Experiment No.: *1*

AIM: Write SRS

THEORY:

Software Requirements Specification
For

Job Recruitment System

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1. Introduction

1.1 Purpose

The proposed system bridges the gap between the recruiters and job seekers, by reducing the time and cost of running for job interviews from one place to another. By uploading resumes and setting job search criteria by the job seekers, the recruiters can browse the web application. Recruiters will have the freedom to post the particular jobs with their requirements, can filter their search query, check out the resumes of job seekers, can create their profiles. Job seekers can able to search job on the basis of various category such as organization wise, using their skills, location wise, job type.

1.2 Document Conventions

For Main Heading:
Font size: 18, Font: Times New Roman, Font Type: Bold

For Sub Heading:
Font size: 14; Font: Times New Roman, Font Type: Bold

For Content:
Font size: 12, Font: Times New Roman, Font Type: Regular

1.3 Intended Audience

The intended audience of this document includes faculty members in the Department, the students looking for placements, company HR and job seeker looking for jobs.

1.4 Product Scope

The project targets the HR Departments of hiring companies, where the recruiters can upload jobs and look out for candidates with the required skills for the job. On the other hand, those seeking for jobs choose from various jobs available. The main modules of the system are Admin, Recruiter and Job Seeker

Aim: To develop an object-oriented system for Job Recruitment Process using Java to bridge the gap between recruiters and job seekers

Objective
1. To understand the object-oriented approach for designing a software application
2. To identifying the classes for the application, the main being the recruiter and job seeker
3. To understand the system requirements along with reports using questionnaire and interviews
4. To make a User-Friendly Interface
5. To get the maximum Jobs Listing fro job seekers to apply for
6. To get the Find Desired Job for Jobseekers in Minimum Time

7. To Find Desired Jobseekers for Employer in Minimum Time
8. To provide Proper Security and Privacy to All Users through authentication of user
9. To allow admin to manage the overall system
10. To release the project after testing and modification for enhance user experience throughout.

Modules: -
I. Admin
   1. Login/Logout
   2. Manage recruiters/job Seekers

II. Recruiter
   1. Register
   2. Login/Logout
   3. Create Job
   4. Schedule Interview
   5. Edit Profile
   6. View Job Seekers
   7. Feedback

III. Job Seeker
   1. Register
   2. Login/Logout
   3. Search for Jobs
   4. Apply for Jobs
   5. Check Interview
   6. Edit Profile
   7. Upload Resume
   8. Feedback

1.5 References

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2. Overall Description

2.1 Product Perspective

The Job Recruitment System provides searching of jobs by the job seekers listed. The Recruiter/HR Departments of the companies posting jobs available. The Admin approving the recruiters and job seekers to keep authenticity. It manages the database of jobs, companies, HR Departments, job seekers, skills, resumes.

The external view of the project

- Admin: He is the central manager of the system who manages the users on the system mainly being job seeker and recruiter. He/she decides if a user is valid or is it a bogus account, if he sees any malicious activity or illegal jobs posted he caters to its management.
- Job Seeker: The main user of the system, who is looking for job. He/she fills in details about skills and uploads the resume, after which he can search for the jobs that have been posted on the system according to the filters to be applied. Later, if suitable he can apply for the job and thereafter wait for the response from the recruiter for interview.
- Recruiter: The stakeholder of the system, the one that uploads the jobs on the system for employment. He/she can search for a particular job seeker based on his skills. He/she can schedule the interviews for the job.
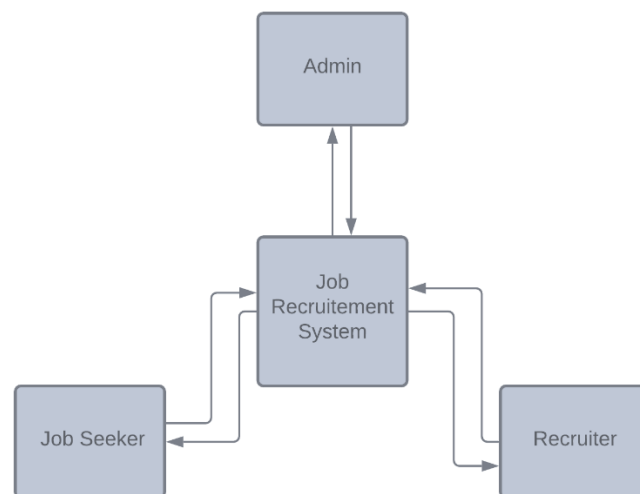
2.2 Product Features

Admin

  i. Login/Logout: This will help users to login into the system using id and password. A user who has the valid id and password can only login to their respective accounts.

  ii. Manage recruiters/job Seekers: It verifies and authorizes the accounts of a user, that can be either a recruiter or a job seeker, to ensure minimum fake jobs and scams to occur.

Recruiter

  i. Register: In this segment, we will register the new user of the system by entering the required details, this will then be approved by the admins.

  ii. Login/Logout: This will help users to login into the system using id and password. A user who has the valid id and password can only login to their respective accounts.

  iii. Create Job: In this interface, the recruiter who has registered themselves in the system can post the jobs. They can give the requisition specifying the post and skill needed for that post. It also implies the criteria of recruitment the Recruiter has planned for the post.

  iv. Schedule Interview: Once, a recruiter is satisfied with the skills and resume of a job seeker he can schedule an interview for the job of that job seeker, for knowing him further, if he is a feasible candidate or not

  v. Edit Profile: The recruiter can make modifications in his profile containing personal details, job details and other information

  vi. View Job Seekers: The recruiter can search a particular job seeker according to his skills or past positions

  vii. Feedback: The recruiter can give a feedback about the system or report any bugs if found

Job Seeker

  i. Register: In this segment, we will register the new user of the system, by entering the required details.

  ii. Login/Logout: This will help users to login into the system using id and password. A user who has the valid id and password can only login to their respective accounts.

  iii. Search for Jobs

  iv. Apply for Jobs: This module is for the job seeker where they can search all the requisition present in the system. One can filter the search based on their skill and experience of the job. Ones selected a requisition applicant can apply for the post.

  v. Edit Profile: This feature allows the job seeker to update his/her skills and profile

  vi. Check status for the job application applied to

  vii. Upload Resume: The job seeker has an option to upload a file as his resume to let the recruiter know more about his work positions and educational information, projects and more

  viii. Feedback: The recruiter can give a feedback about the system or report any bugs if found

2.3 User Classes

The user classes are: -
1. Admin: Who administrated the overall system by allowing job seekers and recruiters into the system and ensuring authentic entry into the system
2. Job Seeker: The main task is to search from jobs available and update the skills and resume.
3. Recruiter: Uploading of valid vacant jobs for the company and selecting candidate for interview
4. Interview: A recruiter schedules an interview process for the job seeker
5. Job: It is posted by a recruiter for a company and job seeker applies for one.

2.4 Operating Environment

No. of machine: 1.

Processor: Pentium 4 & upward.

Hard disk: 80 GB

RAM: 256 MB & upward

Java: JDK8.1, JRE8.0

Server: Apache tomcat 7.0

Database: Oracle10g

Operating system: Windows-xp & upward

2.5 Design and Implementation Constraints

The following semantic integrity and constraint explicitly are imposed by the s/w developed. These constraints are applied by keeping in mind customer requirements as well as consistent working of the system: -

Module Name	Applied constraint to maintain data integrity
JOB SEARCH	o Search query need to be entered else entry denied. o Only registered job seekers can search for job.
POST JOB	o Only registered recruiters can post jobs. o Job details need to be entered otherwise denied.
JOB STATUS	o Registered users except admin can see job status. o Only status of applied job will be shown.

Security & Other Constraints
- Each profile must be created or deleted by owner of profile or administrator.
- (username, password, type) pair constraint to be unique for each profile.
- Module name can be one of the possible modules existing in the system (viz. Job Search, Job Status, Reports, Post Job etc)
- The user should have sufficient knowledge of computers.
- The users must know the English language, as the user interface will be provided in English.
- The browser using should support JSP
- The user needs internet connectivity

Implementation Constraints: -

- Software Language Used: The languages that shall be used for coding Online Job Portal System are Java Servlets, Java Server Pages (JSP), and HTML. For working on the coding phase of the Online Library System, the Internet Information Services (IIS) Server needs to be installed.
- Development Tools: We will make use of the available Java Development Tool kits for working with Java Beans and Java Server Pages. Also we will make use of the online references available for developing programs in HTML.
- Class Libraries: We will make use of the existing Java libraries available for JSP and Servlets. Also, we need to develop some new libraries for the web-based application. Also, we will develop new programs using scripting languages.

2.6 Assumptions and Dependencies

- Jobseeker should be from any fields.
- Only admin have all the privileges.
- Candidate can only fill the registration form.
- Candidate cannot apply for job after deadlines.
- The project is done on the basis of selection of candidates for the company
- Every user should be comfortable working with computer and net browsing
- Since the application is a web based application there is a need for the internet browser. It will be assumed that the users will possess decent internet connectivity.

3. System Features

3.1 Use Case: Registration

Name	Register
Summary	A new user (a user which doesn't have an account) should first register into the system to use it. This feature will allow the user to enroll into the system if the user is a new user and doesn't already have an existing account.
Rationale	The user can access the system
Actor	Job Seeker and Recruiter
Pre-Condition	None
Basic course of Event	1. User opens the desired module of the system. 2. The system displays GUI the registration. 3. User enters the valid details required to join the system 4. Submits the form
Post- Condition	User is registered and wait for approval from Admin

3.2 Use Case: Login

Name	Login
Summary	Job seeker can change information into their profiles which include profile edit, delete, and update.
Rationale	After registration of the user, the valid user can login into the system
Actor	All Users
Pre-Condition	The login name and password should match with the login name and password provided while registering. If the username and or password do not match, the user cannot login successfully into the system.
Basic course of Event	1. User opens the desired module of the system. 2. The system displays GUI the login form 3. The user writes its username, password and type 4. If valid, usercan login into the system. If the username and or password do not match, the user cannot login successfully into the system.
Post- Condition	User goes to his/her dashboard

3.3 Use Case: Manage Profile

Name	Manage Profile
Summary	USercan change information into their profiles which include profile edit, delete, and update.
Rationale	If there is unnecessary date and fake profiles that are running on the site then Admin will have rights to remove or delete the profile.
Actor	All Users
Pre-Condition	Profile and record must exist
Basic course of Event	1. User opens the desired module of the system. 2. The system displays GUI of different pages. 3. User will input the necessary data into the fields. 4. System will update the record as per requirements.
Post- Condition	User receives the notification that profile has been approved or profile has been updated.

3.4 Use Case: Upload CV

Name	Upload CV
Summary	Job seeker can post his/her CV on job portal
Actor	Job seeker
Pre-Condition	New Jobs and other features should be displayed.
Basic course of Event	1. Job seeker search for a specific job category. 2. The system displays GUI for the new jobs and features. 3. Job seeker clicks on the new jobs option and upload his/her CV there. 4. System will show all the CV on the admin and job seeker end.
Post- Condition	CV successfully uploaded.

3.5 Use Case: Apply/Search for Job

Name	Search/Apply Jobs
Summary	Job seeker can search for jobs related to his interest using filters, if interested he can apply for the job
Rationale	Job Seeker is searching for a job
Actor	Job Seeker
Pre-Condition	Job Seeker must have an account
Basic course of Event	1. Jobseeker access the required page to search the job. 2. System will show the appropriate GUI for searching and filtering the jobs 3. Job Seeker will fill all the required fields and describe the category and type of a job. 4. If, he/she is interested he will Apply for the job
Post- Condition	Apply for the job and wait for Interview notification.

3.6 Use Case: Job Application Status

Name	Job application status
Summary	Job seeker can check its status either their application is accepted.
Rationale	If their application is accepted and rejected, then they must know about the status, so that they can further proceed.
Actor	Job seeker
Pre-Condition	Job should have been applied for
Basic course of Event	1. The job seeker login to system and check status of his application 2. The system displays GUI for the job application page. 3. Job seeker clicks on the page and check its status. 4. System will show all the results regarding their post on the jobs.
Post- Condition	Result successfully shown to the job seeker

3.7   Use Case: Post jobs

Name	Post Jobs
Summary	Recruiter can post the job
Rationale	Recruiter wants to find the right employees for specific job.
Actor	Recruiter
Pre-Condition	Recruiter must have a task and reasonable price for that task
Basic course of Event	1. Recruiter access the required page to post the job. 2. System will show the appropriate GUI for posting the project. 3. Recruiter will fill all the required fields and describe the category and type of a project. 4. System will post the job.
Post- Condition	Anyone can see the posted job and apply for it after registration.

3.8   User Case: View Job seeker profile

Name	View Job seeker profile
Summary	Recruiter can search the job seeker by name and can view the whole portfolio of job seeker.
Rationale	If a Recruiter has a job then he can search the job seeker and see entire profile of all employees or jobseekers.
Actor	Recruiter
Pre-Condition	Recruiter must be existing in a list and Job Seeker has applied for the Job
Basic course of Event	1. The user indicates that the system is to perform a search function. 2. System responds by the requesting the search term and shows the results. 3. System will show the entire job seeker in a relevant field in which Recruiter wants.
Post- Condition	Recruiter can see whole information about the job seeker.

3.9   Use Case: Hire Jobseeker

Name	Hire Job seeker
Summary	Recruiter can hire the employee for a specific job required
Rationale	Recruiter has a job and wants to search the employee for the project if found, Recruiter will hire schedule the interview.
Actor	Recruiter
Pre-Condition	Recruiter should have posted a job.
Basic course of Event	1. The user indicates that the system is to perform a search function. 2. System responds by the requesting the search term and shows the results 3. System will show the entire list of job seeker. 4. System will send the interview notification to the job seeker.
Post- Condition	Job seeker will receive the notification that he or she has been asked for interview.

3.10 User Case: Handle Users

Name	Handle Users
Summary	Admin can view all the user's proceedings.
Rationale	If admin wants to job seeker and recruiter to be added to the system or denied.
Actor	Admin
Pre-Condition	Job Seeker or Recruiter has registered through the website
Basic course of Event	1. Job Seeker or Recruiter has registered through the website 2. Admin verifies the details and credentials of the user 3. If valid, he admits them into the system, else removes them
Post- Condition	Job Seeker and Recruiter's account will be created

3.11 User Case: Feedback

Name	Feedback
Summary	To get a feedback from the user of the system
Rationale	To improve the system and understand the bugs
Actor	Recruiter and Job Seeker
Pre-Condition	Job Seeker or Recruiter has registered through the website
Basic course of Event	1. Job Seeker or Recruiter has registered through the website 2. GO to the feedback tab from dashboard 3. Enter and submit the feedback
Post- Condition	The developer receive the feedback

4. Functional Requirements

4.1 Admin Module

1. Login/Logout

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR001	Login approved	The system will provide functionality to all the users once they log onto the system with their user name and password. On the basis of their type, they will be directed to different pages or section after matching username and password	Essential
FR002	Login declined	If user enters wrong username and password it will show the error message.	Essential
FR003	Forgot/Change password	Due to privacy concerns any registered user in the system can change their login password	Essential
FR004	Logout	The user can logout from the system to avoid unauthentic access	Essential

2. Manage recruiters/job Seekers

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR005	Admin approval (Job Seeker)	The admin can approve the request of job seeker to the system	Essential
FR006	Admin approval (Recruiter)	The admin can approve the request of recruiter to the system	Essential
FR007	Admin Rejection (Job Seeker)	The admin if suspicious can deny the request of job seeker to join the system	Essential
FR008	Admin Rejection (Recruiter)	The admin if suspicious can deny the request of recruiter to join the system	Essential
FR009	View/Suspend (Job Seeker)	Admin can suspend a job seeker from system as required and view reports on it.	Essential
FR010	View/Suspend (Recruiter)	Admin can suspend a recruiter from system as required and view its reports	Essential

4.2 Recruiter

1. Register

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR011	Registration form	A recruiter can register online to put up jobs	Essential
FR012	Email confirmation of registration	Recruiter will get an email after registration is completed.	Essential
FR013	Submit registration form	After filling registration form recruiter can submit the application	Essential
FR014	Cancel Registration form	If recruiter does not want to submit the form, they can cancel it	Essential
FR015	Select Type of User	Choose the type of user while filling the registration form	Essential
FR016	Password and Confirm Password Field Should Match	The characters of both fields should be identical to avoid error in typing of password	Essential

2. Login/Logout

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR017	Login approved	The system will provide functionality to all the users once they log onto the system with their user name and password. On the basis of their type, they will be directed to different pages or section after matching username and password	Essential
FR018	Login declined	If user enters wrong username and password it will show the error message.	Essential
FR019	Forgot/Change password	Due to privacy concerns any registered user in the system can change their login password	Essential
FR020	Logout	The user can logout from the system to avoid unauthentic access	Essential

3. Create Job

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR021	Job Posting	Recruiters can post jobs, and specific details	Essential
FR022	Update Job Details	Recruiter can make changes to the job listed already	Essential
FR023	View Posted Job	A recruiter can view the summary of the job	Optional

4. Schedule Interview

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR024	Create Interview	The recruiter can schedule an interview	Essential
FR025	Edit Interview	Recruiter can change the date, time or place of interview	Essential

5. Edit Profile

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR026	Change address	Recruiter can change their address as required.	Essential
FR027	Change company	Recruiter can edit his details on the profile	Essential
FR028	Change designation	Recruiter can edit his details on the profile	Essential
FR029	Change email	Recruiter can edit his email on the profile	Essential

6. View Job Seekers

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR030	Search Job Seeker	A recruiter can search a job seeker by his name or skills required	Essential
FR031	Send message	If the recruiter wants to get in contact with the job seeker he can leave a message	Essential

7. Feedback

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR032	Feedback form	Recruiter can send feedback to admin by feedback us page by filling in username, email and message	Optional

4.3 Job Seeker

2. Register

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR033	Registration form	A job seeker can register online to apply for the job	Essential
FR034	Email confirmation of registration	Job seeker will get an email after registration is completed.	Essential
FR035	Submit registration form	After filling registration form job seeker can submit the application	Essential
FR036	Cancel Registration form	If job seeker does not want to submit the form, they can cancel it	Essential
FR037	Select Type of User	Choose the type of user while filling the registration form	Essential
FR038	Password and Confirm Password Field Should Match	The characters of both fields should be identical to avoid error in typing of password	Essential

3. Login/Logout

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR039	Login approved	The system will provide functionality to all the users once they log onto the system with their user name and password. On the basis of their type, they will be directed to different pages or section after matching username and password	Essential
FR040	Login declined	If user enters wrong username and password it will show the error message.	Essential
FR041	Forgot/Change password	Due to privacy concerns any registered user in the system can change their login password	Essential
FR042	Logout	The user can logout from the system to avoid unauthentic access	Essential

4. Search for Jobs

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR043	Filter for jobs	Job seeker can search for a job according to various filters like type, salary, position, experience needed	Essential
FR044	View Job Details	By clicking on the job from the search results you can check the details of the same.	Essential

5. Apply for Jobs

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR045	Apply for job	Job seeker can apply for job after registration.	Essential
FR046	Reference no for application	System will generate a reference no for job seeker application.	Essential

6. Check Interview

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR047	Job Alerts	Job seeker can receive job alerts by message about specific job category	Essential
FR048	Interview Message	The jobseeker receives a message when he is selected for an interview with its details	Essential

7. Edit Profile

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR049	Change address	Job seeker can change their address as required.	Essential
FR050	Change skills, education and other details	The job seeker can edit his details on the profile	Essential
FR051	Change personal details	Job seeker can change their address as required.	Essential
FR052	Change phone	Job seeker can edit his details on the profile	Essential
FR053	Change email	Job seeker can edit his email on the profile	Essential

8. Upload Resume

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR054	Upload CV	Job seeker can upload their CV including cover letter to apply for job	Essential
FR055	Download CV	Recruiter can download CV of the applicant from the system	Essential

9. Feedback

Functional Requirement ID	Requirement Name	Details of requirement	Priority
FR056	Feedback form	Job seeker can send feedback to admin by feedback us page by filling in username, email and message	Optional

5. External Interface Requirements
5.1 User Interfaces
The key rules ares
- Placed the user in control with program the interface do what the user desire.
- Reduced the user's memory load with less command based and intuitive shortcuts.
- Make the interface consistent

Fig 1. Login Form

Job Recruitment System

Login Form

Username	
Password	
Type	▼

[Login]   [Forgot Password?]

[Sign Up]

Fig 2. Registration Form (Job Seeker/Recrutier)

Job Recruitment System

Registration Form

Username	
Password	
Confirm Password	
Type	▼

Education Details..

Personal Details...

[Register]   [Go Back]

Fig 3. Admin Dashboard

Job Recruitment System			
Admin Dashboard			
	Profile	Manage Users	Accept Users

Fig 4. Job Seeker Dashbard

Job Recruitment System				
Job Seeker Dashboard				
Profile	Upload Resume	Search Job	Message	Feedback

Fig 5. Recruiter Dashboard

Job Recruitment System

Recrutier Dashboard

Profile	View Posted Job	Post a Job	Search Jobseeker
	Message	Feedback	

Fig 6. Search Jobs

Job Recruitment System

Job Seeker Dashboard

Profile	Upload Resume	Search Job	Message	Feedback

Keywords
java

Expected Salary
10000

Location
mumbai

Experience
2

Search Job

Fig 7. Post a Job

```
+-----------------------------------------------------------+
|            Job Recruitment System                         |
+-----------------------------------------------------------+
|                  Recrutier Dashboard                      |
+-----------------------------------------------------------+
| Profile | View Posted Job | Post a Job | Search Jobseeker |
+-----------------------------------------------------------+
|                  Message | Feedback                       |
+-----------------------------------------------------------+
|            Job ID [            ]                          |
|            Job Title [            ]                        |
|            Job Desciption [        ]                       |
|            KeySkills [            ]                        |
|            Salary [            ]                           |
|            Minimum Experience [      ]                     |
|            Role[            ]                              |
|            Location[          ]                            |
|                   ( Post A Job )                          |
+-----------------------------------------------------------+
```

5.2 Hardware Interfaces

No. of machine: More than 1.
Processor: Pentium 4 & upward.
Hard disk: 80 GB
RAM: 256 MB & upward
LAN card (Each system)
Keyboard
Mouse
Color Monitor.
Networking environment

5.3 Software Interfaces

For server:
Java: JRE5.0
Server: Apache tomcat 5.5
Database: Oracle9i
Operating system: Windows-xp & upward
For client system:
New version of java enabled web browser.
Operating system: Windows-xp & upward

5.4 Communications Interfaces

The Recruitment System will be connected to the World Wide Web.
The HTTP protocol will be used for communication over web

6. Non-functional Requirements

6.1 Performance Requirements

1. Response Time:

    The splash page or information page should be able to be downloaded within a minute using a 56k modem. The information is refreshed every two minutes. The system shall respond to the member in not less than two seconds from the time of the request submittal. The system shall be allowed to take more time when doing large processing jobs.

2. Admin Response:

    The system shall take as less time as possible to provide service to the admin.

3. Throughput:

    The number of transactions is directly dependent on the number of users; the users may be the Admin and also the job seekers who use the system for checking-out jobs, agencies checking-out registered job seekers.

4. Resource Utilization:

    The resources are modified according the user requirements and also according to the jobs requested by the users.

6.2 Security Requirements

1. Login verification:
- Jobseeker will be asked for username, password and type will provide the detail about the type of user, to access jobseeker home only jobseeker type is accessible.
- For the admin home, it will only demand their username & password and type as admin.
- For the recruiter home, it will request username, password and type as recruiter.
2. Hiding the Home Page name from external people: Through this, we will provide double security from external users for the Job Seekers, Recruiters and as well as Administrator Home Page: By Hiding home page name. If unfortunately, they know then username verification works as a security for us.
3. All users should be properly authenticated before allowed entry into the system Authentication will be based on a E-mail address, and a password. All activities on the system must be logged.
4. Highly recommend Kaspersky 2020 internet security to been Installed in users Pc to prevent the harm that may occurs by Unwanted malicious software's, phishing URLs and all the types of Virus attacks during using this application.
5. The system must be protected against the following security threats:-
    - Man-in-the-middle (MitM) attacks, also known as eavesdropping attacks, occur when attackers insert themselves into a two-party transaction. Once the attackers interrupt the traffic, they can filter and steal data. Two common points of entry for MitM attacks:

(a) On unsecure public Wi-Fi, attackers can insert themselves between a visitor's device and the network. Without knowing, the visitor passes all information through the attacker.

(b) Once malware has breached a device, an attacker can install software to process all of the victim's information.

- A denial-of-service attack floods systems, servers, or networks with traffic to exhaust resources and bandwidth. As a result, the system is unable to fulfill legitimate requests. Attackers can also use multiple compromised devices to launch this attack. This is known as a distributed-denial-of-service (DDoS) attack.
- SQL Injection: A Structured Query Language (SQL) injection occurs when an attacker inserts malicious code into a server that uses SQL and forces the server to reveal information it normally would not. An attacker could carry out a SQL injection simply by submitting malicious code into a vulnerable website search box.

6. The user should be forced to keep a difficult password including upper and lower case, numbers and symbols, to avoid:-
- Brute-force password guessing means using a random approach by trying different passwords and hoping that one work Some logic can be applied by trying passwords related to the person's name, job title, hobbies or similar items.
- In a dictionary attack, a dictionary of common passwords is used to attempt to gain access to a user's computer and network. One approach is to copy an encrypted file that contains the passwords, apply the same encryption to a dictionary of commonly used passwords, and compare the results.

6.3 Safety Requirement
- The system should be protected from excess heating by using cooling mechanisms and fan to release the heat produced from continuous working.
- The server should always be confirmed to run properly and the data are saved to the database at consecutive intervals.
- Power is a significant feature and the power supply should be always taken care of.
- Power supply must be uninterrupted. Unsaved data might be lost due to sudden power failure.
- The database may get crashed at any point of time due an operating system failure or any other reason. Therefore, a reliable backup system has been implemented.
- Safeguard the system and server side and database from People, earthquake, fire, temperature, humidity etc.

6.4 Business Rules
- Frequency of use can be varied depend on where it is used.
- Maintenance: The maintenance of the system shall be done as per the maintenance contract.
- Standards: The coding standards and naming conventions will be as per the American standards.
- The system shall support the UHCL information security requirements and use the same standard as the information security requirements.
- Internet Protocols: The system shall be comply with the TCP/IP protocol

standards and shall be designed accordingly.

6.5 Data Integrity requirement

1. User data is confidential and should be stored in an encrypted way, to prevent unauthorized access and misuse. Information regarding airlines must be treated with utmost confidentiality. Users must be told to upgrade their passwords periodically, to improve security and confidentiality of their data. Encryption keys must not be made publicly available at any cost.
2. The integrity constraints on the database should be as follows:-
    *   Job
        → Primary Key:- JOBID
        → Domain: The job should be listed under a given available domains only
        → Referential Integrity: Each job is created by a recruiter with recrutier username
    *   Job Seeker
        → Primary Key: Job Seeker Username
    *   Recruiter
        → Primary Key: Recruiter Username
    *   Interview:
        → Primary Key: Interview ID
        → Referential: Each interview is for a particular job seeker for a particular job created by a particular recruiter

6.6 Regulatory requirement

*   The system shall be complying with the TCP/IP protocol standards and shall designed accordingly.
*   The coding standards and naming conventions will be as per the American standards.
*   Legal, Copyright, and Other Notices: Job Recruitment System is a trademark and cannot be used without consent.
*   Applicable Standards: The ISO/IEC 6592 guidelines for the documentation of computer-based application systems will be followed.

6.7 Environmental requirement

*   The system should be developed in a well-lit and cool room to maintain the server.
*   There should be less interference in the wireless signals in case of wireless connectivity to the internet.
*   The temperature within the range of 18 ºC to 23 ºC and the humidity within the range of 50 % to 70 % independent of weather conditions.

6.8 Software quality attributes
6.8.1   Usability requirement

- The system shall allow the users to access the system form the internet using HTML or its derivative technologies. The system uses a web browser as an interface.

- Since all users are familiar with the general usage of browser, no specific training is required.

- The system is user friendly and self-explanatory.

6.8.2   Availability requirement

1. In case of failure of one server the other must be made available.
2. The system should be available at all times, meaning the user can access it using a web browser, only restricted by the down time of the server on which the system runs.
3. In case of a of a hardware failure or database corruption, a replacement page will be shown. Also, in case of a hardware failure or database corruption, backups of the database should be retrieved from the server and saved by the administrator.
4. The service should not be denied at any time to any authorized user. Routine maintenance should be performed at hours of low user activity, to reduce the number of users inconvenienced. If the platform is not available for use by any user, at any point, efforts should be taken to make it available with as little delay as possible.
5. The system is available 100% for the user and is used 24 hours a day and 365 days a year.

6.8.3   Capacity requirement

1. The system is capable of handling 250 users a time.
2. A large amount of data will be stored on such a platform; hence the data storage should be as efficient as possible. Data access and data management should be efficient. Since many users do not have large amounts of internet data that can be used, the platform should efficiently use network resources, and not consume unnecessary data bytes for communication. It should also not store much cache data on the user side, to keep the application size small.

6.8.4   Serviceability requirement

1. Mean Time between Failures (MTBF): The system will be developed in such a way that it may fail once in a year.
2. Online help is provided for each of the feature available with the System. All the applications provide an on-line help system to assist the user. The nature of these systems is unique to application development as they combine aspects of programming (hyperlinks, etc) with aspects of technical writing (organization, presentation). Online help is provided for each and every feature provided by the system.
3. The User Manual describes the use of the system to Admin. It describes the use of the system on mobile systems. The user manual should be available as a hard copy and also as online help.

4. An installation document will be provided that includes the installation instructions and configuration guidelines, which is important to a full solution offering. Also, a Read Me file is typically included as a standard component. The Read Me includes a "What's New with This Release" section, and a discussion of compatibility issues with earlier releases. Most users also appreciate documentation defining any known bugs and workarounds in the Read Me file.
5. Since the installation of Online Job Portal System is a complex process, our experts will do it. So, an installation Guide will not be provided to the user.

6.8.5 Manageability requirement

The software must be looked upon evey hour for any instability or any unlawful activity. The number of users per hour should be tracked, the number of users returning to the system and failure statistics should be noted.

6.8.6 Recoverability requirement

1. Recoverability is the ability to restore function and data in the event of a failure. The failure of system must be found within 30minutes and repair should take less than 2 hours.
2. The system should be robust and recovery schemes must be provided to restore the system state in case of a crash. User data should be backed up at periodic intervals. The software size should be kept as small as possible, since smaller systems have lower chances of crashing, and are therefore more robust. The code should also be capable of handling edge cases, and the implementation should be abstracted to prevent modification by any outsider.

6.8.7 Interoperability requirement

1. The system can be adapted to run on computers other than the one for which it was designed.
2. Degree of hardware independence: There is no interdependence between the hardware components
3. Implementation language: the JSP pages can be run on all web browsers
4. The agencies balance amount that will be calculated and sent to the billing system shall be compatible with the data types and design constraints of the billing system.
5. The application is HTML and scripting language based. So The end-user part is fully portable and any system using any web browser should be able to use the features of the system, including any hardware platform that is available or will be available in the future.
6. An end-user is using this system on any OS; either it is Windows or Linux.
7. The system shall run on PC, Laptops, and PDA etc.

6.8.8 Reliability requirement

1. Mean Time Between Failures (MTBF): The system will be developed in such a way that it may fail once in a year.

2. Mean Time to Repair (MTTR): Even if the system fails, the system will be recovered back up within an hour or less.
3. Accuracy: The accuracy of the system is limited by the accuracy of the speed at which the employees of the agency and job seekers use the system.
4. Access Reliability: The system shall provide 100% access reliability.
5. The system provides storage of all databases on redundant computers with automatic switchover.
6. The reliability of the overall program depends on the reliability of the separate components. The main pillar of reliability of the system is the backup of the database which is continuously maintained and updated to reflect the most recent changes.
7. Thus, the overall stability of the system depends on the stability of container and its underlying operating system.
8. The system has to be very reliable due to the importance of data and the damages incorrect or incomplete data can do.

6.8.9 Maintainability requirement
1. The maintenance of the system shall be done as per the maintenance contract.
2. A commercial database is used for maintaining the database and the application server takes care of the site. In case of a failure, a re-initialization of the program will be done.
3. Also, the software design is being done with modularity in mind so that maintainability can be done efficiently.

6.8.10 Scalability requirement
1. There are several ways of measuring efficiency which is a key component of scalability:
    i. Concurrent requests per second (250 users)
    ii. Average response time per request (1 second)
    iii. Number of records processed per second/minute (500)
2. The scalability can be affected by: -
    i. More users hitting the server (i.e., more web traffic)
    ii. More data in the database (i.e., queries take longer, or processing takes longer)
    iii. Hard drive failure in a RAID (storage performance/reliability is affected)
    iv. Network saturation
3. With the increase in users over 500 that is double the capacity of the system the, performance will be affected and would slower down. To integrate greater number of users the bandwidth of the server and ability to respond to queries should be continuously monitored and improved.
4. To "Scale up" is when you upgrade a machine to a more powerful machine (e.g. faster CPU, faster GPU, engine with more HP, etc…) to get more processing power.
5. To increase processing power, you decide to buy a new computer with an 8-core 3.4GHz CPU to replace your old computer.
6. Scale out is when you increase the number of processing machines

(computers, processors, servers, etc) to increase processing power. In case of excess traffic the server should be increased from one to three. One must scale out processes to achieve redundancy when you want to configure a highly available environment.

7. To scale database partitioning of large tables, based on ranges of values in a key field. In this manner, the database can be scaled out across a cluster of separate database servers. (MPP)

CONCLUSION: Thus, from this experiment I drafted the software requirement specification document for the case study of Job Recruitment System.