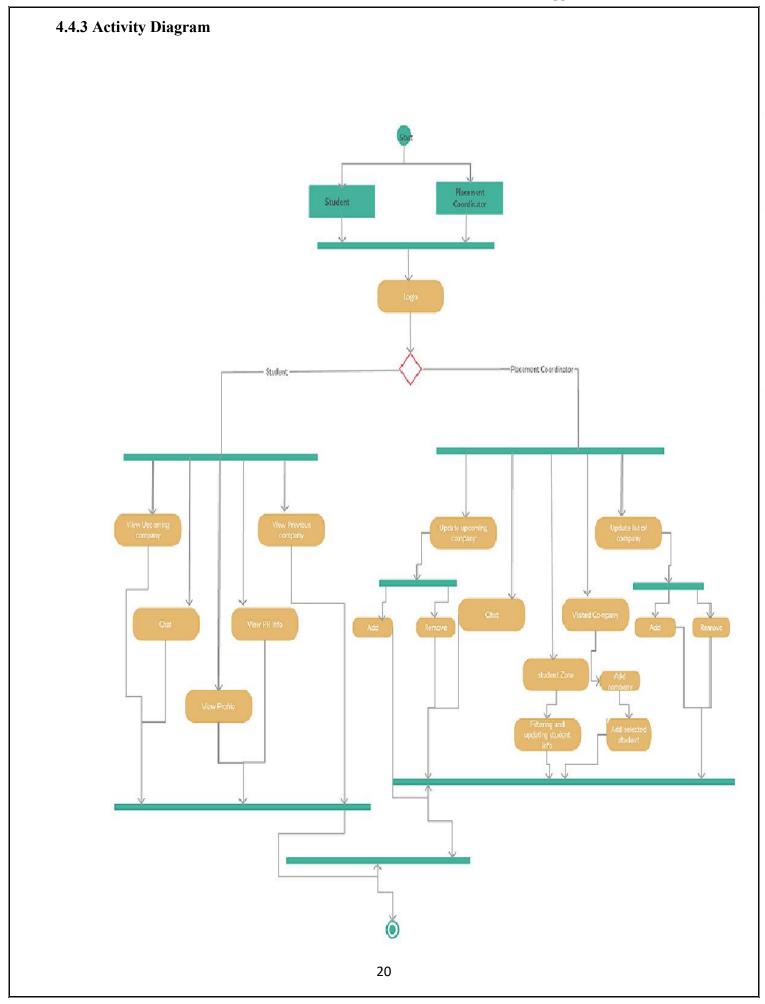
- > Implementation language restrictions
- > The programming language shall be Java for the main application.
- ➤ Using firebase for the cloud targets database.
- The users" device shall have a working data plan or Wi-Fi connection.
- The users" device shall have sufficient memory storage to install the application.
- The users" device shall have sufficient battery life to run the application.

4.4 STRUCTURES AND RELATIONSHIPS

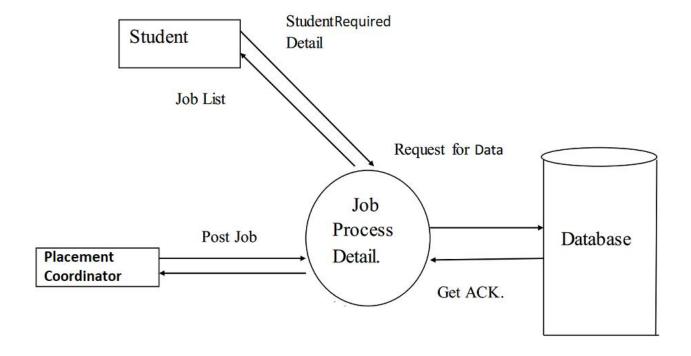
4.4.1 Use Case Diagram



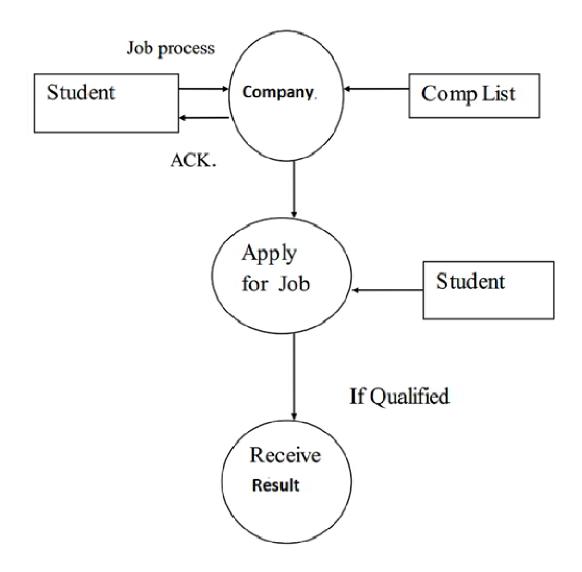
4.4.2 Class Diagram <<Interface>> Person +Name: String +Contact: Integer +Gender: String + doMethod (String) : void + init (boolean, long) : boolean Placement Coordinator +10th Per: Double Student +12th Per : Double +10th Per: Double +12th Per : Double -Backlog: Boolean + add_upcoming_company (arg list) : return -Backlog : Boolean + add_selected_student (arg list) : return + add_visited_company (arg list) : return + View_upcoming_company (arg list) : return + View_previous_company (arg list) : return + do_chat (arg list) : return 0..1 + view_profile (arg list) : return + do_chat (arg list) : return 0..1 0..1 1..* 1..* Previous_Company Upcoming_Company + Key_Selected: String + CTC : String + Eligibility : String + reterive_selected_student(arg list) : return + add_eligibility(arg list) : return + add_CTC (arg list) : return <<Interface>> Company +Name :String +Link: String +Contact: String +About: String + add_Company_Info (String) : void + init (boolean, long) : boolean 19

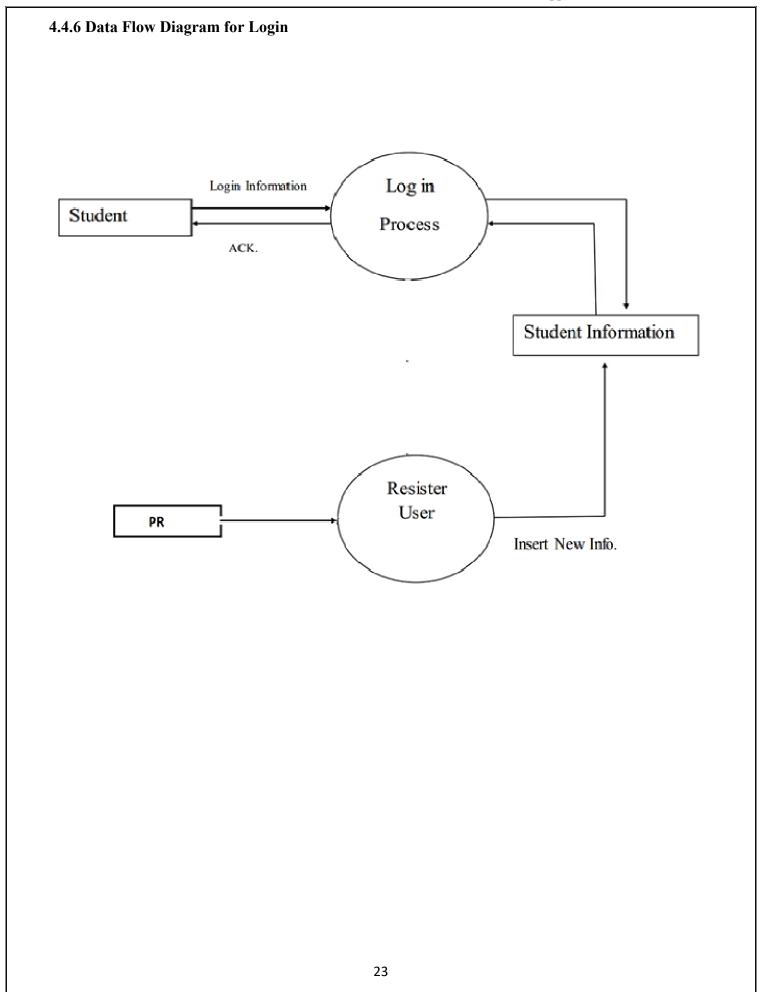


4.4.4 Data Flow Diagram Level 0

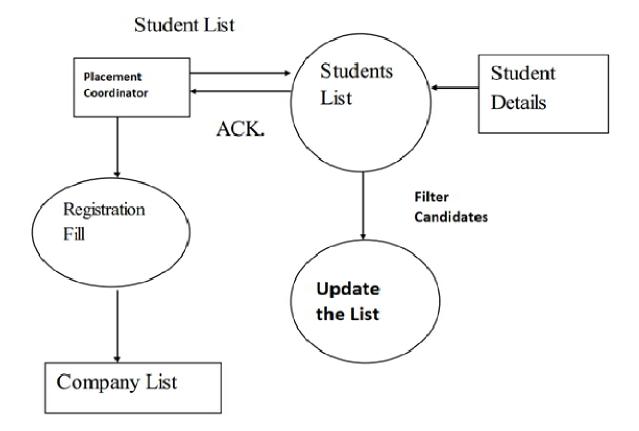


4.4.5 Data Flow Diagram for Job Process





4.4.7 Data Flow Diagram for PR interaction with Student



4.5 WORKING PROCEDURE

Two types of users can login:

- > Students
- ➤ Placement Coordinator

■ For Students

Students can view upcoming company information and view whether they are eligible for that company or not.

Company Information contents:

- Company name.
- Company link
- Eligibility Criteria.
- CTC
- > Students can edit their profile.

Students can communicate with placement coordinator regarding any query through discussion forum.

■ For Placement coordinator

- ➤ Placement coordinator update upcoming company information.
- Add result of selected students in visited company.
- ➤ Manage Discussion Forum.
- > Student filter: So, they can filter eligible students for each company.
- ➤ Placement coordinator can store information of all companies and communicate with for slots.

TEST CASES AND OUTPUTS

5.1 TEST CASES

Test Case	TC-01
Test Description	Leave all fields empty when logging in.
Test Data	Blank Email id and password field.
Expected Result	Message should be displayed "Please fill all the fields"
Actual Result	The message is displayed correctly.
Status	Pass

Test Case	TC-02
Test Description	Enter invalid Username when logging in.
Test Data	Username: incorrect@gmail.com
Expected Result	Message should be displayed "Invalid Login"
Actual Result	The message is displayed correctly.
Status	Pass

Test Case	TC-03
Test Description	Enter invalid password when logging in.
Test Data	Password: incorrect
Expected Result	Message should be displayed "Invalid Login"
Actual Result	The message is displayed correctly.
Status	Pass

Test Case	TC-04
Test Description	Enter valid Username and password when logging in.
Test Data	Username: correct@gmail.com Password: incorrect
Expected Result	Allows user to log in and proceed.
Actual Result	Correct output is obtained
Status	Pass

Test Case	TC-05
Test Description	Leave all fields blank while adding new company
Test Data	All fields blank/some fields blank
Expected Result	Message "please fill all fields" is displayed
Actual Result	Correct output is obtained
Status	Pass

Test Case	TC-06
Test Description	Fill all fields correctly while adding new company
Test Data	Company name, Company link, Contact person, Contact email, Contact number
Expected Result	New company would be added
Actual Result	Correct output is obtained
Status	Pass

Test Case	TC-07
Test Description	Leave all fields blank while adding upcoming company
Test Data	All fields blank/some fields blank
Expected Result	Message "please fill all fields" is displayed
Actual Result	Correct output is obtained
Status	Pass

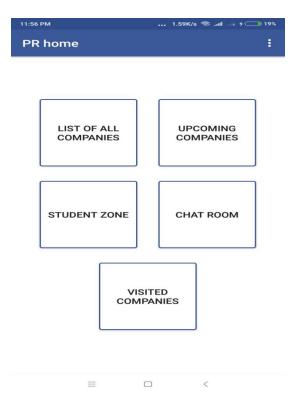
Test Case	TC-08	
Test Description	Fill all fields correctly while adding new company	
Test Data	Company name, Company link, position, CGPA required, CTC, Date of Interview Company Information	
Expected Result	Company should be added	
Actual Result	Upcoming company is added	
Status	Pass	

Test Case	TC-09
Test Description	Leave all fields blank while adding visited company
Test Data	All fields blank/some fields blank
Expected Result	Message "please fill all fields" is displayed
Actual Result	Correct output is obtained
Status	Pass

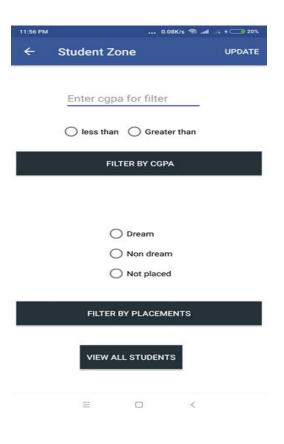
Test Case	TC-10
Test Description	Fill all fields correctly while adding visited company
Test Data	Company name, Company link, position, CGPA required, CTC, Date of Interview Company Information
Expected Result	Company should be added
Actual Result	Correct output is obtained
Status	Pass

5.2 OUTPUTS

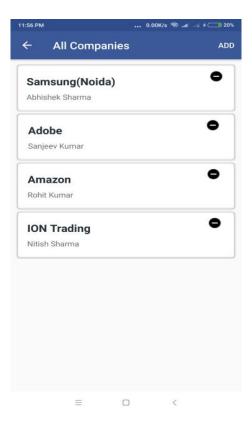
5.2.1 Home Page of Placement Coordinator



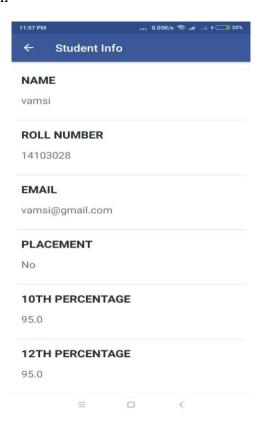
5.2.2 Student Zone



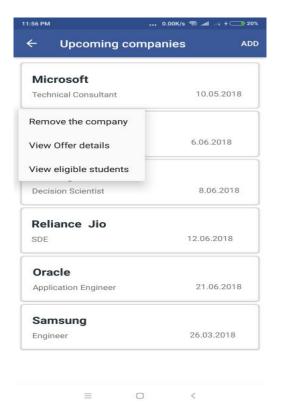
5.2.3 All Companies



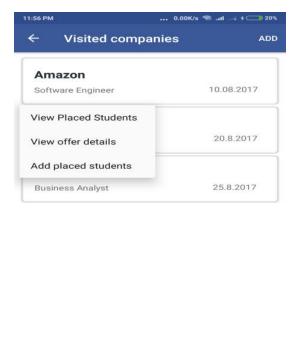
5.2.4 Student Information



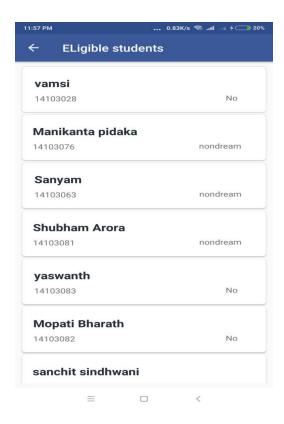
5.2.5 Upcoming companies



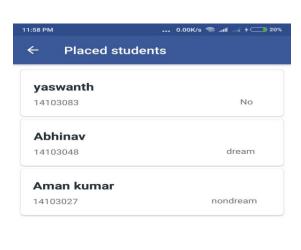
5.2.6 Visited Companies



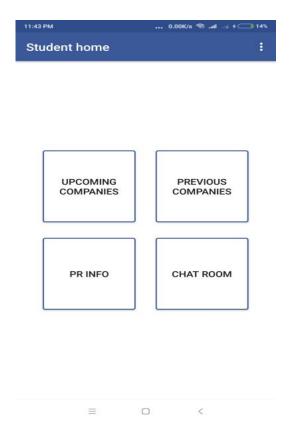
5.2.7 Eligible Student



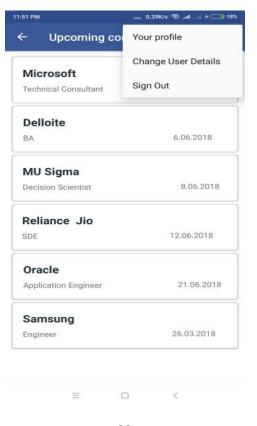
5.2.8 Placed Student



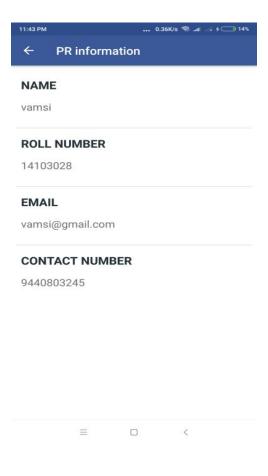
5.2.9 Student Home page



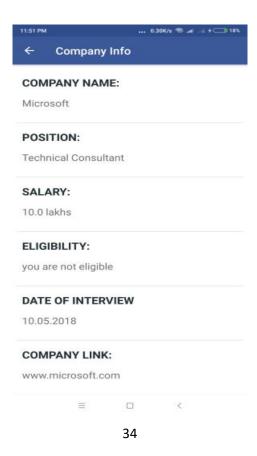
5.2.10 Upcoming Company



5.2.11 PR Info



5.2.12 Company Info



5.2.13 Chat



CONCLUSION AND FUTURE SCOPE

6.1 Conclusion

The era of mobile technology opens the windows to the android application. We used distributed communication platform to inform student regarding placement information. In order to make centralised communication platform, we have developed placement application. From a proper analysis of positive points and constraints on the component, it can be safely concluded that the product is a highly efficient GUI based component. This component can be easily plugged in many other systems. Also the component is user friendly. Generally, the TPO 's of the Colleges has to face a lot of problems in management of the Students information. This all information has to be managed manually. So, there is a need to develop a system that can solve the mentioned problem. This software comes with just that solution.

6.2 Future Scope

Though our project is itself matured enough but still betterment is always an open door. In this case also we can add some features to this software to make this software more reliable.

These are as follows:-

- During the development of the project the prime object was to keep the hardware & software requirement as minimum as possible so that it supports maximum user base.
- The searching procedure should be very strong like placement officer can search student as fast as possible.
- Modify the project with better approach with more graphics.
- The back-up procedure can be incorporated to make sure of the database integrity.
- Placement officer can contact with both student and company through message. Student and company can also send message to Placement officer

References

- http://www.tutorialspoint.com/android.html https://developer.android.com/training/index.html https://androidstudio.com/
- https://firebase.google.com/docs/android/setup