

COLLEGE OF ENGINEERING, PUNE

DEPARTMENT OF COMPUTER ENGINEERING,

Online Job Portal

...

Submitted By:

Siddhesh Bhujbal

111903104

T5 Batch

Submitted By:

Shubham Somwanshi

111903102

T5 Batch

Submitted to

Mr. Harish Gadade

Assistant Professor

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Abstract

Acquiring knowledge and specific job skills have become the main objectives for students in the universities. Knowledge is necessary to make informed decisions, especially, in a critical situation. Knowledge and knowledge management (KM) in any organization are crucial to give it a competitive edge in today's challenging and globalised environment. In this portal we have proposed a design of on-line recruitment system, that allows employers to post their job advertisements, which job seeker can refer to, when looking for jobs. This job portal is able to capture job requirements based on industry needs.

1 Introduction

As more companies are recruiting students for jobs virtually, especially during the pandemic, there is a need for an online Job Portal to connect both job seekers and companies for the recruitment process. The Job Portal would help boost a person's job seeking efforts and company's hiring process. The application will allow users to search and apply for jobs offered by different companies. Various features like creating and managing profile, uploading resume, checking interview schedules and results would help bridge the gap between job seekers and recruiters. The project mainly focuses on database design and its use to implement various functionalities.

2 Project Topic

3 Objectives -

3.1 Login Register

Login is a default feature that allows workspace access for users that have been invited to the workspace by and admin. Registration is an optional feature that can be enabled to allow anyone (or specified domains) to join/register to the workspace by themselves.

To register means creating a new user account, that is a record in the database describing how you will prove your identity.

3.2 Create profile

CREATE PROFILE statement to create a profile, which is a set of limits on database resources. If you assign the profile to a user, then that user cannot exceed these limits. Enable resource limits dynamically with the ALTER SYSTEM statement or with the initialization parameter RESOURCE LIMIT. This parameter does not apply to password resources. Password resources are always enabled.

Create a profile that defines the limits using the CREATE PROFILE statement

3.3 Change Profile

The Change Profile option allows user to add, change, or delete a resource limit or password management parameter in a user profile. ALTER PROFILE statement uses to modify the resource limit and password management of a profile.

3.4 Upload resume

Candidates can upload a resume making the application process more streamlined.

Candidates are able to import a profile for application flows of type Candidate Profile, and Job-specific Application. The profile import is dependent on the Resume Upload block. It is a best practice to put the Resume Upload block on all application flows to ease the input burden on the candidates. If Resume Parsing is on, candidates have the option of uploading a resume.

3.5 Apply for Job

By this Candidates are able to search and apply to various jobs. Finding the right job or internship for user is possible.



Figure 1: Online Job Portal System - Get What You Want

3.6 Check Interview Status

There are root user who will be intimated about the interview schedule and finally enters the timing. after that the users able to see their interview slot.

3.7 Check final result

user will able to see the final result posted by an administrator.

3.8 Schedule Interviews

An interview schedule is the guide an interviewer uses when conducting a STRUCTURED INTERVIEW. It has two components: a time for user interview designed to be asked exactly as worded, and instructions to the interviewer about how to proceed through the process.

3.9 Add Company Details

Administrator able to post the company details as well as location and requirements for the company.

3.10 Add Job Roles

Job role means the key responsibility of a job profile or job position. A job role is a part played by an employee as per his/her KRA (Key responsibility Areas). and administrator will have option create job roles

3.11 Schedule Aptitude Round

An aptitude test is a way for employers to assess a candidate's abilities through a variety of different testing formats. scheduling of different aptitude round will available on portal.

3.12 Declare Result

Result declaration and ranking will display on website.

3.13 Different login

There will be separate login option for normal user and administrator.

4 Functionalities :

- Job seekers will be able to register and login to the portal.
- Job seekers can create and update their academic profile
- Job seekers would also be able to upload their resume on the website.
- Job seekers can search and apply for multiple job vacancies posted by various companies.
- They can see all the details for a particular job on the website.

- Job seekers can view all the jobs they have applied for in their profile.
- Applicants will be able to view their interviews scheduled by companies on the portal.
- Applicants can see their result status declared by the companies for the jobs they had applied for. Job seekers can also view their account details and account summary.

5 Technologies :

- **Front-end**
 - HTML
 - CSS
 - Bootstrap
 - JS
 - PHP
- **Back-end**
 - Flask(Python)
- **Database**
 - My-SQL

6 Project Domain

To implement our idea, we'll develop a full stack web application. Technologies we're using for are as follows :

1. Flask

Flask is a micro web framework written in Python. It is classified as a micro framework because it does not require particular tools or libraries. It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions. However, Flask supports extensions that can add application features as if they were implemented in Flask itself. Extensions exist for object-relational mappers, form validation, upload handling, various open authentication technologies and several common framework related tools.

Note! Applications that use the Flask framework include Pinterest and LinkedIn

- (a) Second most stars on GitHub among Python web-development frameworks (As of October 2020)
- (b) The most voted popular web framework in the Python Developers Survey 2018.

Ref: [https://en.wikipedia.org/wiki/Flask_\(web_framework\)](https://en.wikipedia.org/wiki/Flask_(web_framework))

2. Jinja2 Templating Engine

Jinja is a web template engine for the Python programming language. Jinja provides Python-like expressions while ensuring that the templates are evaluated in a sandbox. It is a text-based template language and thus can be used to generate any markup as well as source code. The Jinja template engine allows customization of tags, [3] filters, tests, and globals. It allows the template designer to call functions with arguments on objects. Jinja is Flask's default template engine.

Ref: [https://en.wikipedia.org/wiki/Jinja_\(template_engine\)](https://en.wikipedia.org/wiki/Jinja_(template_engine))

3. MySQL Database

MySQL is a freely available open source Relational Database Management System (RDBMS) that uses Structured Query Language (SQL). It organises data into one or more data tables. It is the most popular language used to create, modify and extract data from the relational database, as well as control user access to the database. It is most noted for its quick processing, proven reliability, ease and flexibility of use.

MySQL is the second ranking RDBMS solution in the world, according to DB Engines. Its users include a wide range of websites and applications, including household brands like Spotify, Netflix, Facebook and Booking.com.

Ref: <https://www.mysql.com/>

4. HTML CSS

HTML (the Hypertext Markup Language) and CSS (Cascading Style Sheets) are two of the core technologies for building Web pages. HTML provides the structure of the page, CSS the (visual and aural) layout, for a variety of devices. Along with graphics and scripting, HTML and CSS are the basis of building Web pages and Web Applications.

Ref: <https://developer.mozilla.org/en-US/docs/Web/HTML>

5. Bootstrap

Bootstrap is a free and open-source tool collection for creating responsive websites and web applications. It is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first websites. Nowadays, the websites are perfect for all the browsers (IE, Firefox, and Chrome) and for all sizes of screens (Desktop, Tablets, Phablets, and Phones) due to bootstrap.

Ref: <https://getbootstrap.com/>

7 Project Scope

The future is and will remain unknown to us, but fact is that, till there is an issue of unemployment in the world of job market, the job portals will exist and will grow in proportionate with demand. Searching and landing up with a dream job is a tedious process for a job seeker and on the opposite hand, connecting with desirable candidates MySQL Database best fit for a job position is a challenging and important work for the employers.

This project is aimed at making such challenges much easier despite the geographic location of either the job seeker or the Company. Although a job search portal doesn't guarantee a job offer, it is the best place for potential candidates and employers to get connected and know more about each other.

It is a simple, efficient, convenient and systematic portal through which job seekers and employers connect with each other. Some of the existing and old-fashioned methods of recruitment involve advertisements in newspapers, posters, televisions, different job fairs, college career fairs etc.

However, such processes are costly and time taking. Handing over paper printed resumes, keeping a track of them, handling and processing them and then getting hold of the desirable candidate to be called for the interview it sounds like a lot of effort and hard work.

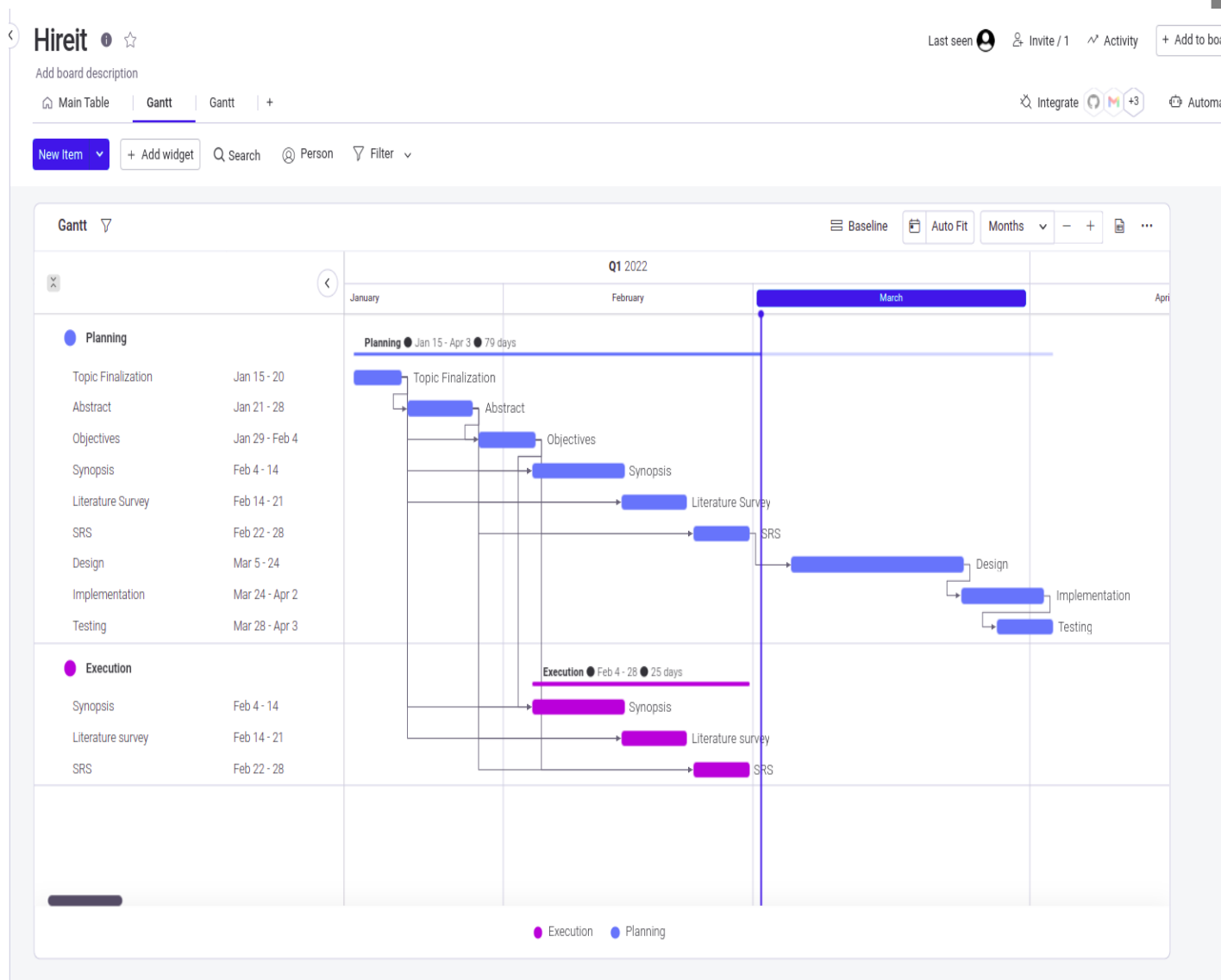
With the evolution of the world of the Internet and rapid technological advancement, such efforts can be minimised.

A job search portal web application comes to rescue at this point where a lot of meaningful time can be saved as well as the cost of advertisements

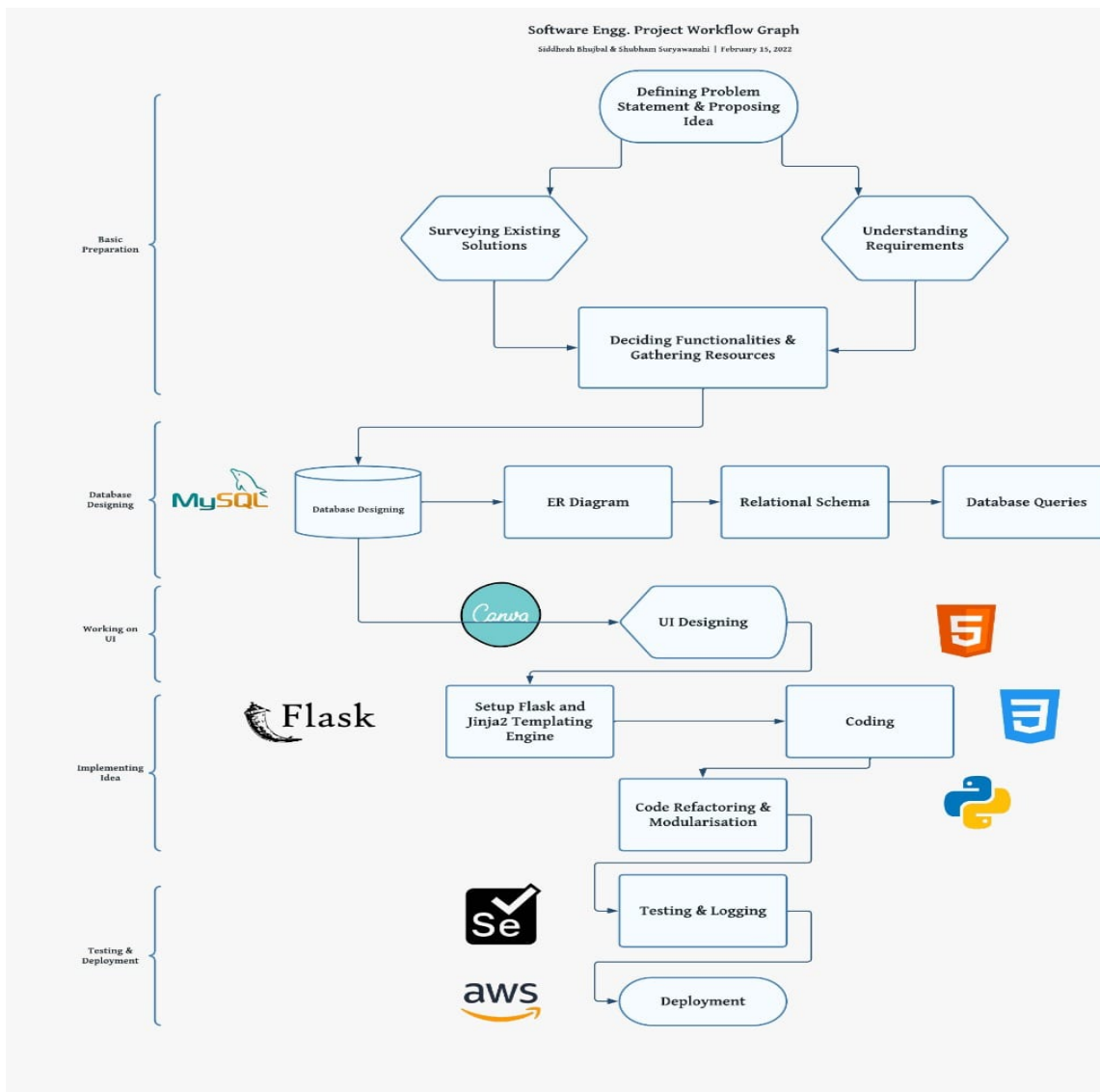
References

Job Portal-A Web Application for Geographically Distributed Multiple Clients

8 Gantt Chart



9 Workflow



10 Planning And Execution

Hireit

Add board description

Main Table

Gantt

Gantt

+

New Item

Search

Person

Filter

Sort

Integrate

Automate

Planning

	Person	Status	Date	Timeline	Dependent...	Cost	Status 1
Topic Finalization		Done	Jan-20	Jan 15 - 20	-	\$17,000	High
Abstract		Done	Jan-27	Jan 21 - 28	Topic Finalization	\$5,000	Medium
Objectives		Done	Feb-3	Jan 29 - Feb 4	Topic Final...	\$3,000	High
Synopsis		Done	Feb-14	Feb 4 - 14	Abstract	\$4,000	Medium
Literature Survey		Done	Feb-20	Feb 14 - 21	Topic Final...	\$1,000	Medium
SRS		Working on it	Feb 27	Feb 22 - 28	Abstract	\$3,000	High
Design			Mar 2	Mar 5 - 24	SRS	\$7,000	High
Implementation			Mar 16	Mar 24 - Apr 2	Design	\$7,000	Medium
Testing			Apr 6	Mar 28 - Apr 3	Implementation	\$4,000	Low
+ Add Item							

Jan 15 - Apr 3

High Medium Low

Execution

	Person	Status	Date	Timeline	Dependent...	Cost	Status 1
Synopsis		Done	Feb-14	Feb 4 - 14	Topic Final...	\$4,000	Medium
Literature survey		Done	Feb-20	Feb 14 - 21	Topic Final...	\$1,000	Medium
SRS		Working on it		Feb 22 - 28	Abstract	\$3,000	High
+ Add Item							

Feb 4 - 28

High Medium Low

+ Add new group

hyperref

SOFTWARE REQUIREMENTS SPECIFICATION

for

<HireIt>

Version 1.0 approved

Prepared by

<Siddhesh Bhujbal - 111903104 >
<Shubham Somwanshi - 111903102>

<Organization>

April 12, 2022

Contents

*Revision History

Name	Date	Reason For Changes	Version
21	22	23	24
31	32	33	34

Introduction

11 Purpose

As more companies are recruiting students for jobs virtually, especially during the pandemic, there is a need for an online Job Portal to connect both job seekers and companies for the recruitment process. The Job Portal would help boost a person's job seeking efforts and company's hiring process. The application will allow users to search and apply for jobs offered by different companies. Various features like creating and managing profile, uploading resume, checking interview schedules and results would help bridge the gap between job seekers and recruiters. The project mainly focuses on database design and its use to implement various functionalities.

12 Document Conventions

This document uses the following conventions.

Conventions	Name
DB	Database
DDB	Distributed Database
ER	Entity Relationship
HTML	Hypertext Markup Language
CSS	Cascading Style Sheets
JS	Javascript
KRA	Key responsibility Areas
PHP	PHP: Hypertext Preprocessor
SQL	Structured Query Language

13 Intended Audience and Reading Suggestions

This project is a prototype for the Job Portal System and it is open for all job Seekers, college students. This has been implemented for the job hiring system. This project is useful for the job seekers, interns as well as to the companies for hiring. The purpose of the online job portal system is to ease hiring management and to create a convenient and easy-to-use application for all participants as well as for the company, trying to find jobs. The system is based on a relational database with its job management and hiring process. We will have a database server supporting thousands of major company around the world as well as thousands of jobs by various companies. Above all, we hope to provide a ease to user experience and to company along with the best job matching criteria available.

14 Project Scope

The future is and will remain unknown to us, but fact is that, till there is an issue of unemployment in the world of job market, the job portals will exist and will grow in proportionate with demand. Searching and landing up with a dream job is a tedious process for a job seeker and on the opposite hand, connecting with desirable candidates My-SQL Database best it for a job position is a challenging and important work for the employers. This project is aimed at making such challenges much easier despite the geographic location of either the job seeker or the Company. Although a job search portal doesn't guarantee a job offer, it is the best place for potential candidates and employers to get connected

and know more about each other. It is a simple, efficient, convenient and systematic portal through which job seekers and employers connect with each other. Some of the existing and old-fashioned methods of recruitment involve advertisements in newspapers, posters, televisions, different job fairs, college career fairs etc. However, such processes are costly and time taking. Handing over paper printed resumes, keeping a track of them, handling and processing them and then getting hold of the desirable candidate to be called for the interview it sounds like a lot of hard work. With the evolution of the world of the Internet and rapid technological advancement, such efforts can be minimised. A job search portal web application comes to rescue at this point where a lot of meaningful time can be saved as well as the cost of advertisements

15 References

Job Portal - A Web Application for Geographically Distributed Multiple Clients [hyperref https://doi.org/10.1109/AIMS.2019.00011](https://doi.org/10.1109/AIMS.2019.00011)

Job Portal - A Web Application for Geographically Distributed Multiple Clients-2 <https://www.researchgate.net/publication/348111111>
Overall Description

16 Product Perspective

Online Job Portal is developed for everyone indulged for Job finder in various companies, websites, who would want to find online job. The purpose of the online job portal system is to ease hiring management and to create a convenient and easy-to-use application for all participants as well as for the company, trying to find jobs. The system is based on a relational database with its job management and hiring process. We will have a database server supporting thousands of major company around the world as well as thousands of jobs by various companies. Above all, we hope to provide a ease to user experience and to company along with the best job matching criteria available.

17 Product Functions

- Job seekers will be able to register and login to the portal.
- Job seekers can create and update their academic profile
- Job seekers would also be able to upload their resume on the website.
- Job seekers can search and apply for multiple job vacancies posted by various companies.
- They can see all the details for a particular job on the website.
- Job seekers can view all the jobs they have applied for in their profile.
- Applicants will be able to view their interviews scheduled by companies on the portal.
- Applicants can see their result status declared by the companies for the jobs they had applied for
for Job seekers can also view their account details and account summary.

18 User Classes and Characteristics

18.1 Login Register

Login is a default feature that allows workspace access for users that have been invited to the workspace by an admin. Registration is an optional feature that can be enabled to allow anyone (or specified domains) to join/register to the workspace by themselves.

To register means creating a new user account, that is a record in the database describing how you will prove your identity.

18.2 Create profile

CREATE PROFILE statement to create a profile, which is a set of limits on database resources. If you assign the profile to a user, then that user cannot exceed these limits. Enable resource limits dynamically with the ALTER SYSTEM statement or with the initialization parameter RESOURCE LIMIT. This parameter does not apply to password resources. Password resources are always enabled.

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Administrator able to post the company details as well as location and requirements for the company.

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18.12 Declare Result

Result declaration and ranking will display on website.

18.13 Different login

There will be separate login option for normal user and administrator.

19 Operating Environment

Operating environment for the Online job portal system is as listed below.

- distributed database
- client/server system
- Operating system: Windows, Ubuntu, mac
- database: SQL+ database
- platform: vb.net/Java/PHP
- Back-end: flask

20 Design and Implementation Constraints

Hireit is a web application developed. The APIs used for the backend handling and communication will be built on flask.

The front-end will be implemented using a suitable framework/ library like Bootstrap and the backend will consist of a backend framework like Express. Internet connectivity is a must for using this application as all data is stored on remote servers on the Internet and none of the data is stored locally on the user's device.

21 User Documentation

The application will be fairly intuitive to use for a regular online application user. User documentation / README will be provided within the UI, which will describe the system architecture and other documentation.

22 Assumptions and Dependencies

It is assumed that the users are familiar with an internet browser and also familiar with handling the keyboard and the mouse. Since the application is a web-based application there is a need for an internet browser. It will be assumed that the users will possess decent internet connectivity. Furthermore, as the application will implement an email based login authorization, it will be assumed that the users have a valid Email Id and education.

For smooth functioning of the application, it is assumed that the client device has enough memory, processing power, and internet connectivity. The system requirements of the application are met.

External Interface Requirements

23 User Interfaces

The system shall provide a uniform look and feel between all its web pages. The various user interfaces that the system includes are as follows:

- Welcome/Login interface.

- Register/Sign Up Interface
- User-specific profile view.
- job matching view
- Recommendation Jobs Interface.
- Add and edit profile.
- Search job.
- Help user interface - About interface.

24 Hardware Interfaces

Since the application runs over the internet it can be accessed from Desktops supporting web browsers, since the system uses the database service no local installation is required, however, the hardware required for internet connectivity is must.

25 Software Interfaces

- Libraries like flask is used in backend.
- Browser support Online Job Portal being a web application will be compatible with any browser such as Internet Explorer, Chrome, Microsoft Edge, Netscape Navigator, etc.
- Packages and libraries to implement the UI for the frontend and functionalities for the backend.

26 Communications Interfaces

Hireit will predominantly use the Hypertext Transfer Protocol (HTTP) for communication over the internet over port 80 and intranet communication will be through TCP/IP protocol suite.

Our application will use an upload resume for application. This will employ a service typically using a communications standard like FTP.

System Features

27 System Feature 1

27.1 Description and Priority

Finding new talent in the market is incredibly difficult and HR managers across the country have tried different methods of recruitment in order to find the best possible candidates for their organizations. The traditional recruitment method has served well in the past years and provided companies with great candidates. But it has its pitfalls. It is time-consuming and also high in cost.

With the advent of technology, modern recruitment methods should come up, which should open new channels and ways of recruiting. The employee is an integral part of the organization and recruiting new employees who will improve the organization and take it forward is easier said than done. That's what we thought of developing Hireit application.

The Hireit is an online job portal aiming to connect job seeker and companies looking for employees. We focus on improving company's hiring process. There are 3 views points of this application : Job Seeker, HRs and Portal Admin. It provides various features like creating and editing profile, uploading resume, search and apply for jobs, check interview status and finally result history, etc for job seeker. Companies can register themselves, publish job opportunities, access applicant details and resume, schedule interview and declare results. Admin can process request registration for companies and provide applicants' information to companies.

27.2 Stimulus/Response Sequences

- Company Registration
- Publish Job Details / Opportunities
- Applicant Registration
- Filling/Editing Profile
- Uploading Resume
- Search Jobs
- Apply Job
- Schedule Interview
- Announce Result
- View Result History

27.3 Functional Requirements

- Applicant will be able to register and login to the portal
- Application will be able to logout successfully
- Applicant can create and update their academic profile
- Applicant would also be able to upload their resume on the website
- Applicant can search and apply for multiple job vacancies posted by various companies. They can see all the details for a particular job on the website
- Applicant can view all the jobs they have applied for in their profile
- Applicants will be able to view their interviews scheduled by companies on the portal
- Applicants can see their result status declared by the companies for the jobs they had applied for
- Job seekers can also view their account details and account summary
- Companies can register themselves via Admin
- Companies can post job vacancies and job description
- Companies can schedule interview round for applicable students and announce results for the same
- Admin can only register companies and gives applicants' details and resume to company authorities

Nonfunctional Requirements

28 Performance Requirements

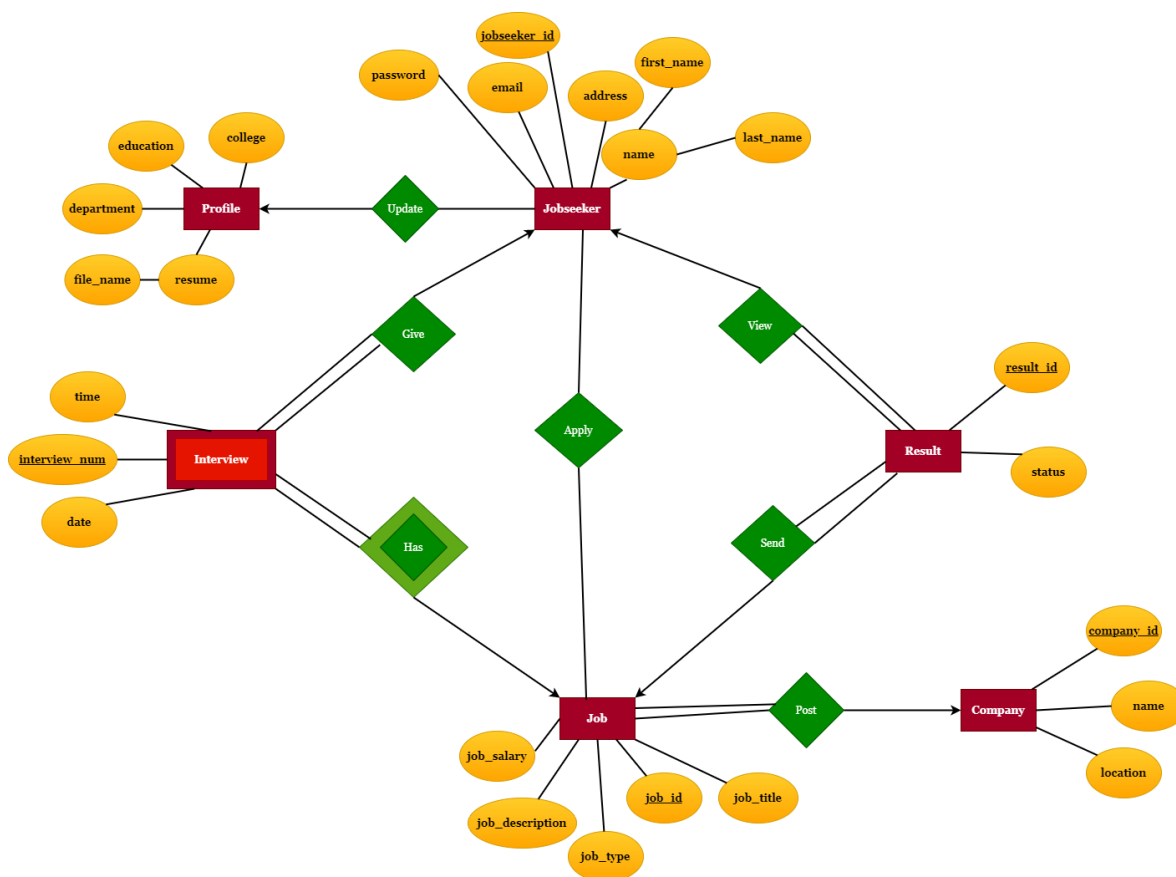
Application's performance not only depends on application design also on Customers System's Configuration (both Hardware and Software), Internet Access Speed, networks and Others. Even though the performance is not only depends on application design, our application design and implementation also responsible for the Performance.

Following is the description of methods to take care of performance :

• ER Diagram

The E-R Diagram constitutes a technique for representing the logical structure of a database in a pictorial manner. This analysis is then used to organize data as a relation, normalizing relation and finally obtaining a relation database.

- **ENTITIES:** Which specify distinct real-world items in an application.
- **PROPERTIES/ATTRIBUTES:** Which specify properties of an entity and relationships.
- **RELATIONSHIPS:** Which connect entities and represent meaningful dependencies between them.



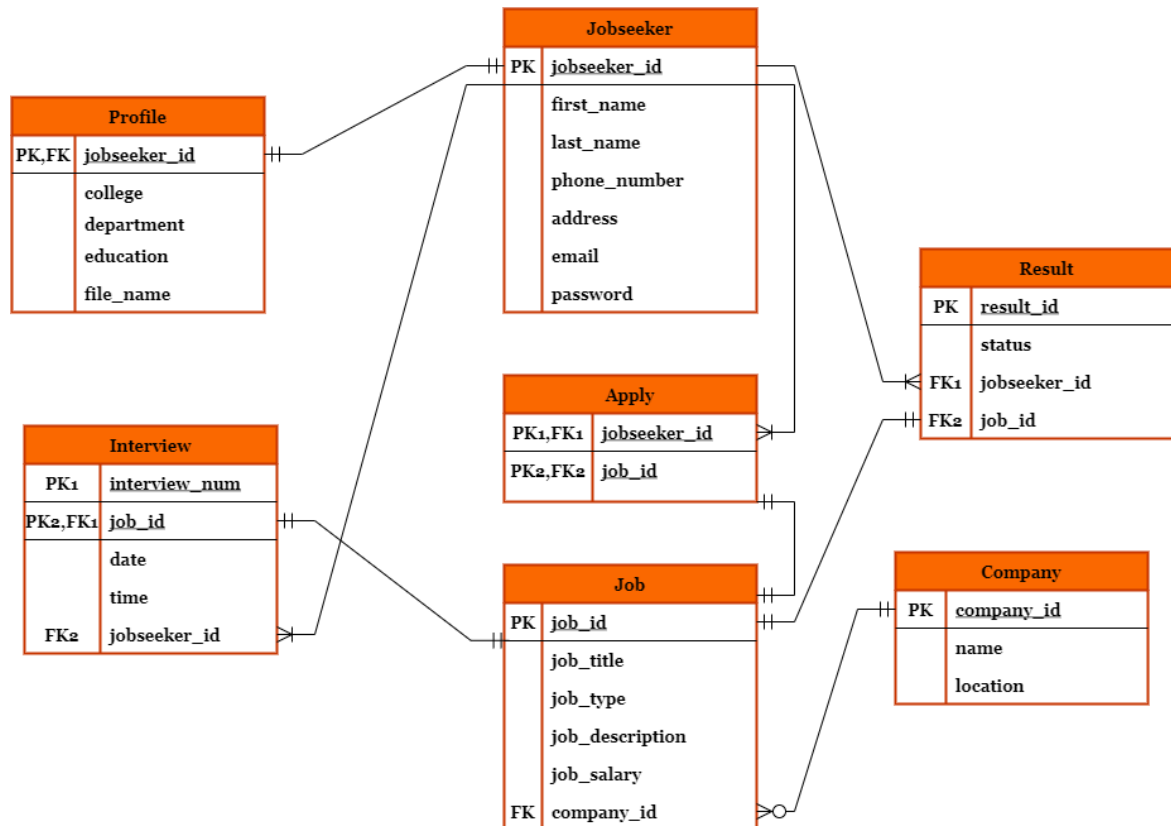
• Normalization

The basic objective of normalization is to reduce redundancy which means that information is to be stored only once. Storing information several times leads to wastage of storage space and increase in the total size of the data stored.

If a database is not properly designed it can give rise to modification anomalies. Modification anomalies arise when data is added to, changed or deleted from a database table. Similarly, in traditional databases as well as improperly designed relational databases, data redundancy can be a problem. These can be eliminated by normalizing a database.

Normalization is the process of breaking down a table into smaller tables. So that each table deals with a single theme. There are three different kinds of modifications of anomalies and formulated the first, second and third normal forms (3NF) is considered sufficient for most practical purposes. It should be considered only after a thorough analysis and complete understanding of its implications.

- **RELATIONAL SCHEMA:** Relation schema defines the design and structure of the relation like it consists of the relation name, set of attributes/field names/column names. every attribute would have an associated domain. After designing the ER diagram of system, we need to convert it to Relational models which can directly be implemented by any RDBMS like Oracle, MySQL etc.



- **UI Designing** A user interface is the point of contact a person has with an app, website, or software. User interface (UI) design is the process of building interfaces in software or computerized devices, focusing on looks or style. Designers aim to create interfaces which users find easy to use and pleasurable. Few of the designs made for Hireit are as follows : @hireit.com

Online-jobPortal/Interview - X | Profile - hire!t

http://localhost:5000/profile

hire!t Home Jobs Interviews Results Profile Logout Siddhesh

Profile Details

College: COEP
 Department: Computer Engg
 Education Details: CGPA : 8.36 HSC Score : 91.6% SSC Score : 93.8%
 Resume: [Assignment 5.docx](#)
[Edit Profile](#)

Applied Jobs

#	Job Title	Category	Company	Location	Salary
1	Data Analyst	Intern	Wells Fargo	Benglore	1100
2	Machine Learning	Intern	Barclays	Pune	876

Made with by Shreeraj and Siddhesh

Activate Windows
Go to Settings to activate Windows.

24°C Haze 10:15 AM 11/6/2021

Online-jobPortal/Interview - X | hire!t

http://localhost:5000

hire!t Home Jobs Interviews Results Profile Logout Siddhesh

hire!t
 Welcome to the right place, at the right time
 Where the best set of talent, meets the right set of opportunities.
[Get Started](#)

Made with by Shreeraj and Siddhesh

Activate Windows
Go to Settings to activate Windows.

24°C Haze 10:14 AM 11/6/2021

Online-jobPortal/Interview - X | Job Search - hire!t

http://localhost:5000/jobs

hire!t Home Jobs Interviews Results Profile Logout Siddhesh

Search for Jobs

Keywords: Location: [Search](#)

Data Analyst - Intern

Category Intern
Company Wells Fargo
Location Benglore
Salary \$1100/ month
Description A successful data analyst needs to have a combination of technical as well leadership skills. A background in Mathematics, Statistics, Computer Science, Information Management, or Economics can serve as a solid foundation to build your career as a data analyst.
[Apply](#)

Made with by Shreeraj and Siddhesh

Activate Windows
Go to Settings to activate Windows.

24°C Haze 10:15 AM 11/6/2021

29 Safety Requirements

If there is extensive damage to a wide portion of the database due to catastrophic failure, such as a disk crash, the recovery method restores a past copy of the database that was backed up to archival storage (typically tape) and reconstructs a more current state by reapplying or redoing the operations of committed transactions from the backed up log, up to the time of failure.

Applicant must need to register first in order to access functionalities offered by Hireit. Authentication can provides access control for systems by checking to see if a user's credentials match the credentials in a database of authorized users or in a data authentication server.

Authorization is a security mechanism to determine access levels or user/client privileges related to system resources including files, services, computer programs, data and application features.

30 Security Requirements

Security systems need database storage just like many other applications. However, the special requirements of the security market mean that vendors must choose their database partner carefully.

31 Software Quality Attributes

Software quality product is its fitness of purpose i.e. a quality product does precisely what the users want it to do. The fitness of use is generally explained in terms of satisfaction of the requirements mentioned. Our application meets following software quality attributes.

- **Portability:**
Hireit is freely made to work in various operating system environments, in multiple machines, with other software products, etc.
- **Reusability:**
Hireit has excellent reusability as different modules of the application can quickly be reused to develop other similar apps.
- **Correctness:**
A software product is correct if various requirements as specified in the SRS document have been correctly implemented.
- **Maintainability:**
Application is maintainable as bugs can be easily corrected as and when they show up, new tasks can be easily added to the product, and the functionalities of the product can be easily modified, etc.
- **Usability:**
Application is user-friendly due to utilising a system effectively.
- **Scalability:**
Application can handle the demand for stress caused by increased usage without decreasing performance in future.
- **Flexibility:**
Application is adaptable for future updates/changes.
- **Performance:**
Application is in the form of responsiveness to various actions.

Other Requirements <Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>

32 Glossary

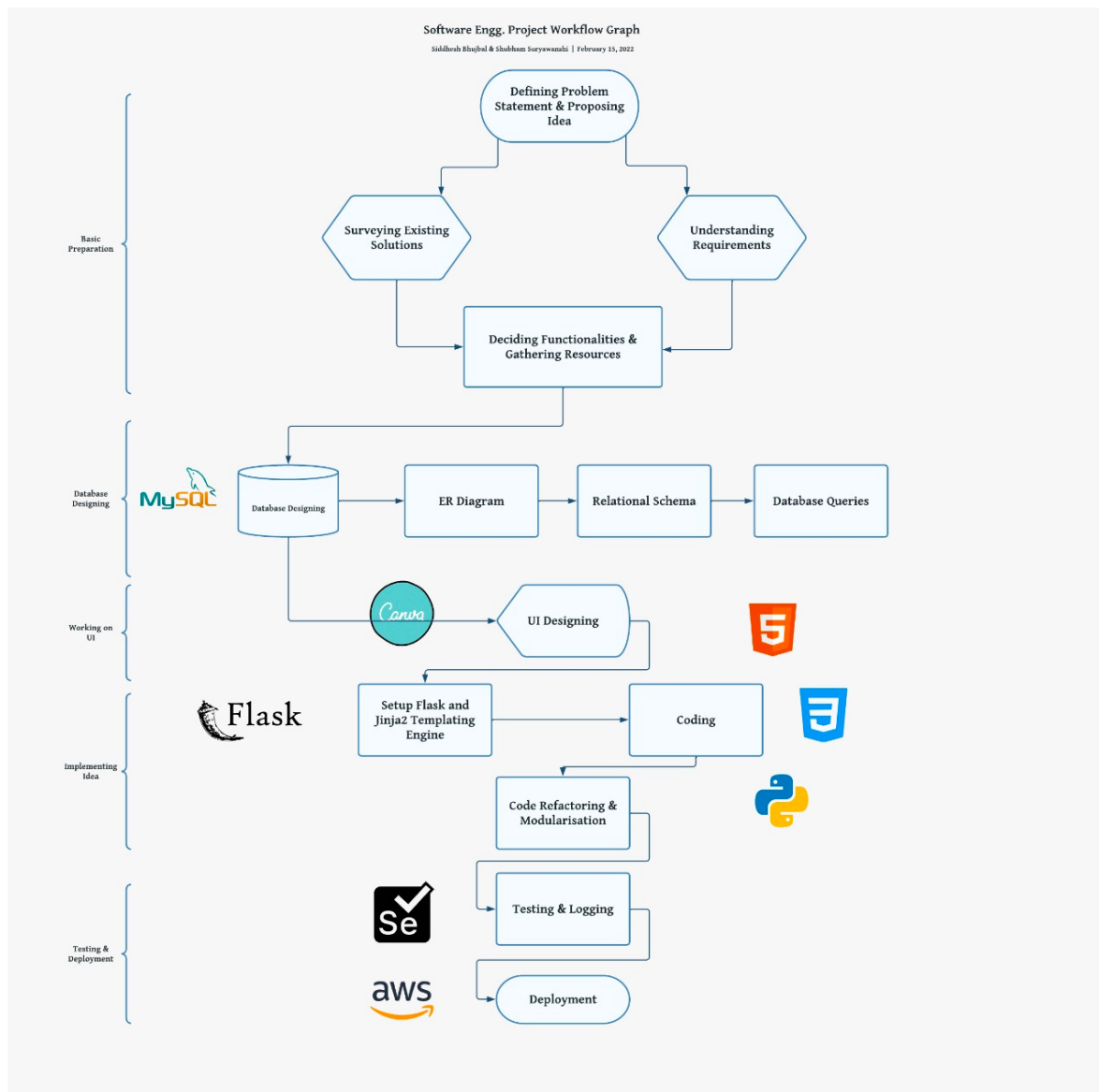
- **1NF :**
First normal form (1NF) is a property of a relation in a relational database. A relation is in first normal form if and only if no attribute domain has relations as elements.[1] Or more informally, that no table column can have tables as values (or no repeating groups).
- **2NF :**
Second Normal Form (2NF) is based on the concept of full functional dependency. Second Normal Form applies to relations with composite keys, that is, relations with a primary key composed of two or more attributes. A relation with a single-attribute primary key is automatically in at least 2NF.
- **3NF :**
A relation is in third normal form, if there is no transitive dependency for non-prime attributes as well as it is in second normal form.
- **Admin :**
Administrator view and manage user permissions in an application.
- **Attribute :**
An attribute is a characteristic. In a database management system (DBMS), an attribute refers to a database component, such as a table. It also may refer to a database field. Attributes describe the instances in the column of a database.
- **Authentication :**
Authentication is the process of verifying who someone is.
- **Authorisation :**
Authorization is the process of verifying what specific applications, files, and data a user has access to.
- **Correctness :**
The application should be correct in terms of its functionality, calculations used internally and the navigation should be correct. This means that the application should adhere to functional requirements.
- **Credentials :**
Credentials refer to the verification of identity or tools for authentication. They may be part of a certificate or other authentication process that helps confirm a user's identity in relation to a network address or other system ID.
- **Database :**
A database (DB), in the most general sense, is an organized collection of data. More specifically, a database is an electronic system that allows data to be easily accessed, manipulated and updated. In other words, a database is used by an organization as a method of storing, managing and retrieving information. Modern databases are managed using a database management system (DBMS).
- **Functional Dependency :**
Functional dependency is a relationship that exists when one attribute uniquely determines another attribute.
- **Entities :**
An entity is any singular, identifiable and separate object. It refers to individuals, organizations, systems, bits of data or even distinct system components that are considered significant in and of themselves.
- **ER Diagram :**
An entity-relationship diagram (ERD) is a data modeling technique that graphically illustrates an information system's entities and the relationships between those entities. An ERD is a conceptual and representational model of data used to represent the entity framework infrastructure.

- **Flexibility :**
Application should be flexible enough to modify, Adaptable to other products with which it needs interaction and should be easy to interface with other standard 3rd party components.
- **Gantt chart :**
A Gantt chart, commonly used in project management, is one of the most popular and useful ways of showing activities (tasks or events) displayed against time.
- **Maintainability :**
Different versions of the product should be easy to maintain. For development, it should be easy to add code to the existing system, should be easy to upgrade for new features and new technologies from time to time. Maintenance should be cost-effective and easy. The system is easy to maintain and correct defects or make a change in the software.
- **Normalisation :**
Normalization is a database design technique that reduces data redundancy and eliminates undesirable characteristics like Insertion, Update and Deletion Anomalies. Normalization rules divides larger tables into smaller tables and links them using relationships. The purpose of Normalisation in SQL is to eliminate redundant (repetitive) data and ensure data is stored logically.
- **Partial Dependency :**
If the proper subset of candidate key determines non-prime attribute, it is called partial dependency.
- **Performance :**
Performance is an indicator of how well a software system or component meets its requirements for timeliness. Performance Metrics : Performance metrics are used to measure the behavior, activities, and performance of a business.
- **Portability :**
This can be measured in terms of Costing issues related to porting, Technical issues related to porting, and Behavioral issues related to porting.
- **Privilege :**
Privilege, in computer security, means delegating authority for making changes to a computer system.
- **Redundancy :**
Redundancy means having multiple copies of same data in the database. Relational Schema : Relation schema defines the design and structure of the relation like it consists of the relation name, set of attributes/field names/column names. every attribute would have an associated domain.
- **Relationship :**
A relationship in a DBMS, is primarily the way two or more data sets are linked.
- **Reusability :**
Software reuse is a good cost-efficient and time-saving development method. Different code library classes should be generic enough to be easily used in different application modules. Divide the application into different modules so that modules can be reused across the application. Scalability.
- **UI Designing :**
User interface (UI) design is the process designers use to build interfaces in software or computerized devices, focusing on looks or style.
- **Usability :**
This can be measured in terms of ease of use. The application should be user-friendly. It should be easy to learn. Navigation should be simple. User Interface : The user interface (UI) is the point of human-computer interaction and communication in a device.

33 Analysis Models

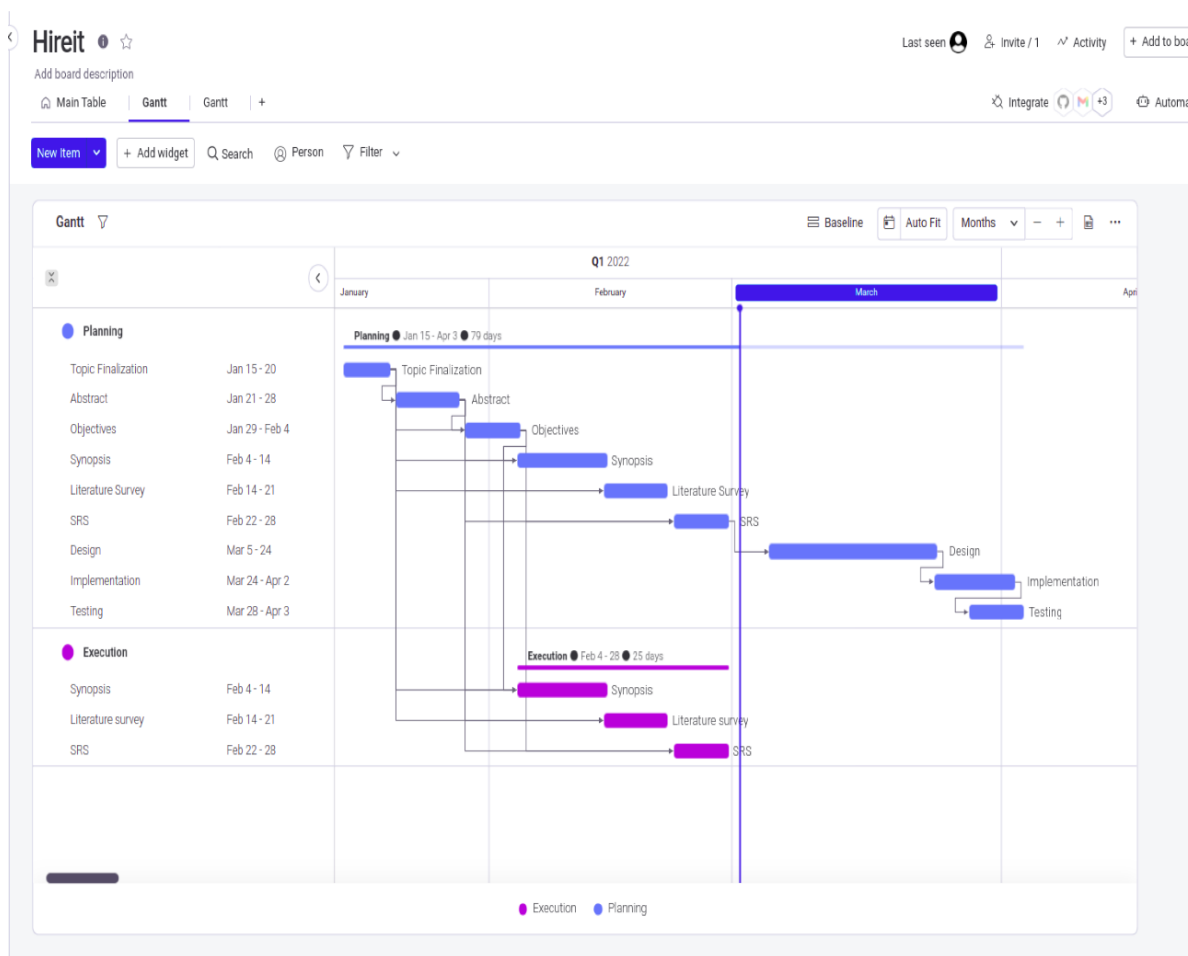
33.1 FlowChart

Following diagram shows the connections between different stages of a process or parts of application :



33.2 Gantt chart : Project Planning

A Gantt chart, commonly used in project management, is one of the most popular and useful ways of showing activities (tasks or events) displayed against time. On the left of the chart is a list of the activities and along the top is a suitable time scale. Each activity is represented by a bar; the position and length of the bar reflects the start date, duration and end date of the activity. This allows you to see at a glance:



33.3 Project Cost Estimation Analysis

Project cost estimating is when a business predicts the overall cost of a project by accurately outlining its scope of work. It requires looking at the tasks, duration, and resources required to forecast a project's total cost to deliver. Following image shows cost estimation of Hireit :

Hireit

Add board description

Last seen

Invite / 1

Activity

+ Add to board

Main Table

Gantt

Gantt

+

Integrate

+

Automate

New Item

Search

Person

Filter

Sort

Planning

	Person	Status	Date	Timeline	Dependent...	Cost	Status 1	
Topic Finalization		Done	Jan 29	Jan 15 - 20	-	\$17,000	High	
Abstract		Done	Jan 27	Jan 21 - 28	Topic Finalization	\$5,000	Medium	
Objectives		Done	Feb 8	Jan 29 - Feb 4	Topic Final...	\$3,000	High	
Synopsis		Done	Feb 14	Feb 4 - 14	Abstract	\$4,000	Medium	
Literature Survey		Done	Feb 20	Feb 14 - 21	Topic Final...	\$1,000	Medium	
SRS		Working on it	Feb 27	Feb 22 - 28	Abstract	\$3,000	High	
Design			Mar 2	Mar 5 - 24	SRS	\$7,000	High	
Implementation			Mar 16	Mar 24 - Apr 2	Design	\$7,000	Medium	
Testing			Apr 6	Mar 28 - Apr 3	Implementation	\$4,000	Low	
+ Add Item								

Jan 15 - Apr 3

Execution

	Person	Status	Date	Timeline	Dependent...	Cost	Status 1	
Synopsis		Done	Feb 14	Feb 4 - 14	Topic Final...	\$4,000	Medium	
Literature survey		Done	Feb 20	Feb 14 - 21	Topic Final...	\$1,000	Medium	
SRS		Working on it		Feb 22 - 28	Abstract	\$3,000	High	
+ Add Item								

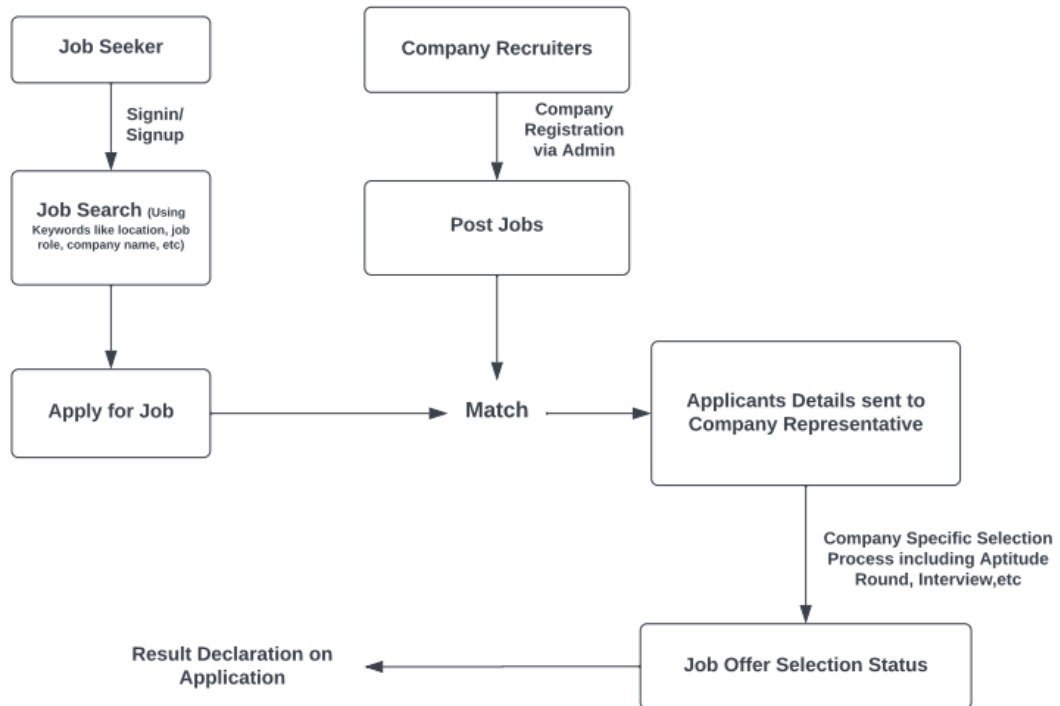
Feb 4 - 28

+ Add new group

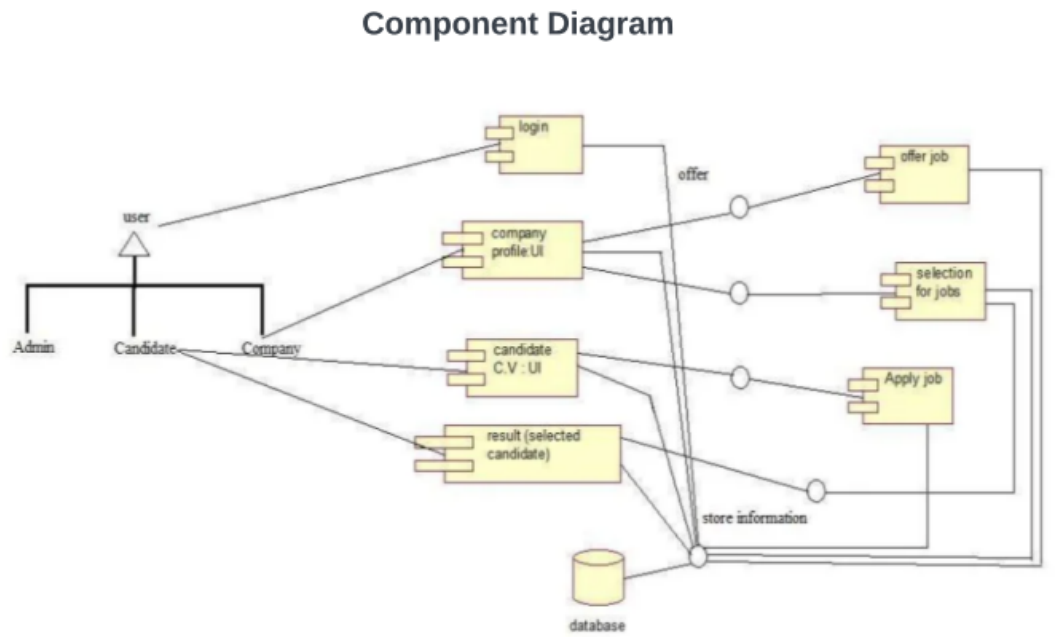
34 Diagram

34.1 System Architecture

System Architecture of Hireit Application

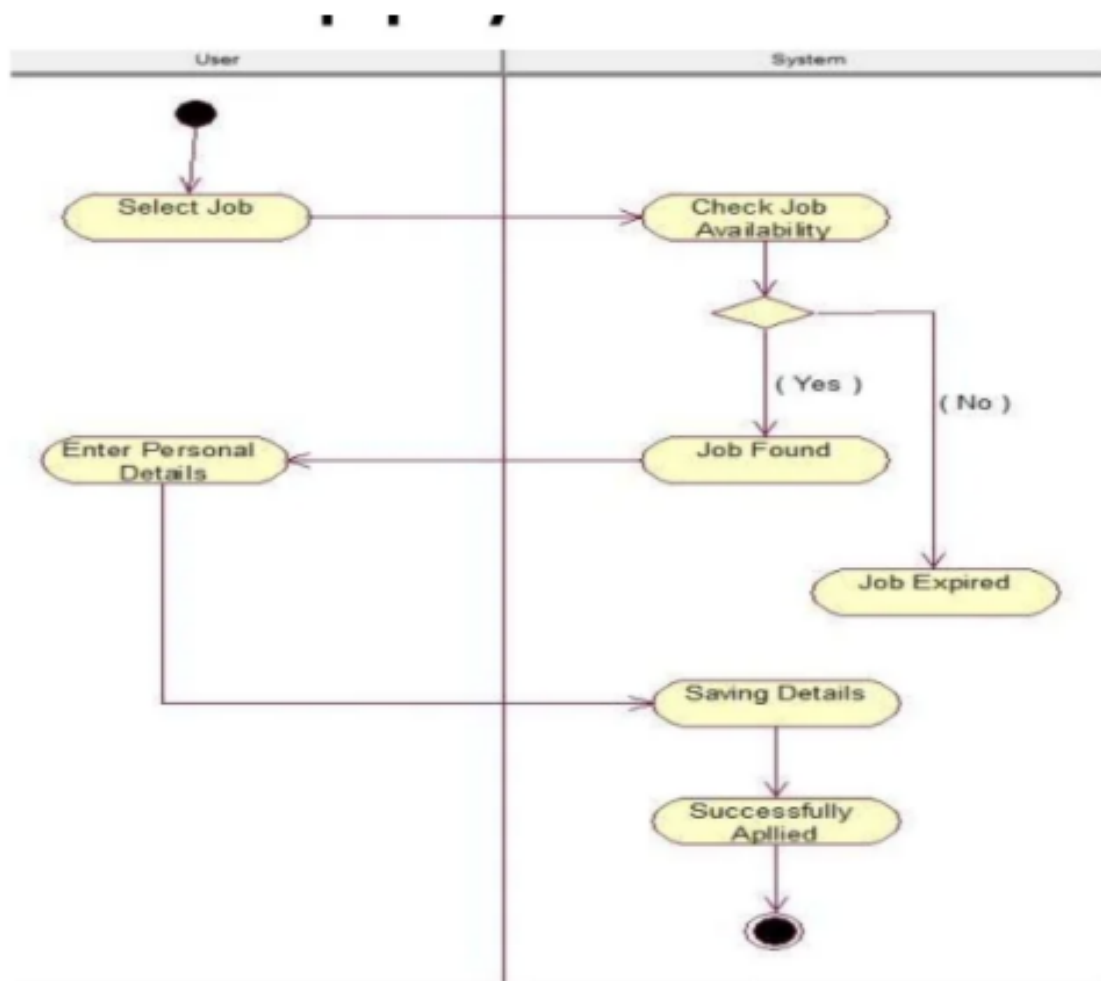


34.2 Component Diagram



34.3 Activity Diagram 1

Apply Jobs Activity Diagram



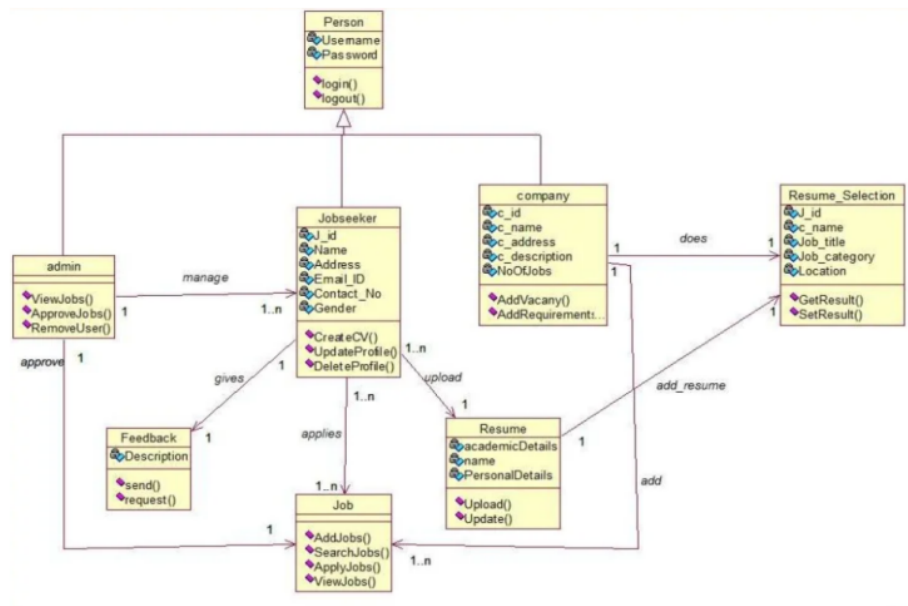
34.4 Activity Diagram 2

Job Search Activity Diagram



34.5 Class Diagram

Class Diagram



35 Advantage - Disadvantage

Online Recruitment is a way for companies and recruiters to use the internet to find and interact with candidates and eventually extend a job offer. You can post job openings online, email candidates, and even set up interviews via video calls with online recruitment. Many job searchers rely on the internet to find open jobs. As a result, it makes sense that you might try online recruitment methods to enhance your candidate search. Keeping this in mind, we tried to provide solution for it. Let's see some aspects covering constraints, advantages and disadvantages over existing solutions.

35.1 Constraint

1. Company need to contact admin for registration because without registration of company, job vacancies for those company can't be posted.
2. Afterwards company recruiting people should keep in touch with admin for posting job details on Hireit.
3. Also for getting details about applicants, HRs need to get it from admin.
4. For announcing results, HRs needs to talk to admin for the same.
5. Posting interview schedule / result company people needs to rely on admin.
6. User needs to signup/signin to access functionality provided by Hireit application.
7. User needs to create his/her profile before applying to any available job.

35.2 Advantage

1. Hireit app is very handy, easy to use and convenient
2. Application provides user friendliness
3. It provides attractive and modern interface including vector images and animation
4. User can provide details and also upload resume
5. User can also update his/her profile
6. User can see account summary (of rejection / success)
7. User can see job history and analyse the stages of recruiting process
8. User can filter out job according to his/her preference and keywords like company name, job role, location, etc

35.3 Disadvantage

1. Company needs to rely on admin for almost most of the time.
2. If admin is busy then company can't able to post their job vacancies.
3. It gives rise to delay from providing details to admin till admin posting on application (In technical terms, adding details to database).
4. Some of the job portal, provides very advanced features like resume generation.
5. Also Hireit provides very less information about applicants as it itself takes very less information from applicant.
6. Also Hireit don't do web scrapping for getting information of jobs.
7. It could have given suggestions based on user's profile and his/her past history.