# SOFTWARE REQUIREMENTS SPECIFICATIONS(SRS)

By **CleanFrame**

*Section: C*

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# 1. Introduction

## 1.1 Purpose

This software has been developed to fulfill the sole purpose of the requirements of a common platform for all the students of Indian Institute of Information technology, Allahabad. To provide a web-based platform for connecting the company professionals who are open to offer internship opportunities to the capable candidates in the Institute.

## 1.2 Document Conventions:

1. The whole documentation has been provided in English Language, font: Times New Roman.
2. For the purpose of highlighting important text along the SRS, the text would be bolded and to highlight the various references across the document the text would be underlined.
3. For easy readability, text has been segregated into points.

## 1.3 Intended Audience and Reading Suggestions

This document has been designed as a guiding manual for the students, the placement staff, the company professionals and the supervisor(admin).
Readers are advised to read the documentation before heading towards using the software. After a thorough reading of the document, the stakeholders involved will obtain a great deal of information regarding tips and tricks of the software so that they can use it to its full potential.
The Web Application by CleanFrame is intended for the students of IIIT Allahabad who want to get an opportunity to showcase/discover their talent by Interning in their dream Company's environment space. Also the application is for the Company Professionals who would like to know more about the candidate they would be Interviewing.

## 1.4 Product Scope

We will be highlighting the key features of the Web Application designed by CleanFrame to ease the process of Internship so that both the students and the company professionals can make best use of their time.
Students could retrieve information about the internship. It is a portal for announcing all the upcoming events, list of selected candidates, list of companies, etc. related to recruitment under an internship/placement programme can prove very useful for both the students and recruiters. The product aims at providing useful features like automatic notifications, company reviews, technical support, etc. under one roof and has been well optimised to be used on a web browser in android, ioc, mac, linux, windows, etc. varied environments. The product also offers more features which are well described in the section 4 (System Features).

### 1.5 References

IEEE SRS Format Documentation

# 2. Overall Description

## 2.1 Product Perspective

It is aimed to increase the efficiency of the Intern Cell of IIITA for efficient conduction of Internship process and overcome the problem faced by Student and Intern Cell. This web service helps the student and intern cell to save their time and helps the intern cell to proper mange and keep record of the students,companies etc. for the further use.

## 2.2 Product Functions

- **Administrator**
  - Authorised users  for login and register.
  - Password recovery.
  - Update profile of user.
  - Gives regular updates and announcements.
  - Manage blogs.
  - Prohibit student/company.
  - Provide Technical support.
  - Manage Account

- **Student**
  - Students can sign up/login.
  - Can update his/her details.
  - Can view his/her uploaded details.
  - Can give review on other student’s portfolios.
  - Roll back his/her application.
  - Students can view the company’s profile.
  - Students can ask questions to the technical support team.
  - Students can delete his/her account.

- **Company Professionals**
  - Companies can sign up/login.
  - Can update their details.
  - Can give notification.
  - Access students' portfolios/CV.
  - Provide information about internships.
  - Announce the result of selected students.
  - Can delete their account.

- **Supervisor (of Internship Staff)**
  - Can login/sign up.
  - Can view company details.
  - Can view/give notifications.
  - Manage internship details.
  - Add new company.
  - Update company details.
  - Manages students interviews.
  - Add/delete reviews.

- Prohibit student/company.

## 2.3 User Classes and Characteristics

For this there basically there are 5 types of user classes required. These are:

1. Normal Visitor
   A normal visitor would be able to access the homepage of the website only and would not be able to avail benefits since he would not be a company professional or a student or one of IIIT Allahabad personnel.
2. Students
   Users who have an account associated with our Internship portal and also the college email id could only be used for signing into their accounts.
3. Company Professionals
   The users representing their company who want students as interns or want to offer them a job could also create an account on the portal to ease the process of Internship/placement.
4. Supervisor (of Internship Staff)
   The Internship staff personnel who manages/ supervises the signup requests, placement/ internship criteria, monitoring the activity of users etc.
5. Administrator
   User for handling maintenance and security of the website as well as handling the user accounts.

## 2.4 Operating Environment

1. Windows 7 and above or Linux or MacOs.
2. Web browsers such as Chrome, Mozilla Firefox, Opera, Microsoft Edge would be preferable for better user experience.
3. For the best view use the latest version of the browser.

## 2.5 Design and Implementation Constraints

1. Any normal visitor must not be able to view the dashboard section.
2. Any registered user should not be able to view the dashboard of other users.
3. Student Account should be given permissions in this way that they can't access the backend staff permissions.
4. As in view of the above point any staff account must not be able to access student/ admin permissions.
5. Admin permissions must be limited such that he can't use them for any wrong purpose.
6. The students must only be prohibited only when any company professional reports the candidate.
7. The superuser account that has full rights to all the databases and account passwords must be deleted after deployment of the website on a production server. Moreover, this account should only be created if the website is under maintenance and the database is given password protection.
8. The CV/ Image for profile should have maximum size (2 MB).
9. While login/ signup/ reset password, proper captcha verification must be done.

## 2.6 User Documentation

Since it is a virtual product and in fact a web application so no user manuals or guides would be provided to the user so that user is able to use the application.

## 2.7 Assumptions and Dependencies

1. Since the project designed is primarily web-based it is preferred to be run on a renowned browser and not on a browser whose information is not available in the local domain. A browser with bad reviews or low security measures is highly not recommended as it could lead to data theft.
2. The software will require you to trust the developers and will require access to certain storage components of your device to enable smooth pickup of necessary documents to be uploaded over the server.
3. If possible, use the browser with high priority settings assigned to it for faster processing of the use cases and a seamless experience.

# 3. External Interface Requirements

## 3.1 User Interface

The User Interface of our application is easy to use and could be easily understood by the user. It uses English language to avoid any miscommunication and confusion. Also we expect that the user knows how to use various devices so he is able to access the portal and achieve the intended purpose.

Various User Interfaces are explained below:

### 3.1.1 Home Interface

In this interface the user could know more about the intentions and purpose of building such a portal.

### 3.1.2 Login Interface

In this user interface there would be some fields which would need to be filled by the user in order to Login but provided that the user is having an account.

### 3.1.3 SignUp Interface

With the help of this user interface the user would be able to create his account if he belongs to one of the user classes. This interface would ask the user to enter some of his credentials such as phone number, name, email id, gender etc. There would also be a submit button so that the user could submit his credentials and create a signup request which is to be verified by the supervisor.

### 3.1.4 Dashboard Interface

This user interface would provide many functionalities such as viewing/updating his profile, applying for a job/internship, declaring the results, making announcements, viewing the company details and many more which are subject to different types of users. These functionalities would just be a click of a button away.

## 3.2 Hardware Interface

Since it is a web application so it would work completely fine on Android, Ios, Windows, MacOs, Linux devices. No other as such hardware is required.

## 3.3 Software Interfaces

In this section all those requirements are listed which are needed to run the system efficiently. In addition, operating system for the system to run effectively, the interface to run the web application, flash to run in web browsers, the integrated development environment to develop the web application, and the third party tool used for editing purposes are as follows:

- Operating Systems: Windows(7 or 7+), Linux(including ubuntu, kali,etc), MAC OS
- Web Browser: Explorer(8.0 above), Chrome, Firefox(4.0 above)

## 3.4 Communications Interfaces

Communication is bound to be descent among the common folks and is required to be performed with respect from both sides.

Proper addressing is a necessity to maintain a civilised social and professional environment over the software services and the software takes care of it by providing a template that can be personalised for the same.

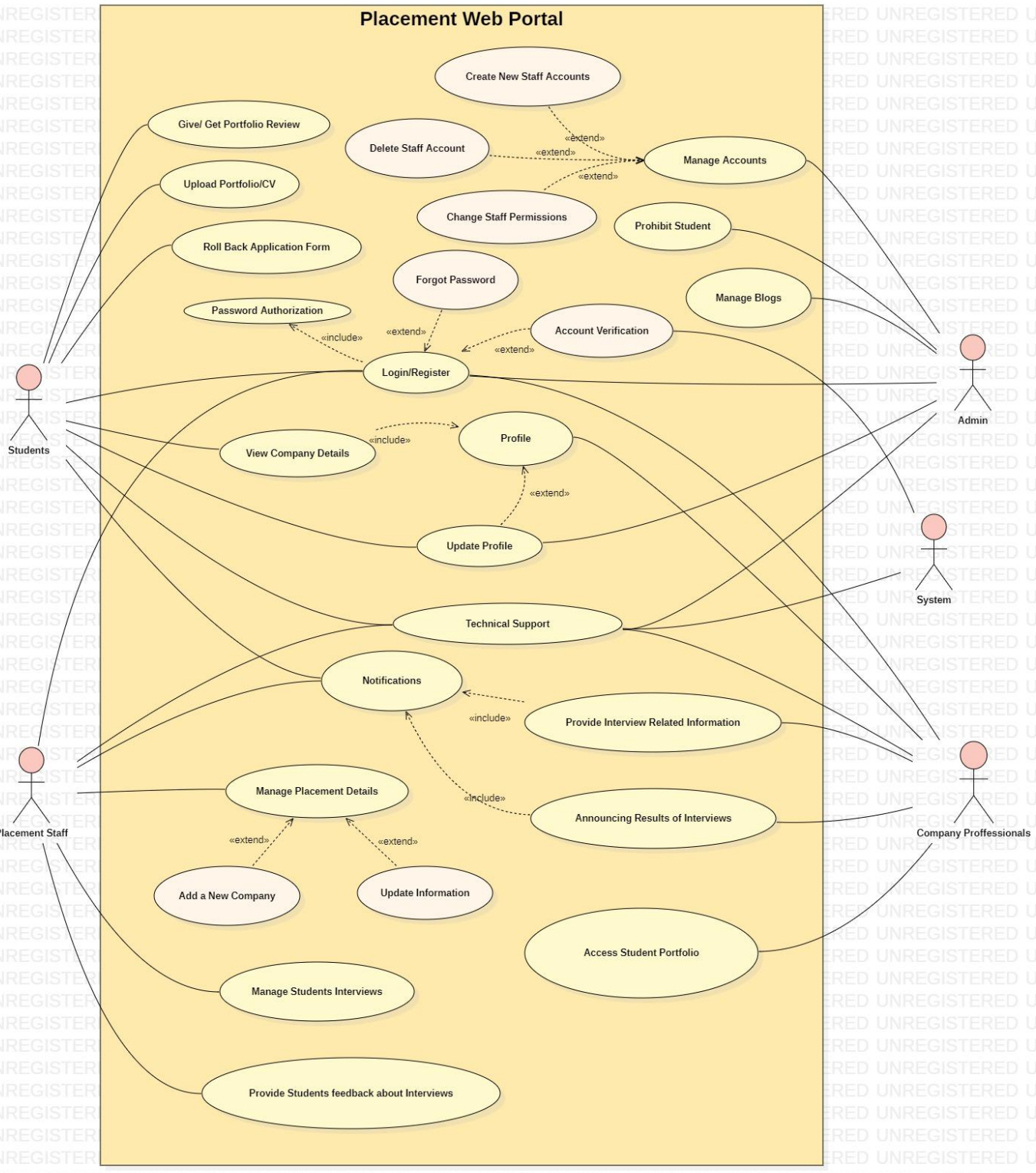
Messaging and reviewing shall not contain any signs of abuse or foul play and shall be the means to deliver only the necessary and required details.

While email handles would be public, it is advised for every candidate to not to spam message any company professional/ staff member.

All the necessary security measures would be taken for preventing data breach and HTTP protocol would be used for transmission of data over this web based application.

# 4. System Features

## UseCase Diagram



- **Use Case 1:** Give/ Get Portfolio Review or Search Non Staff Users

  Primary Actor: Students

  Pre-condition: User must have logged in and students Portfolio must be uploaded

  Main Scenario:

  1. Students could give reviews on other students' portfolios and can get a review on theirs.

  Alternate Scenario:

  2. Student has not uploaded his portfolio

- **Use Case 2:**. New/Update CV and Portfolio

  Primary Actor: Students

  Pre-Condition: User must have logged in.

  Main Scenario:

  1. The students would be required to upload their portfolio and CV over this platform as their first impression.

- **Use Case 3:**. Roll Back Application Form

  Primary Actor: Students

  Pre-Condition: User must have logged in and the application form for that interview must have been filled

  Main Scenario:

  1. Student could withdraw his/her application from an interview test of a company.

- **Use Case 4:** Login/Signup

  Primary Actor: Administrator, Student, Supervisor, Company Professionals

  Pre-condition: To have an existing account on the portal to login or to have valid credentials to create an account on the portal

  Main Scenario:

  1. To Sign Up into the system if the user is new.(In this case only a Student or Company account can be created.)
     a. For creation of the account the student/company professional has to request the supervisor.
  2. To login into the system if he/she is an existing user.

  Alternate Scenario:

  3. Authorisation fails.
     > Prompt the user that he typed the wrong password.
     > Allow him to re-enter the password. Give him 3 chances.
  4. Request Denied
     a. The user would not be able to create his/her account. The reason may be that either the User is banned or is not a company professional or student of IIIT Allahabad.

- **Use Case 5:** Password Authorisation

  Primary Actor: Administrator, Student, Supervisor, Company Professionals, System

  Pre-condition: To have an existing account on the portal

  Main Scenario:

  1. To authorise a user before letting him/her to login to the system.

  Alternate Scenario:

  2. User entered the wrong password 3 times.
     > Notify the user about the tries left.
     > Inactive his account for 24 hours.

- **Use Case 6:**. Forgot Password

  Primary Actor: Administrator, students,Supervisor, Company Professionals

  Pre-Condition: To have existing account on the portal and have a valid credential To be used for verification.

  Main Scenario:

  1. A feature for resetting the password for the ones who have forgotten their password by entering the correct verification details.

- **Use Case 7:**. View Company Details

  Primary Actor: Students,Supervisor,Company Professionals

  Pre-Condition: to have an existing account on the portal.

  Main Scenario:

  1. Check the details of the company enlisted on the Internship's portal.

  Alternate Scenario:

  2. Profile doesn't exist or the File became corrupted.

- **Use Case 8:**. View/ Give Notifications

  Primary Actor: Students,Supervisor,Company Professionals

  Pre-Condition: User must have logged in and if the result has been announced or interview timings have been announced or any other message given by the staff to a particular student.

  Main Scenario:

  1. To notify the Students about the latest notifications regarding internships/ placements and results only for those companies where they have applied.
  2. A place for supervisors to notify critical and volatile information such as changes in some schedules, technical problems, etc.
  3. To notify the student that he violated the placement law and he has been expelled and his account is going blocked for current placement year.

4. The notifications given by upper level users would be viewed by lower level users.

Alternate Scenario:

5. User have unsubscribed (or pause) the notification

- **Use Case 9:** Manage Internship/ Placement Details

  Primary Actor: Supervisor

  Pre-Condition: User must have logged in.

  Main Scenario:

  1. For maintaining a database of companies offering recruitment for the interns.
  2. For maintaining a database of candidates who have applied for a certain company.
  3. To maintain a database of the basic information of placed candidates and candidates who are not yet placed.

- **Use Case 10:**. Add a New Company

  Primary Actor: Supervisor

  Pre-Condition: User must have logged in and a database of companies offering internship

  Main Scenario:

  1. To add a new company to the list of companies offering internship.

  Alternate Scenario:

  2. The company professionals have created their account but their details have not been uploaded.

- **Use Case 11:** Update company details

  Primary Actor: Supervisor

  Pre-condition: User must have logged in and the database of companies offering internships

  Main Scenario:

  1. For updating information regarding the offers made by the company such as updating information in:
     a. Number of offer
     b. CTC offered for a certain position
     c. Basic information about the location of office
     d. Number of students selected

- **Use Case 12:**. Manage Students Interviews

  Primary Actor: Supervisor

  Pre-Condition: User must have logged in.

  Main Scenario:

  1. To regulate timings of various Interviews so that they don't clash with each other
  2. To allocate places for interviewers to conduct interviews.

3. To inactive a student's all application forms if he/she has been placed in the company. (One Student - One Job Policy)

- **Use Case 13:**. Add/Delete top review
  Primary Actor: Supervisor
  Pre-Condition: User must have logged in.
  Main Scenario:
  1. Collect the interview experiences of the selected students in various companies.
  Alternate Scenario:
  2. A placed student denied to give experience.

- **Use Case 14:** Access Student CV/ Portfolio
  Primary Actor: Company Professionals
  Pre-condition: User must have logged in and the student portfolio must exist in the system
  Main Scenario:
  1. For company professionals to know about the candidates for the first screening on the basis of the portfolio uploaded by them.

- **Use Case 15:**. Result Announcement
  Primary Actor: Company Professionals
  Pre-Condition: Any selected candidate must have an active account.
  Main Scenario:
  1. For announcing the selected candidates after an interview is successfully conducted.

- **Use Case 16:**. Provide Interview Related Information
  Primary Actor: Company Professionals
  Pre-Condition: User must have logged in.
  Main Scenario:
  1. To notify the candidates about the date, place and time of the interview/test.
  2. To inform the candidate about the mode of evaluation.
  Alternate Scenario:
  3. If the candidate had unsubscribed notifications then he/she can't get any information.

- **Use Case 17:**. Update Details(Profile related)
  Primary Actor: Students,Supervisor,Company Professionals,Administrator
  Pre-Condition: Profile of users must be existing on the system database.
  Main Scenario:
  1. To update the profile of the users (based on the type of user).

- **Use Case 18:**. Technical Support
  Primary Actor: Administrator, Students, Supervisor, Company Professionals, Supervisor
  Pre-Condition: Question asked must be answered within 24 hours
  Main Scenario:
  1. A common place to report the problems faced by any actor in using the system.
  2. To provide solutions over that platform to the queries posed.

- **Use Case 19:**. Account Authorisation
  Primary Actor: System
  Pre-Condition: Account must be present, secret information must be hashed properly(such as password, phone number, etc.)
  Main Scenario:
  1. To verify the credentials of users during login.

- **Use Case 20:**. Announcement/ Blog
  Primary Actor: Administrator
  Pre-Condition: NIL
  Main Scenario:
  1. In order to give a regular update to students at their home page.
  2. Blogs can be added/deleted after a specific period of time.

  Alternate Scenario:
  3. Blog limit exceeds then the addition option is not available.

- **Use Case 21:** Prohibit Student/ Supervisor/ Company Professionals
  Primary Actor: Administrator/ Supervisor
  Pre-condition: Students must not be already prohibited. Being an advanced option feature must be deactivated until a ban request has not come from company professionals. Similarly the condition is applied for supervisors and company professionals
  Main Scenario:
  1. To prohibit the student for the placement if he/she is indulging in unfair means.
  2. To prohibit a supervisor from accessing sensitive information if he has found any false activity.
  3. To prohibit any company to offer internships on campus. (very minute chances that it may happen once in ten years).

- **Use Case 22:**. Manage Accounts
  Primary Actor: Administrator
  Pre-Condition: The password created for the new account must be randomly

generated and also follow the password validation regular expression. Account deletion could be possible only if the account is not in use for a long period of time (say 4 months) or staff quits their corresponding job.

Main Scenario:

1. To create a new staff account
2. To delete an account.
3. To change the permission of the staff account.

- **Use Case 23:**. Delete Account

  Primary Actor: Administrator, Students, Supervisor(Internship Staff), Company Professionals

  Pre-Condition: Account must exist on the system

  Main Scenario:

  1. Any kind of user must be free to deactivate his/her account and erase it from the database.

  Alternate Scenario:

  1. If a student is restricted/prohibited from giving interviews he can simply delete the account and create a new one with the same email id.

     > While designing the database there would be a field of inactive(default=True). While creating an account this feature will set to False and for login simply, we need to match it. This simply means that on deleting an account, if someone creates an account again then only its database settings and details will be reset. The ban table can only be changed by admin and superuser accounts.

- **Use Case 24:**. Security and Maintenance

  Primary Actor: Administrator

  Pre-Condition: While maintenance, the website's server must not go down, it must be providing services to its users.

  Main Scenario:

  1. Now, whenever bugs are detected maintenance is necessary for security reasons

  Alternate Scenario:

  2. If there comes a cyber attack on the website, to prevent any kind of data breach, the website will not be given the necessary permissions until the virus is not handled correctly and the firewalls are not active again.

# 5. Non-Functional Requirements:

## 5.1 Implementation Requirements

**a.** Website needs to be quite smart to differentiate between a human and machine.

**b.** Since the login system is one of the main systems so safety and security of this section needs to be given utmost importance.

- **i.** There must be some limit on the number of login attempts before every successful login and it must be rest if the login is successful.
- **ii.** If the attempt limit is reached then the user account is needs to be in an inactive state for some hours(say 7hours).

**c.** For this type of website it is necessary to maintain an account limit that is every user should only be allowed to login at a single system at a single time. Even if a user tries to login at another system then if the system is connected to the web then it should ask to logout from one of the systems.

**d.** Response time should be minimum.

- **i.** Loading time should be less than a minute.

**e.** In the early era, whenever there a form needs to be submit the request directly goes to the backend server, it validates the request and return response and webpage is being reloaded but recent era met a requirement that

- **i.** Minor validation should be done first frontend and when this frontend validation is successful then request should go to backend. This is done to decrease the traffic at the backend server.
- **ii.** Moreover, when the backend staff logins they need to handle quite a large database in tables and also need to do a lot of stuff with forms which need verification from the server. So, earlier requests should directly go to the server, the page needs not to get reloaded again and again.

**f.** API needs to be implemented to increase the number of traffic at the website.

**g.** The database tables/models must be designed in such a way that whenever a query is entertained it should take as minimum time as possible.

**h.** All the passwords and secret data needs to be hashed properly.

**i.** When a user Signup himself in the application, several points should be taken in care which are listed below:

- **i.** Always Signup options should be for students or company professionals. Admin account is being created by the superuser account(single one in one), and the staff account is being created by the admin.
- **ii.** The details entered by the student must be verified securely which includes:
  1. Phone Number Verification
  2. Email Verification

  When these are verified only then account creation request should be generated.

## 5.2 Safety Requirements

**a.** Web safety models and protocols to be strictly followed.
**b.** Safely from data theft should be there.
**c.** Proper Firewalls can be built.

## 5.3 Security Requirements

**a.** The system must automatically log out all users after a specified period of inactivity.
**b.** The system should not leave any cookies on the server's computer containing the user's password.
**c.** The system's back-end servers shall only be accessible to the authorized administrator.
**d.** Sensitive data will be encrypted before sent over insecure networks/connections like the open internet.
**e.** Sent and received chat messages in a query should be transferred via Reliable Data Transfer connection.

## 5.4 Reliability Requirements

**a.** The website code must be well organized so that in future project framework can be easily extended to other frameworks.

## 5.5 Usability Requirements

**a.** Frontend design should be created user friendly and the following pointers could be kept in mind while designing it:
    1. Information and tools required by a user should be easy to find.
    2. The icons used to display tools should be the standard ones used across all the platforms.
    3. For example: The user requirement that the interface should avoid cryptic icons that are abstract and meaningless.
**b.** Requirements for a safe environment where users can try things that are possible to undo.
**c.** Users should be able to customize the layout of the menus and profile page.

## 5.6 Standard Requirements

**a.** Inactivation of staff accounts would be possible only if the staff member leaves the job or is involved in some kind of fraud/illegal activity against the rules.
**b.** All the passwords and secret data must be hashed properly.

## 5.7 Supportability

**a.** The codes must be easy to understand and readable.
**b.** All design architecture should be well documented.
**c.** Various Programming languages are used in this project so the tasks should be independent of each other which would lead to their easy maintenance.