**Chapter-4**

**SOFTWARE REQIREMENTS SPECIFICATION**

**4.1 INTRODUCTION**

**4.1.1 PURPOSE**

The purpose of this document is to outline the operational requirements to my website in order to make it more attractive, efficient & user-friendly.

**4.1.2 SCOPE OF PROJECT**

* Scope of this project is very broad compared to manually taken exams. They are:-
* This app can be used in educational institutions as well as in corporate world.
* Can be used anywhere any time as it is a web based application (user location doesn’t matter).
* No restriction that examiner has to be present when the candidate takes the test.
* No manual work of preparing and storing the result information.
* Less time consumption, as the result is calculated immediately after the test and displayed to the student/candidate.
* For students/candidates, it saves time of going too far away centers to give exams.

**4.2 INTENDED AUDIENCE:**

The different types of reader that this document is intended for are developers, project managers, marketing staff, users, testers, and documentation writers. The rest of this SRS contains Overall Description, External Interface Requirements, System Features, Non Functional Requirements and Other Requirements. Suggested sequence for reading the document - begin with the overview sections and proceed through the sections that are most pertinent to each reader type.

**4.2.1. Developers:** The rest of this SRS contains Overall Description, External Interface Requirements, System Features, Non Functional Requirements and Other Requirements.

**4.2.2. TESTERS:** The testers would use this document to know the interface website.

**4.2.3. Users:** The users would use this document to verify if the requirements specified satisfy their needs.

**4.3 DEFINITIONS, ACRONYMS, AND ABBREVIATIONS**

**TABLE 1.1**

**ABBREVIATIONS AND THEIR DEFINITIONS**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.NO** | **ABBREVIATION** | **FULL FORM** | **DEFINITION** |
| **1** | SRS | System requirement  and specification | It completely describes all of the functions of a proposed system and the constraints under which it must operate. |
| **2** | PHP | Hypertext Preprocessor | PHP is a server side scripting language. that is used to develop Static websites or Dynamic websites or Web applications |
| **3** | CLI | Common language Infrastructure | International Standard for creating execution and development environments. |
| **4** | Database | .database | Collection of all the information monitored by this system. |

**4.4 REFERENCES**

* Christopher Bishop (1995). Neural Networks for Pattern Recognition, Oxford University Press. ISBN 0-19-853864-2.
* Stuart Russell & Peter Norvig, (2009). Artificial Intelligence – A Modern Approach. Pearson, ISBN 9789332543515.
* Ray Solomonoff, An Inductive Inference Machine, IRE Convention Record, Section on Information Theory, Part 2, pp., 56–62,1957.
* Ray Solomonoff, An Inductive Inference Machine A privately circulated report from the 1956 Dartmouth Summer ResearchConferenceonAI.
* "Careers Blueprint". Excellence Gateway. Archived from the original on 2014-07-24. Retrieved 2014-01-11.
* Hooley, T. (2012). "How the internet changed career: framing the relationship between career development and online technologies" (PDF). Journal of the National Institute for Career Education and Counselling (NICEC).

**4.5 OVERVIEW**

The web Application provides to conduct Online Stream Analysis Aptitude Test. It saves time as it allows number of students to gives the exam at a time and displays the results as the test gets over, so no need to wait for the result. It is automatically generated by the server. Administrator has a privilege to create, modify and delete the test papers and its particular questions. User can register and login.

**4.6 OVERALL DESCRIPTION**

**4.6.1 PRODUCT PERSPECTIVE**

OATS is an on-line aptitude test system. It is accessible via the Internet, 24 hours a day, 7 days a week. The objective of this app is to reach and connect candidate and examiner in remote communities and conduct exams in a virtual environment online. This app will only allow the registered users to enter the test module. The various stages in the app are as follows:-

* Login
* System overview
* Test
* Result

**4.6.1.1 Log in:**

This window offers the user two choices for logging into the system according to the preset privileges -

Candidate login and Administrator login.

The candidate login will take the user to the user profile.

The Administrator Login will take the user to the administrator profile.

**4.6.1.2 System Overview:**

This window can only be accessed by the administrator. It allows the administrator to add and edit exams.

**4.6.1.3 Test:**

This window contains all the exams candidate can give. All these exams are organized according to the categories they fall in. The test window will be different for students and corporate employees.

**4.6.1.3 Result:**

This window displays the result of exams the candidate has just appeared. This data will be saved and displayed in the user profile. If the score is in top 10, the result will also be displayed in the rankings area of result window.

**4.6.2 PRODUCT FUNCTIONALITY**

The functions are divided according to the user types such as:- Administrator:-

The function of the administrator is to add/edit exams in the test module. Candidate:-

The function of the student is to update his/her profile and give various exams.

**4.6.3 USER CHARACTERISTICS**

The various users of this app are classified into four types:-

• Administrator

• Candidate

• Student

• Corporate Employee

This app requires the user to have characteristics such as the user should be able to communicate and write in English and should have previous experience of giving an online exam. If not, the candidate should be instructed about the basics usage of the app by authorized personnel.

**4.6.4 OPERATING ENVIRONMENT**

This app is internet based so it will run in any operating system with internet access through a web browser.

**4.6.4.1 OPERATING SYSTEM:**

Windows

**4.6.4.2 SOFTWARE REQUIREMENT:**

**Microsoft visual studio:** Microsoft visual studio is an integrated development environment (IDE) from Microsoft. It is used to develop computer programs, as well as websites, web apps, web services and mobile apps. Visual Studio includes a debugger that works both as a source-level debugger and as a machine-level debugger. The Windows Forms designer is used to build GUI applications using Windows Forms.

**IIS:** Internet Information Services (IIS, formerly Internet Information Server) is an extensible web server created by Microsoft for use with the Windows NT family. IIS supports HTTP, HTTP/2, HTTPS, FTP, FTPS, SMTP and NNTP. It has been an integral part of the Windows NT family.

**4.6.4.3. HARDWARE REQUIREMENT:**

**Ram:** 1 GB(2 GB suggested)

**HDD:** 10 GB(40 GB suggested for long term use)

**Processor:** i3(or any other higher configuration)

**Internet:** Independent LAN/WAN for the college.

**4.6.5 DESIGN AND IMPLEMENTATION CONSTRAINTS**

The candidate is allowed to give the exams any number of times, until specified otherwise by the administrator while building the test. While giving the exam the candidate is given only a set amount of time and the remaining time should be displayed, after which the exam should close and display the result.

**4.6.5.1. MY SQL:**

SQL is used for storing data as a Back End and it is compatible also for web applications and is also provide its default web server for database.

**4.6.5.2. JQuery:**

JQuery is a concise and fast JavaScript library that can be used to simplify event handling, HTML document traversing, Ajax interactions and animation for speedy website development.

**4.6.5.3. PHP:**

Stands for "Hypertext Preprocessor." (It is a recursive acronym, if you can understand what that means.) PHP is an HTML-embedded Web scripting language. This means PHP code can be inserted into the HTML of a Web page. When a Php pages is accessed, the PHP code is read or "parsed" by the server the page resides on. The output from the PHP functions on the page are typically returned as HTML code, which can be read by the browser.

**4.6.5.4. Machine Learning:**

Machine Learning is a sub-area of artificial intelligence, whereby the term refers to the ability of IT systems to independently find solutions to problems by recognizing patterns in databases. In other words: Machine Learning enables IT systems to recognize patterns on the basis of existing algorithms and data sets and to develop adequate solution concepts. Therefore, in Machine Learning, artificial knowledge is generated on the basis of experience.

**4.6.6 USER DOCUMENTATION**

The product will include a user manual. The user manual will include product overview, complete configuration of the required software and hardware, technical details and contact information.

**4.6.7 ASSUMPTIONS AND DEPENDENCIES**

**4.7 EXTERNAL INTERFACE REQUIREMENTS**

**4.7.1 USER INTERFACES**

**Registration Screen:**

Various fields available on this screen will be:

* Login Name
* Email Id
* Password

**Login Screen:**

Fields available on this screen are:

* Login Name
* Password

**Entering Questions:**

Various Fields are:

* Questions
* Options (4)
* Correct Answer

**Exam Details Screen:**

Various Fields are:

* Exam Name
* No. Of Questions
* Time Limit
* Passing Marks

**Result Displaying Screen:**

Various Fields are:

* No. Of Correct Questions
* No. Of Incorrect Questions
* Total Marks
* Result(Pass/Fail)

**4.7.2 HARDWARE INTERFACES**

Screen resolution of at least 800X600 is required for proper and complete viewing of screens. Higher resolution will be accepted.

**4.7.3 SOFTWARE INTERFACES**

* Any windows based operating system.
* MySql Server Database
* Php and machine learning

**4.7.4 COMMUNICATION INTERFACES**

The system user some communications interfaces like web browser for running application, email for transaction and ftp and http protocols for the access and access and updates the data of system.

**4.8 FUNCTIONAL REQUIREMENTS**

This section gives a functional requirement that applicable to the On-Line Aptitude Test. There are three sub modules in this phase.

* Candidate module.
* Examiner module.
* Administrator module.
* Result rankings module
* Discussion Forum module

**4.9 USE CASES**

**4.10 NON-FUNCTIONAL REQUIREMENTS**

**4.10.1 PERFORMANCE**

Site performance is quite good but it may work slower depends on internet connectivity speed i.e. 80% of work will be processed in seconds though JavaScript may not be properly worked as it may require high speed connection to download.

**4.10.2 RELIABILITY**

The application should be highly reliable and it should generate all the updated information in correct order.

**4.10.3 AVAILABILITY**

System will be available around the clock except for the time required for the backup of data.

**4.10.4 SECURITY**

Application will allow only valid users to access the system. There are two types of users namely administrator and student. Security is based upon the individual user ID and Password.

**4.10.5 MAINTAINABILITY**

The installation and operational manual of examination management system will be provided to user.

**4.10.6 PORTABILITY**

The application should be portable on any windows based system.

**4.11 INVERSE REQUIREMENTS**

**4.12 DESIGN CONSTRAINTS**

**4.13 LOGICAL DATABASE REQUIREMENTS**