Software Requirements Specification
for
Tutor-Hub: Online Tutor Finder System

Prepared by:
Sayed Abu Noman Siddik(ID: 1811655042)
B. M. Arifuzzaman (ID: 1821264042)
Mir Fatema Afroz Faria (ID : 1721178042)
Abul Kalam (ID: 1811501642)

North South University, Bangladesh
Department of Electrical and Computer Science and Engineering
CSE 327: Software Engineering
Course Instructor: Dr. Md Musfique Anwar

Friday, 12 March 2021

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Revision History

Revision	Date	Author(s)	Description
1.0	12.03.2021	Abul Kalam, Afroz Faria, Sayed Noman, B. M. Arifuzzaman	Chapter 1 - Introduction Chapter 2 - Overall Description Chapter 3 - Requirements
2.0			
3.0			

Chapter 1

Introduction

1.1   Purpose

The purpose of this document is to describe the Software Requirements Specifications (SRS) of the proposed application (Tutor-Hub). This will be the 1st release of this app. The application consists of two main parts, the web application and the backend server. Application architecture design, scopes, functions and its integration with existing systems at application designs are the core elements to be described in this document. This document provides a complete understanding of what is to be expected from the application. Clear understanding of the application and its functionalities will allow for the correct software to be developed for the end users. It can be used for future development of the application. This document provides the foundation for the design, construction, and testing of the application.

1.2   Intended Audience

The SRS described in this document is to be used by the group members and course instructor for developing the application. The group members will use the SRS to fully understand the expectations and requirements needed in the application. They will be able to use this SRS as a reference to see if the group members are constructing the application as per expectations.

This document is intended for developers (group members), instructor and TA of the course. The modification and maintenance of the app will be done by the team members. The team members and faculty will have access to this SRS.

1.3   Intended Use

This document will be used to develop a web-based tutor finder app where tutors and students will be able to find their intended tuition/tutor. The development team will use this SRS document as the basis for their entire project. Every person involved in development will follow the framework of this document to ensure requirements are fulfilled. Developers (group members) will use this document to understand the requirements of users and how they will use and interact with the system to be developed in order to perform their activities. The specification for software to be developed, which include functionalities, non-functional requirements, and software architecture can be found in this document. Group members along with the instructor will use this document to systematically plan the functional and security testing strategy of the application. Group members will also use the SRS to design the use case flow structure and content to show how the application can be used in the most effective way. It has to be delivered as end-user manual and technical documentations that covers all the requirement aspects proposed. Furthermore, the document will be used to minimize development time and cost.

1.4   Product Scope

Manual tuition quest is an old process in today's world of technology. The Tutor Hub web application will provide a new way of seeking suitable tutors for students as well as suitable jobs for the tutors. The main benefits of this web application will be:

1. The web application will be interactive and create job sectors for the tutors.

2. The design will be simple so that minimal educated users can use them easily.

3. The tutors/ tuition's will be recommended by the nearby or selected location of the user.

4. A student will be able to see the main information like expected salary, preferable classes of the tutors. This will save time as they will be viewing the keywords only in the homepage and can compare this information with other tutors' information.

5. The tutor can form a batch for a specific subject and can upload online materials in that platform.

1.5   Risk Definition

1. There are chances that the requirements won't be fulfilled.

2. We can face some problems in the unit testing.

3. We also can face problems while implementing AI.

Chapter 2

Overall Description

2.1 User Classes and Characteristics

"Tutor-Hub" is an Online Tutor Finder System used by many people Locally. The main users of the Project system under development will be Tutors and students and Parents.

No	User class and Characteristics
1	**Student** **Description :** The majority of students shall use this application to find private tutor. The technical experience of these users should not matter as the system will be straightforward and easy to use. Besides that, student will come to this application to choose subject, choose tutor, view and download course content.
2	**Tutor** **Description :** Tutors will allow to accept requested student, upload and update their qualification then upload a course content, notes and other educational material.
3	**Parent** **Description :** Who will choose a suitable a tutor and negotiate with tutor about the price and time?
4	**System Admin** **Description :** The system admin is responsible for maintaining (add, update and delete) the list of student and tutor. They can also monitor the status of all student and tutor requested.

Table 2.1: User Class and Characteristics

Tutors will have a higher level of access to the Project module than students as they will have certain administrative functions available to them in order to set up and manage each project. The term 'tutor' will collectively be used to describe all teaching users, such as lecturers and tutors. There will be differing levels

of access available to each type of teacher, and this will be specified upon creation of each user. Students will have a standard level of access that will not differ between individuals. A pictorial representation of User Class and Characteristics is presented below :-
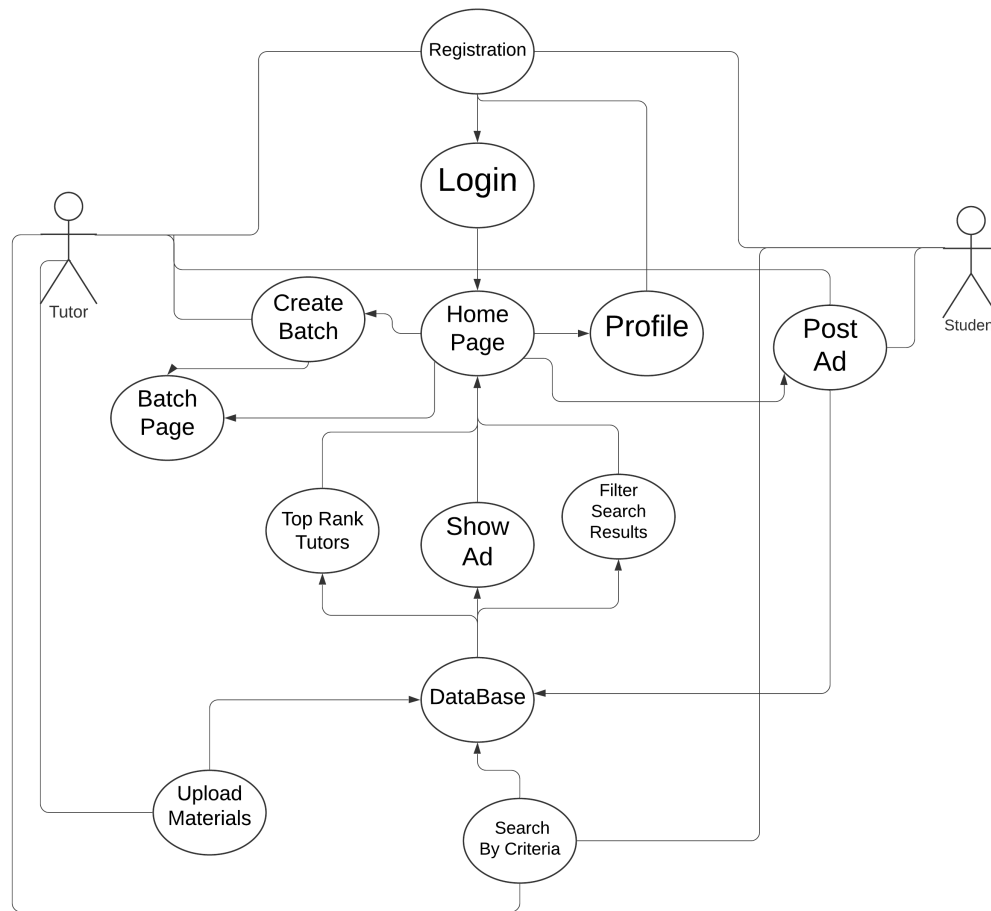

Figure 2.1: User Class and Characteristics

2.2   User Needs

This system will help the tutor provide the teaching service and the student or their respective supervisor. They are the primary user of this app. They can log in to this app and find their accurate tuition or tutor. This app will be a place to connect the perfect job or to find an ideal tutor.

Another help of this system will be note sharing. This app will be a spot to collect or transfer necessary documents to the students. The tutor can easily reach his notes to his student.

These kinds of features will meet what a user needs to connect with a tutor easily.

2.3   Operating Environment

To support this client-server environment the Web-Application will be developed with the utilization of web server, database server, and frameworks. Server machine, desktop computer, and mobile device (smartphone)

are the hardware to be used in the application. Details requirements for the development and deployment of the applications are described below.

Software Requirements For Client:-

Software Name	Description
Sqlite3	- Server database - Provide platform to host client - application server and - database for Web application

Hardware Requirements For Client:-

Hardware Name	Description
Client Machine	- Desktop computer with browser software and Internet connection. - Smart Phone with browser software and Internet connection. - Used by system admin to access client as Web-based application in desktop environment.

Software Requirements For Server:-

Software Name Name	Description
Any IDE	Preferably Visual Studio Code, it enables users to install third-party packages and themes to customize the features and looks of the editor.
Python , Django	- Python is an Object-Oriented-Programming Language. - Django is a Web-Application Frame Work. - To run this software locally, Python and Django must be installed on that computer.
Sqlite3	- Server database - Provide platform to host client - application server and - database for Web application

Hardware Requirements For Server:-

Hardware Name	Description
Development PC	- Computer installed with all require software and libraries described in Software requirement section. - The software being developed will be running under Windows 10 Operating system.
Mobile Device	- The mobile platform with internet connection where mobile server applications are to be installed - Used by student, tutor and parents to access services provided by client in mobile environment.

2.4   Constraints

Hardware Constraints: Some of the users of this system will not have high-end computers with which to access this module. Therefore, we must take into account processing and internet speed limitations when designing the system.

Software Constraints: The **"Tutor-Hub"** system shall be compatible with the most used multi platform web browsers, Mozilla Firefox, Google Chrome , Safari, Opera Mini, Microsoft Edge and many more. Since this is a web app system, thus it doesn't have any operating system constraints. For Development purpose There may be purchased components, components reused from another application, or components being developed for subsystems outside of the scope of this SRS, but in order to interact this software application must have :-

1. Any operating system but Windows and Linux operating systems is preferred .

2. The software should be connected to a web server which runs 24x7.

3. The user accessing/developing the system from any computer must have an internet connection with all browsing capabilities.

Communication Constraints: Below is a list of communication devices or protocols with which the product must interact.For example:-

1. System must be able to communicate with the printer in order to print documents.

2. System must communicate through TCP/IP port.

3. System is limited to HTTP/HTTPS Protocols only.

.**Interface with System Constraints:** This system will have to utilise other functions within the existing system, and thus we will be constrained by any existing limits of this system. Possibility of Lack of reference on existing systems.GUI is available only in English.

Design and Implementation Constraints: Some of the design and implementation constraints identified are listed below:

1. Students are allowed to register for more than one course.

2. Students don't have the authority to edit or access data in the system.

3. This system supports distributed databases such as Sqlite3.

4. This system may only allow booking but does not include online payment methods.

2.5   Assumptions

It is assumed that the system follows the Asian localized standard for the course organization.The requirements shall change if the **"Tutor-Hub"** system is intended to be universal, and any user can belong to a s intended to be universal, and any user can belong to a different organization with their particular database system.

It is assumed that students/tutors data will be made available for the project in some phase of its completion. Until that, test data will be used for providing the demo for the presentations.It is assumed that the students and parents are familiar with applications that find themselves easier .

1. The users have sufficient knowledge of computers.

2. The remote computer should have Internet connection and Internet server capabilities.

3. The users know the English language, as the user interface will be provided in English

4. This system will not be violating any internet ethnic or cultural rules and won't be blocked by any Telecom companies.

Chapter 3

Requirements

3.1 Functional Requirements

1.Authentication Based Login System :- Registration

Card	As a user, I want to register with my Google account so that system can authenticate me.
Conversation	As a user, I want to register myself with my Google account, then it will save my time as I don't have to enter all of my data by myself.
Confirmation	**Success:** • Registered successfully • Valid user will be redirected to the login page **Failure:** • No database connected • Service not available • Page can't be redirected, Please reload again
Conditions of Satisfaction	User must be 13years old or above to register account.

Table 3.1: Authentication Based Register Account

2.Authentication Based Login System :- Login

Card	As a user, I want to login with my Google account so that system can authenticate me.
Conversation	As a user, when I go to the login page and login with my Google account, then it will save my time as I don't need to register beforehand to login.

Confirmation	**Success:** • Valid user will be redirected to the homepage **Failure:** • No database connected • Service not available • Page can't be redirected, Please reload the page again
Conditions of Satisfaction	User must have a registered account.

Table 3.2: Authentication Based Login

3.Authentication Based Login System :- Reset password

Card	As a user, I want to reset my password so that I can secure my login.
Conversation	As a user, I want to reset my password in case I have misplaced my previous password.
Confirmation	**Success:** • Redirected to the personal information page • Enter New Password • Confirm Password • Password has been reset successfully **Failure:** • No database connected • Service not available • Page can't be redirected, Please reload again
Conditions of Satisfaction	Passwords must contain at least 5 characters.

Table 3.3: Authentication Based Reset Password

1.Authentication Based Login System :- Delete Account

Card	As a user, I want to delete my account as i don't need tuition anymore, so that my tuition history is erased.
Conversation	As a user, I want to delete my account so that when I don't need the web application anymore; my data is removed from the system.

Confirmation	**Success:** • Redirected to the personal information page • Delete Account • Enter password to Confirm • Deleted Account Successfully **Failure:** • No database connected • Service not available • Page can't be redirected, Please reload again
Conditions of Satisfaction	user must be registered and logged in to the account.

Table 3.4: Authentication Based Delete Account

5.Editable profile for both tutor/student:

Card	As a user I want to view and update my user profile's details whenever I want so that my information are updated with present time.
Conversation	As a user, I want to view and update my profile so that I can provide my latest information to the system.
Confirmation	**Success:** • redirected to the personal information page • View information • Edit information • Save changes • View the new information **Failure:** • No database connected • Something went wrong, Try again • Failed to load the page
Conditions of Satisfaction	Users must enter their password for security reasons.

Table 3.5: Editable Profile for Student/tutor

6.Showing Ads:- Find tutor and Find Tuition on both users end

Card	As a user, I want to see the job posts/ tutors posts on my home page so that i can book tuition easily.

Conversation	As a user, when I go to the home page it will show me current job posts of other users. So that, I have the option to choose according to my preferences.
Confirmation	**Success:** • Registered users will see cards of different job ads. • View more details after pressing see more. • Results will show according to recent job ads. **Failure:** • No database connected • No ads are available • Page can't be redirected, Please reload the page again
Conditions of Satisfaction	Users must register themselves to view these ads.

Table 3.6: Showing Ads:- Find tutor and Find Tuition for both users

7.Create posts to seek tuition/tutor

Card	As a user, I want to post an ad according to my requirements so that i can get tuition/tutor based on my requirements easily.
Conversation	As a user, when I will see the tutors requirement is not fulfilling my demands, I want to post my own ads to seek for perfect tutors.
Confirmation	**Success:** • Registered users will be able to post job ads. • Ads will be dependent on users preferences. • Users can put Title, Days, Salaries, Areas **Failure:** • No database connected • Required data is not fulfilled • Page can't be redirected, Please reload the page again
Conditions of Satisfaction	• Users must register themselves to post these ads. • To post an ad, users must put proper title, days, salary and location

Table 3.7: Create posts to seek tuition/tutor

8. View post details

Card	As a user, I want to see the details of an ad/post which is posted on the home page or found in the search results.
Conversation	As a user, in all ads/posts I will find an option to view the details of the ad so that I can get perfect tuition/tutor for myself.
Confirmation	**Success:** • Users will see an option named 'see more'. • User presses see more button and system checks and confirms the user is qualified to view more details. • Users will see full details of the ad in a page. • **Failure:** • User clicks see more button. • System checks and confirms the user is qualified to view more details. • System denied to redirect users to full details page. • User is unable to view more details. • No database connected. • No ads are available. • Page can't be redirected, Please reload the page again.
Conditions of Satisfaction	Users must register themselves to view posts and more details.

Table 3.8: View Posts Details

9.Search ads based on area/salary/days/subjects/class

Card	As a user, I want to search job posts/ tutors posts on my home page
Conversation	As a user, when I go to the home page after logging in, it will show me a search bar to search for my desired job/tutor. I need to search for a job/tutor where I can select areas, salary, days, subjects and class. Therefore, I have the opportunity to find a job/tutor according to my preferences.

Confirmation	**Success:** • Registered users will see a search bar above the home page. • Users need to select area, salary, days, subjects and class to search for a job/tutor. • User will press the search button. • System checks and confirms the user is qualified for searching ads. • Results will show ads according to the selection of the user. **Failure:** • Users will select the criteria to search. • User presses the search button. • System checks and confirms the user is qualified for searching ads. • Users cancel the process/system denies the process. • User is unable to see the results. • No database connected. • No ads are available. • Page can't be redirected, Please reload the page again.
Conditions of Satisfaction	• Users must register themselves to search for an ad. • Users must select area, salary, days, subjects and class to search for an ad.

Table 3.9: Search ads based on requirements

10.Review and Complain on Tutor

Card	As a student/parent, I want to give a review to a tutor so that based on my tuition experience others can decide.
Conversation	As a student, after taking tuition from an individual tutor I want to give my reviews as points/stars and write my tuition experiences as comment, so that others who are willing to take tuition from him in future can gather idea about tutors past activities

Confirmation	**Success:** • Students/Parents click on the homepage to see the available list of top ranked tutors. • System check and confirm parents/students qualified to see top ranked tutors Details on display **Failure** • Parents/students click the comment button. • System check and confirm parents/students qualified to give reviews for the tutor and then display the form to let parents/students write. • Parents/students enter the comment then submit to the system. • Parents/students cancel the process. • System display users cancel results on screen. • No database connected. • Required data is not fulfilled . • Page can't be redirected, Please reload the page again.
Conditions of Satisfaction	 • Users must register themselves to give reviews to a tutor • To give a review, users must put their words in a Ethical manner.

<div align="center">Table 3.10: Review and Complain on Tutor</div>

10. Feature Top Rank Tutor(On homepage)

Card	As a student/parent, I want to show a list of top ranked teachers on the system so that I can take tuition from the best ones.
Conversation	From the perspective of a student I want to take tuition from the best teachers around my area. From the perspective of a parent I want to provide the best tuition to my children. I want to see a list of top tutors around my area, so that I can select a suitable tutor among them.

Confirmation	**Success:**
	• Students/Parents click on the homepage to see the available list of top ranked tutors.
	• System check and confirm parents/students qualified to see top ranked tutors Details on display.
	• Display Top Ranked Tutors Details.
	Failure:
	• Students/Parents click on the homepage to see the available list of top ranked tutors.
	• System check and confirm parents/students qualified to see top ranked tutors Details on display
	• Parents/students cancel the process.
	• System display users cancel results on screen and redirected to Homepage.
	• No database connected.
	• Page can't be redirected, Please reload the page again.
Conditions of Satisfaction	Users must register themselves to see Top Ranked Tutor.

Table 3.11: Feature Top Ranked Tutor

12. Platform for Course Materials

Card	As a student, I want an online class platform on the system so that I can attend tuition, view uploaded materials, attend quizzes, submit assignments to the system.
Conversation	From the perspective of a student I want a platform to attend tuition, view lecture materials uploaded by the tutor, Show quizzes questions and submit answers scripts, and also want to see other class members who are taking tuition in the same batch.

Confirmation	**Success:** • Students click on the Batch Page to access Course Materials • System check and confirm students qualified to see course materials. • Students can see uploaded materials on the system. • Students can download documents such as notes and exercises, tutors or upload notes. **Failure:** • Students click on the batch page to enter.. • System checks and confirms students are qualified to enter and see the course materials page. • System cancels the process. • System display user cancel result on screen. • No database connected. • Page can't be redirected, Please reload the page again.
Conditions of Satisfaction	Users must register themselves in an online batch to see course materials.

Table 3.12: Platform For Course Materials

3.2   Non Functional Requirements

Performance Requirements:

1. The database shall be able to accommodate a minimum of 3,000 records of students.

2. The software shall support use of multiple users at a time. There are no other specific performance requirements that will affect development.

Safety Requirements:

1. The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup and the system will ensure data safety.

Security Requirements:

Some of the factors that are identified to protect the software from accidental or malicious access, use, modification, destruction, or disclosure are described below:-

• Keep specific log or history data sets

• Assign certain functions to different modules.

• Restrict communications between some areas of the program

- Communication needs to be restricted when the application is validating the user or license. For example, using https.

- Username will be unique, the user can not create an account using the same username.

- Every user is required to have a strong password. Eg: numbers, characters and capital and small letters.

- The web-app should be capable enough to handle any kind of common Cyber attacks, like: SQL injection, RCE, CSRF, XSS, LFI/RFI.

- Restrict communications between some areas of the program

- Privacy of information, every user's password will be hashed. So, in case of data breach. Passwords won't be visible.

Software Quality Attributes:

1. The Quality of the System is maintained in such a way so that it can be very user friendly to all the users.

2. The software should be portable. So moving from one OS to another OS does not create any problem.

3. The software quality attributes are assumed as under:

- Accurate and hence reliable

- Secured

- Fast speed

- Compatibity

Appendices

Appendix A

Glossary

Term	Definitions
Active Article	The document that is tracked by the system; it is a narrative that is planned to be posted to the public website.
Author	Person submitting an article to be reviewed. In case of multiple authors, this term refers to the principal author, with whom all communication is made.
Database	Collection of all the information monitored by this system.
Editor	Person who receives articles, sends articles for review, and makes final judgments for publications.
Field	A cell within a form.
Member	A member of the Historical Society listed in the HS database.
Reader	Anyone visiting the site to read articles.
Review	A written recommendation about the appropriateness of an article for publication; may include suggestions for improvement.
Reviewer	A person that examines an article and has the ability to recommend approval of the article for publication or to request that changes be made in the article.
Software Requirements Specification	A document that completely describes all of the functions of a proposed system and the constraints under which it must operate. For example, this document.
System Admin	Developer team associated with the system
User	Reviewer or Author.

Table A.1: Glossary Table