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Software Requirements Specification

For Web Forum Design

Version 1.0 – approved

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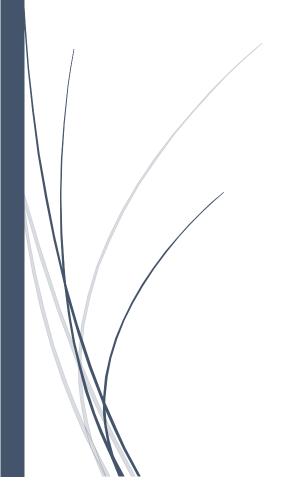Tsering Paljor

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The purpose of this document is to list the specifications and capabilities of the designed Web Forum. The following documentation will give a broad understanding into the scope of this project and will outline the capabilities and functions designed for the Web Forum. The product will be a web based forum where a community of users will be able to share questions and solutions to school based problems. The forum will provide a platform for those students who need help in different academic areas by allowing them to receive help from people all around the world. The release number of this product will be 1.0 as the first version released to the public. This SRS will cover the entirety of the system that will be created.

1.2 Document Conventions

The typographical conventions followed in this SRS include size 11 font (Calibri (Body)). The headers of this document are outlined in bold to allow for a more clear, visual representation of the topics to be discussed. The SRS will follow this convention throughout this report.

1.3 Intended Audience and Reading Suggestions

This document is intended for developers and testers of the web forum product. Developers can get a clear understanding of the scope of the project by reading this document so that the web forum may be designed and implemented as intended and with minimal errors. This document will serve as a manual for developers who will build the software system. Testers of the system may also review this document to understand the different capabilities and functions that must be tested to ensure proper functionality of the product. Project Managers may also glance at the SRS in order to be able to assign tasks to different developers and to ensure the product is designed efficiently and according to specifications.

1.4 Product Scope

The product will be a web based forum where users (in particular students) can sign up by registering, and ask any school related questions for academic purposes. Users will be able to upload questions or topics that they have difficulties with, and have other students tutor and assist them. They can also ask questions related to certain school topics and concepts and have fellow students help them master these concepts. The web site is targeted to one of the largest groups in the world, students. The website could generate massive revenues by offering paid memberships or through advertising. This could turn the website to a multi-million dollar business which could expand to a wider variety of student assistance software and projects. The goal of this project is to become a house hold name which students will turn to when they have difficulties in learning or understanding school materials. The web forum will target all students studying all majors, from different grades and years of studies in elementary, post-secondary, and university/college schools.

1.5 References

IEEE Recommended Practice for Software Requirements Specifications - http://www.math.uaa.alaska.edu/~afkjm/cs401/IEEE830.pdf

2. Overall Description

2.1 – Product Perspective

This product is a new self-contained product. Students are limited to the teaching that they go through in school and often find themselves lost and hopeless when tackling new material or concepts which they do not understand. There is also certain topics that are understood by some students and not by others, therefore, the web forum allows these students to help each other by teaching concepts that they understand and asking for help on ones that they do not.

2.2 – Product Functions

This product must:

- Let the user log in to the forum, or allow the user to create an account if the user does not already have one
- Validate the user and use the captcha authentication system to ensure that no bots are used to attack and harm the website while registering.
- Allow the user to post topics in the discussion board
- Password protect the website so that only administrators of the website can access certain features or webpages of the website
- Have an RSS feed associated with the website so the people who subscribe to the feed can receive frequent updates from the website
- Allow users to comment or reply to topics created by other users
- Allow the user to sign out of the web forum

2.3 – User Classes and Characteristics

There will be 3 user classes for the forum

1) Website Administrator
    a. Will have password protection credentials to access all directories of the website
    b. Will have unlimited privileges to all of the web pages
2) Forum Administrator
    a. Will have administrator privileges within the forum to create categories and to monitor regular users
    b. Also has same accesses as regular user
3) Regular User
    a. Can post topics and reply to other users and ask questions
    b. Can't make any categories as these users will not have admin privileges

2.4 – Operating Environment

The web forum will be web based and should run on any operating system or browser. The web server will be using Apache and .PHP for all requests. Users with a basic internet connection should be able to access the website without needing any special software other than a basic web browser on their local operating system, even on mobile platforms (Windows, Linux, Mac OSX, iOS etc.)

2.5 – Design and Implementation Constraints

The developers must know how to use the PHP programming language along with apache web server, which could be a constraint. The operating system used must support Apache, which is supported on many operating systems. The database must be created in MySQL and the SQL database language which the developers must be fluent in. The language of the forum will be in English, and the programming language will be in PHP. The developers will be responsible for maintaining the website and the customers will not have the authority to do so.

2.6 – User Documentation

There will be no user manuals or tutorials for this product as it is a straight forward webpage. The headings are clear and allow the user to navigate around the website with no tutorials needed.
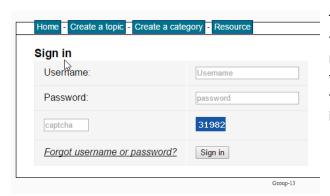
2.7 – Assumptions and Dependencies

Since the product is web based, there are little or no factors that will affect the running of the forum on different operating systems. Any user with an internet connection and web browser (which can run the website) will be able to access the forum.

3. External Interface Requirements

3.1 – User Interfaces

The title of the forum is at the center top of the page. The links to different pages of the web forum are listed on a bar at the top of the page below the title. The page links are to the left and the login and sign up links are to the right to differentiate between the navigation and authentication pages. The forum categories are then listed underneath the 'Category' header and show the date of the last topic created inside them to the right of the page.

The sign in page will allow the user to log in with the proper credentials and will allow the user to reset their password and username if they have forgotten it. The sign up page will be very similar to the login page as it will ask for the same type of information.

3.2 – Hardware Interfaces

The hardware needed to access the website or to run the server will be any PC with an operating system that can run apache, a keyboard for text input, a mouse for navigation and a monitor for viewing the webpages.

3.3 – Software Interfaces

The server side will need Apache software to run the requests submitted by clients, and will need a web browser to test the web pages. The client machine will need an operating system and a web browser to access the website.

3.4 – Communications Interfaces

Communications between the client and the server will be in PHP format. The HTTP protocol will be used to transmit the web pages from the server to the client machine. PHP will be used for file uploads and no FTP will be implemented in the website. A web browser will be needed on server and client sides so that the client may view the web pages that it requests. To transfer packets of information on the internet (sent between client and server) the TCP/IP web protocol will be used. PHP forms will be used to submit information from the client such as username, password, email, and captcha responses.

4 System Features

1) User Registration – High
   a. The user registration will allow users to register with login credentials to access the forum
   b. This is highly important since no user can access the features of the forum without logging in and registration is required prior

      c.   This is a functional requirement as the user can't use the forum unless registered and signed in

  2) User Login – High
      a.   Users who have registered must be able to log in so that they can access the forum pages such as replying to comments or starting new topics
      b.   Users must also be able to sign out of the forum for security purposes
      c.   This is a functional requirement as the user can't use the forum unless registered and signed in

  3) Creating a topic – Medium
      a.   Users need to create topics to participate in similar discussions or questions
      b.   Topics will allow similar topics to be grouped together for organization and ease of access

  4) Creating a category – Medium
      a.   The administrators will need to add certain categories based on needed interests.
      b.   The categories will be included as needed by the administrator

5 Other Nonfunctional Requirements

5.1 – Performance Requirements

Users should be able to login within a matter of seconds and be able to post discussions and topics about topics that they need explained. The website should be clear and easy to read and understand so that anyone visiting the forum for the first time will be able to use the forum with ease.

5.2 – Safety Requirements

To ensure that students do not upload illegal documents or copyrighted materials, the forum administrator will need to monitor the web content to ensure that all documents and topics are legal and are not breaching any copyright laws or privacy.

5.3 – Security Requirement

Security requirements include the user registration system and the captcha system. The registration system will ensure that only registered users can access the forum and the captcha system will protect the website from any bots or DDOS attacks.

5.4 – Software Quality Attributes

The product should be portable, and be available not only on desktop computers but also on laptops, tablets and mobile devices. The web forum must have clear font, visual attractiveness using colors, and large text to allow for readability. The ease of use of the website is very important as users will have to navigate through the different pages of the website without any tutorials or user manuals.

5.5 – Business Rules

1) Website Administrator
   a. Will have password protection credentials to access all directories of the website
   b. Will have unlimited privileges to all of the web pages
2) Forum Administrator
   a. Will have administrator privileges within the forum to create categories and to monitor regular users
   b. Also has same accesses as regular user
3) Regular User
   a. Can post topics and reply to other users and ask questions
   b. Can't make any categories as these users will not have admin privileges

Appendix A: Glossary

PHP – Hypertext PreProcessor (web programming language)

Apache – web server to handle requests

HTML – Hypertext Mark Up Language (language understood by the browser)

TCP/IP – Internet Protocol used for transmitting packets of data from server to client and vice versa

Appendix B: TBD List

- All items disclosed