



**COMSATS University Islamabad,
Park Road, Chak Shahzad, Islamabad Pakistan**

Project Proposal

(SCOPE DOCUMENT)

for

HATH MILAO

Version 1.1

By

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SCOPE DOCUMENT REVISION HISTORY

| No. | Comment | Action |
|------------|---------------------------------|---|
| 1. | OK! Accepted | We revised it again, added some new functionality and also updated the tools and technologies. We will use MERN stack because Nodejs, React, MongoDB are modern technologies. |
| 2. | Add Separately Challenge Module | Successfully, Added Challenge Module |
| | | |
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Supervisor Signature**Date:**

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Project Category:

| | |
|--|---|
| <input type="radio"/> A-Desktop Application/Information System | <input checked="" type="radio"/> B-Web Application/Web Application based Information System |
| <input type="radio"/> C- Problem Solving and Artificial Intelligence | <input type="radio"/> D-Simulation and Modeling |
| <input checked="" type="radio"/> E- Smartphone Application | <input type="radio"/> F- Smartphone Game |
| <input type="radio"/> G- Networks | <input type="radio"/> H- Image Processing |
| <input type="radio"/> Other (specify category) | |

Abstract

Our proposed system is a job and internship portal which is a place where students, industrial companies and universities can interact with each other. Students can find jobs and internships easily, apply for a particular job, internship and attempt weekly challenges. Companies can post ad for jobs and internships, give weekly tasks. Companies will short list the final year projects for students. Career centers also ensures that every student of their university gets the job. They can easily track which student is jobless. Universities and companies will be able to manage job fairs. Companies can create any event, workshop and webinar. Universities will be able to create any on-campus events. Students can view and attend the events. Career center will be able to view the profile of student if in case of any mistake they can contact with student and alumni to help them to avoid these kinds of mistakes. Companies will also see the profile of students and alumni. Student and alumni will see the recommended jobs and internships in their home page. Companies will also see the recommended candidate in their home page. Students, alumni, companies and career center have a dashboard in which they will be able to see the statistics of different thing

1. Introduction

Every students and alumni search for a suitable job according to their skills. They visit different offices, joins different groups on social media, visit different websites for jobs and internship. We develop a system in which students or alumni of different universities come to one platform and have direct interactions with industry and their university career center. In this system, notification of new jobs and internships automatically goes to related students. Students get early internships, solve monthly or weekly challenge and also apply for industry project. Career center and companies will be able to create any events and manage job fair at one place.

2. Problem Statement

It is obviously not easy to find a job in a country whose economy is harsh. Companies demand skilled person for their organization and a student who has recently done his/her bachelors cannot have either better skills or experience which industry demands. They will not get jobs easily. Job portals which are available like Rooze.pk, Bayroozgar Mustakbil but still the main problem remains as it is because they will not connect students, alumni directly with companies and career center. As a result, a graduate remains unemployed for usually 6 months or more and then starts to work as an internee and then after some months they are able to apply for paid job. Students also not get opportunities early at university level like internships and jobs. Career centers don't know how many students are jobless. Career centers can't invite all companies due to communication gap. Career center and company manage job fair event activities manually. Due to above reasons students and alumni face many difficulty in getting final year project, internships, jobs and communication with companies and career center. Through this project we will learn to how to make a system scalable, web development and android development.

3. Problem Solution for Proposed System

Our system provides interaction of students and alumni with industry and career center during their university life. It eases every student to find related jobs and internships on one platform. It allows every student or applicant to show his/her skills and basis on their interest the jobs and internships will be shown on home page. They will be able to contact with companies and career center. Company will offer projects and students apply for it. Students will be able to perform weekly and monthly challenges given by companies and they will be rewarded points on completing those challenges. Career center and companies will be able to create events like webinar, workshop etc. Career center will be able to create a job fair online and invite thousands of companies with one click. Companies also manage job fair.

4. Related System Analysis/Literature Review

Table 1Related System Analysis with proposed project solution

| Application Name | Weakness | Proposed Project Solution |
|-------------------------|---|--|
| [1]Rozee.pk | It doesn't provide linkage to Career Centers and doesn't provide enough internships | Career Centers will be shown report of their students which contains information about how many have job and how many are jobless. Then career centers will help jobless students to get job. Companies will offer internships to students |
| [2]Handshake | It doesn't have weekly challenges. | Our system will provide weekly challenges through companies. Companies will evaluate them and award points to student. |
| [3]Mustakbil | It doesn't provide opportunity for students to do industrial projects as their FYP | Companies will offer their projects to student of Final year. |

5. Advantages/Benefits of Proposed System

There are following advantage of the proposed system.

1. Students and alumni will get more and better opportunities early at the university level.
2. Students and alumni will be able to directly contact with companies and career centers.
3. Students apply for offering projects of different companies and make their final year project in collaboration with the respective company.
4. Career center of the university will be able to see the students and alumni profile and review their CV and in case of any mistakes they can contact and help students and alumni to correct them.
5. Career center of the university will be able to manage jobs fair and invite thousands of companies easily with one click.
6. Companies will post internships and jobs with one click which is shown to thousands of students and alumni of different universities.
7. Students and alumni get recommended jobs, and internships on the basis of their interested in home page

6. Scope

Students and alumni register or login into the system. Once students and alumni login they will see the home page in which different jobs and internships are shown according to their interest. They will be able to save and apply for jobs and internships. Students and alumni will be able to view and create a CV. Students and alumni have a message section in which they will contact with companies and career centers. They have a powerful search filter for the jobs and internships. Students and alumni will be able to view update his/her profile in which their achievements, skills and other information are shown, etc. Students and alumni will see and save companies and on-campus events. Students and alumni will be able to attempt weekly and monthly challenges. The score of attempt challenge will be added to their profile. Students will be able to apply for different projects which are offered by industry. Companies will register or login they will see the home page in which the recommended students and alumni profile will display. Companies will be able to post jobs and internships which will show on the home page of thousands of students and alumni. Companies will be able to see the jobs and internships applicant profile there. Companies will be able to create an online webinar and events. Companies will be able to manage all jobs fair on this platform. Companies will be able to contact directly with students and alumni. Career center of university register or login into the system. After that, on their home page, they will see all the student of their own university those are jobless and looking for jobs. Career Center will be able to see the profile of their university students and alumni and review their CV resumes. The career center will be able to contact directly with students. The career center will be able to manage job fair online simply by sending an invitation to thousands of companies. Students, alumni, companies and career center have a dashboard in which they will be able to see the statistics of different things.

7. Modules

7.1 Module 1: User Management

In this module, we will manage all the user students, alumni, companies and career center of the university. All students, alumni, companies and career center must register and login to use the feature of the application. Students, alumni, companies and career center will be able to update and view the profile. Students and alumni follow different companies. Student and alumni will be able to view and update the CV, resumes, etc. The career center will be able to track students who are jobless. This module will have the following features:

7.1.1 Registration

Students, alumni company and career center must be registered user to use a system. All the user will add information according to their profile and after entering that information account will create successfully.

7.1.2 Login

To use the feature of a system all students, alumni company and career center must be login into the system by entering their credentials.

7.1.3 View and update profile

Students, alumni company and career center will be able to view and update their own profile. Career center and companies will be able to view the profile of students and vice versa.

7.1.4 Follow Company

Students and alumni will be able to follow different companies.

7.1.5 Notifications

The students and alumni will receive jobs and internships notification in their home of the company they follow.

7.1.6 Create, Update and View CV

Students will be able to create CV. They can view and update their CV at any time.

7.2 Module 2: Jobs and Internships Management

In this module, we will manage all the jobs and internships related activities. Companies will post jobs and internships which will be displayed to students and alumni and they will apply for it and save jobs and internships. Students and alumni have a filter to search for jobs and internships. Companies also have a filter to search for jobs and internships applicants. This module will have the following features:

7.2.1 Post job and internship

Company will be able to post the jobs and internships which will be shown to thousands of students of different universities.

7.2.2 View, save and apply for jobs and internships

Students and alumni will be able to view, save and apply for jobs and internships.

7.2.3 View jobs and internships applicant

Companies will be able to view the jobs and internships applicants.

7.2.4 Search and filter of jobs and internships applicant

Companies will be able to filter and search the jobs and internships applicant on the basis of different parameter like skills, experience, etc.

7.2.5 Track jobless

The career center will be able to track the student who are jobless which will be shown on the home page.

7.2.6 Search and filter of jobs and internship

Students and alumni will be able to filter the jobs and internships on the basis of different parameter like skills, company etc.

7.3 Module 3: Event Management

In this module, we will manage all the activities related to on-campus and companies events. Companies and career center will create any event. Companies will manage all university jobs fair there. University will be able to create a job fair event and send an invitation to thousands of companies. This module will have the following features.

7.3.1 Create an event

Companies and university will be able to create an event which will be shown to students and alumni in their event section.

7.3.2 Manage job fair

Companies will be able to manage jobs fair of different universities in their manage job fair section.

7.3.3 Create job fair

Universities will be able to create a job fair and invite thousands of companies with one click.

7.3.4 Create workshops

Companies will be able to create workshops.

7.3.5 Create, attempt and view challenge

Companies will be able to add weekly and monthly challenge. Students and alumni will be able to view those challenges and also they can attempt them.

7.3.6 View Event

Students and alumni will be able to view all events in their event section.

7.4 Module 4: Recommendation Engine

In this module, we will use machine learning to make a recommendation for students and alumni. It will recommend jobs and internships to students and alumni according to their interest and skills. We also make a recommendation engine for companies this will recommend students and profiles according to company domain and area. This module will have the following feature

7.4.1 Recommendation engine for Employers

Company recommendation engine will recommend profile of students and alumni according to their domain and area.

7.4.2 Recommendation engine for Students and Alumni

Student and alumni recommendation engine will recommend jobs and internships to students and alumni according to their skills and interest.

7.5 Module 5: Communication Management

In this module, we will manage all activities related to communication between companies, career center, students and alumni. Student and alumni will be able to directly communicate with a career center and companies. Companies will be able to communicate with student and alumni and career center. The career center will be able to communicate with student and alumni and companies. This module will have the following features.

7.5.1 Message section for Students and alumni

Student and alumni will be able to directly communicate with a career center and companies.

7.5.2 Message section for career center

The career center will be able to communicate with student and alumni and companies.

7.5.3 Message section for companies

Companies will be able to communicate with student and alumni and career center.

7.6 Module 6: Final Year Project Management

In this module, all the activities related final year project will be manage. Companies will be able to post and shortlist projects. Students will be able to apply for a project. Companies will be able to view all the project applicant. This module will have the following features.

7.6.1 View the project applicant

Companies will be able to view the project applicant

7.6.2 Short list project ideas

Companies will be able to post and shortlist projects which will be shown in the project section of students

7.6.3 View and apply for the project

Students will be able to view all the project of different companies in the project section and apply for a project.

7.7 Module 7: Challenge Management

In this module, all the activities related to challenges will be manage. Companies will be able to post delete and update different challenges. Students will be able to attempt and submit challenge. Companies will be able to view all the submit challenge solution. Companies will be able to give rating to submitted solution of student. This module will have the following features.

7.7.1 Add, delete and update challenge

Companies will be able to post delete and update different challenges.

7.7.2 View submitted challenge

Companies will be able to view all submitted challenge of different student and alumni.

7.7.3 Give Rating

Companies will be able to give rating to submitted solution of student.

7.7.4 View Attempt and submit challenge

Students will be able to view all the challenges of different companies in the challenge section. Student will be able to attempt and submit challenge solution.

7.8 Module 8: Reporting

In this module, we will manage all reporting and statistics which will be shown to students, alumni, companies and career center. Students, alumni, companies and career center have dashboard in which different graphs will be shown. This module will have the following features.

7.8.1 Dashboard for students and alumni

Students and alumni will be able to view the statistics how many people view their profile in a month, how many jobs they apply in month, etc.

7.8.2 Dashboard for the career center of a university

Career Center will be able to view the students who are jobless according to their enrollment year, how many student get jobs according to their enrollment year, etc.

7.8.3 Dashboard for a company

Company will be able to view how many people will apply for their jobs and internships, how much people they will hire according to year and month, etc.

8. System Limitations/Constraints

The application have following limitation and constraints

1. Availability of internet connection is essential for using our web and mobile application.
2. This mobile and web app will provide service in Pakistan.
3. Users should know how to use computer.

9. Software Process Methodology

9.1 Process Methodology

The process methodology that we will use is **Iterative Process Model** because we will be developing a version of our product with few functionalities and with more iteration we will add remaining functionalities in it.

9.2 Design Methodology

The design methodology that we will use is **Object Oriented Programming (OOP)** because it will help us to manage our code better. With the help of classes and inheritance we will reduce the redundancy in our code.

10. Tools and Technologies.

Table 2 Tools and Technologies for Proposed Project

| Tools And Technologies | Tools | Version | Rationale |
|---------------------------------------|--------------------|----------------|--------------------------------|
| | Visual Studio Code | 2019 | IDE |
| | Android Studio | 3.4 | IDE |
| | MS Word | 2016 | Documentation |
| | MS Power Point | 2016 | Presentation |
| | Pencil | 2.0.5 | Mockups Creation |
| | Technology | Version | Rationale |
| | Reactjs | 16.8 | Frontend Development |
| | Python | 3.7.3 | Machine Learning |
| | Nodejs | 2.1.7 | JS Server |
| | MongoDB | 11.2 | DBMS |
| | HTML | 5 | Frontend Development |
| | CSS | 3 | Frontend Development |
| | Bootstrap | 4 | Frontend Development |
| | React-native | 0.59 | Mobile Application Development |
| | D3.js | 5.9.2 | Graphs |

11. Project Stakeholders and Roles

Table 3 Project Stakeholders for Proposed Project

| Project Sponsor | COMSATS University, Islamabad |
|------------------------|--|
| Stakeholder | <ul style="list-style-type: none"> • Mr. Qasim Malik: Supervising the development process • Final Year Project Committee: Evaluation of project. • Universities , Companies, Students |

12. Team Members Individual Tasks/Work Division

Table 4 Team Member Work Division for Proposed Project

| Student Name | Student Registration Number | Responsibility/ Modules |
|-----------------|-----------------------------|---|
| Qaiser Ali Khan | FA16-BSE-127 | Machine Learning, Frontend and Backend of Web Application, Deployment |
| Haroon Javed | FA16-BSE-110 | Complete Mobile Application, Database Definition and Configuration, Backend Configurations. |

13. Data Gathering Approach

Following data gathering approach used:

- **Interviews**, Interviews are the primary source for draw out the requirements for our proposed system. We will conduct interview with students and university to get the requirements.
- **Analysis of existing system**, with the help of existing system we will also gather lot of information. Most of the requirements we get from the platform Handshake.

14. Concepts

Following concepts we will learn during developing of proposed system:

Concept-1: Machine Learning- We will use machine learning for developing the recommendation engine which will help us how machine learning will solve real world problem with algorithms and how it work.

Concept-2: Relational Database- We will store data of our application in relation database that will help us to learn about how to create relationships between different tables and how to query a data from database.

Concept-3: Mobile Development- We will make mobile application of our system which will help us to learn about mobile development with new technology like react-native which are famous now a days.

Concept-3: Web Development- We will make web application of our system which will help us to learn about web development with new technology like React. We will use nodejs in backend services. We learn about python which will also help in machine learning.

15. Gantt Charts

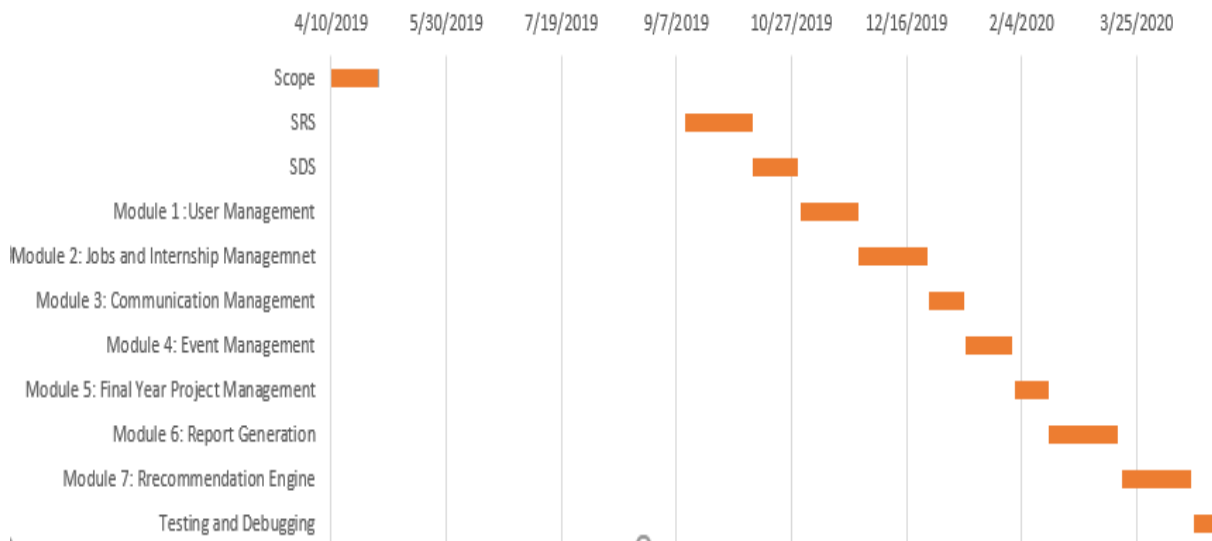


Figure 1: Gantt chart Diagram

16. Mockups

Following are the mockups we created for our project. We made these mockups using pencil tool.

16.1 Recommendation of jobs

This is the mockup of how Companies will be shown recommended profiles of students. This mockup is related to module Recommendation Engine.



Figure 2 Recommendation Engine Module

16.2 Company Home Mobile

This mockup shows how company's home page of mobile application will be shown. This mockup is related to User Management Module.



Figure 3 Company Home Mobile

16.3 Student Home Mobile

This mockup shows how student's home page of mobile application will be shown. This mockup is related to User Management Module.

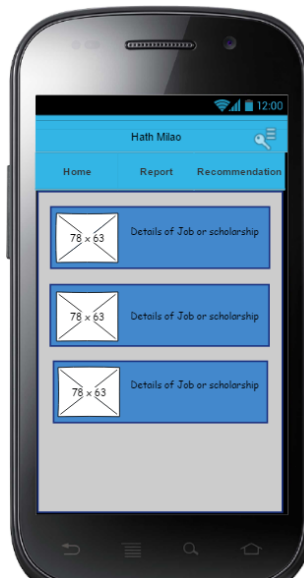


Figure 4 Student Home Mobile

16.4 Student Home Web

This mockup shows how student's home page of Web application will be shown. This mockup is related to User Management Module.

Figure 5 Student Home Web

16.5 Profile of Student Web

This mockup shows how student's profile page of web application will be shown. This mockup is related to User Management Module.

Figure 6 Profile of Student

16.6 Company Home Web Page

This mockup shows how company's home page of Web application will be shown. This mockup is related to User Management Module.

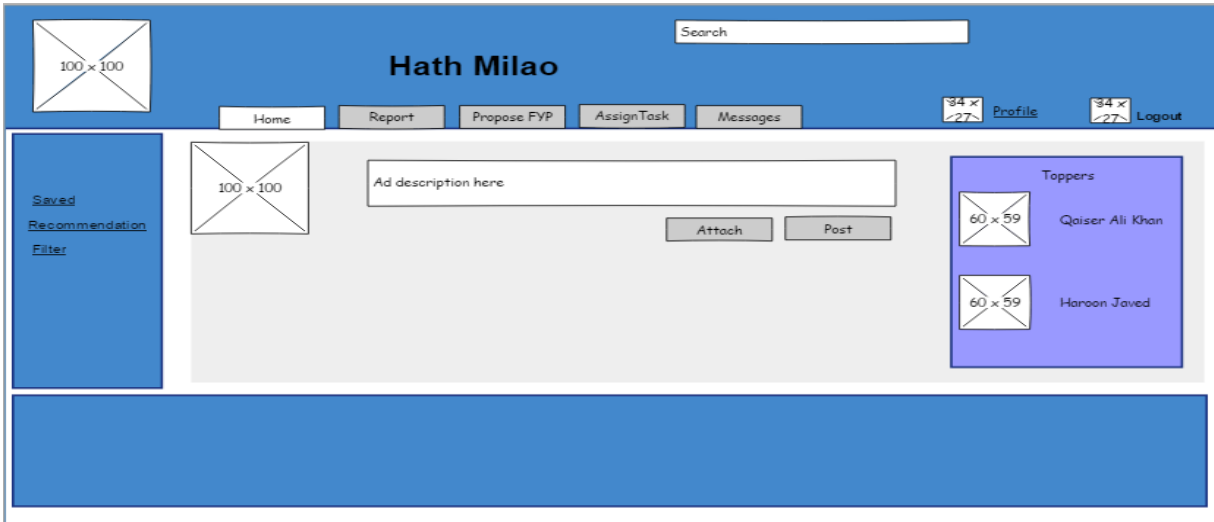


Figure 7 Company Home Web

17. Conclusion

The system we are developing will help us to solve a real-world problem of students and industry. This will also help us to learn many new technologies, machine learning and programming languages. This project will help us to grab a better opportunity in industry. This product will help lot of students and companies. This is first online platform in Pakistan that connect university career center with students and industry.

18. References

- [1] "Rozee.pk," [Online]. Available: <https://www.rozee.pk/>.
- [2] "Handshake," [Online]. Available: <http://www.joinhandshake.com/>.
- [3] "Mustakbil," [Online]. Available: <http://www.mustakbil.com/>.

19. Plagiarism Report

Below the Plagiarism report of my project scope document is attached.

Hath Milao

ORIGINALITY REPORT

1**%**

SIMILARITY INDEX

1**%**

INTERNET SOURCES

0**%**

PUBLICATIONS

%

STUDENT PAPERS

PRIMARY SOURCES

1**fadedtwilight.org**

Internet Source

<1**%****2****www.ncbi.nlm.nih.gov**

Internet Source

<1**%**

Exclude quotes Off

Exclude matches Off

Exclude bibliography On