Software Requirements Specification

for

Database Management System:

Coaching Institution

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Sem 4

28- April-2015

# Scope

This section gives a description and overview of everything included in this SRS document. Also, the purpose for this document is described and a list of abbreviations and definitions is provided.

## Purpose

The purpose of this document is to present a detailed description of the Database management system for a Coaching Institution. It will explain the purpose and features of the system, the interfaces of the system, what the system will do, the constraints under which it must operate and how the system will react to external stimuli. This document is intended for both the stakeholders and the developers of the system and also describe the details of required functionalities and providing a high level view.

## Document Conventions

The SRS document has been written in Times New Roman. Font size of the content is 12. The sub-headings have been highlighted with bullets as and when required

Software product(s) to be produced by name:

a. Student login and access (Priority: Medium)

b. Teacher Login and access (Priority: High)

c. Staff login and access (Priority: High)

d. Administrator direct access to database (Priority: Medium)

## Product Scope

Database Management System for a Coaching Institution intends on cleanly managing and presenting the database to the intended users. It provides interactive and simple user interfaces for its non-admin users i.e. Staff, Teachers and Students. Each user is allowed only certain privileges that guarantees the integrity and safety of the database. The administrator is given full access to the backend of the database. Administrator is thus given full privilege. Coaching institutions have a huge amount of data. It must be managed and organized so that users can search, retrieve and update data as needed.

# Users

## User Classes and Characteristics

The various users who will use this product are as follows

* Administrator
* Includes staff of authorized administrators who will overlook the whole Coaching institution management
* They are awarded full access and can thus alter the data in the database as and when required
* They do not have the access to change the structure of the database
* Staff
  + One staff member per branch of the coaching institute is assigned to access use the database management system
  + The staff is required to have a knowledge of the relations present in the db.
  + They should have an understanding to the extent of their access.
  + Staff is allowed to add new Students, Teachers and Alumni.
  + They are required to update exam details as soon as one is conducted and checked.
* Teachers
  + Teachers are required to know their limit of their privileges.
  + They are not required to have any understanding of the database structure.
  + They have view access of their profile, finances and timetable.
  + Teachers can search for profile of students
* Student
  + They have only view access. They are limited to the amount of information they can view
  + Students can view personal profiles, personal finance, timetable and marks for exams conducted

## User Interfaces

Users are provided interactive interfaces to access the database. Each user is welcomed with a Login GUI to authenticate and validate the user. The user is then taken to their respective GUI’s designed with tabs that provide easy flow of changing view of different parts of the database. The user can easily navigate and access according to their degree of granted privilege. The Database Management System for Coaching Institution is developed under the SQL Database management System using MySQL (backend) and C# using Visual Studio tool (front-end).

# Functional Requirements

The major services and functional requirements for the product can be illustrated in this section. This section is organized by use cases for major system features. In the following, necessary description is provided for each use cases in the system. Each use case description provides information of the associated actors, triggering condition, preconditions, post conditions, response sequences, exceptions and functional requirements (assumptions).

## Login

3.1.1 Description and Priority

To use the Coaching Institute Database Management System, the users are required to login with their registered credentials to access and view the database.

3.1.2 Stimulus/Response Sequences

* Administrator:

Login using unique username and password to view and update the database. Confirmation for authorization and authentication check will be through the Login relation.

* Staff:

Login using staff assigned (by the administrator) username and password to view and update the database. Confirmation for authorization and authentication check will be through Login relation.

* Teacher:

Login using individual teacher username and password view certain portions of the database. Confirmation for authorization and authentication check will be through Login relation.

* Student:

Login using registered username and password to view portion of database. Confirmation for authorization and authentication check will be through Login relation.

3.1.3 Functional Requirements

REQ-1:

The user is required to have a valid usernames and passwords. No unintentional user has access to the database

## Staff interface

3.2.1 Description and Priority

After login, staff can view and update data. The data updated will be directly reflected in the backend database.

3.2.2 Stimulus/Response Sequences

* View profile

ble. The user is required to select the desired colour and design for background.

* Upload picture

Tab to upload image from the PC of the user should be selected by the user. The image needs to be in JPEG or PNG format. The image can be dragged and resized on the canvas. This functionality requires a mouse for hardware and the user’s knowledge of implementing these functionalities using a mouse

* Choose Stickers

To select ‘stickers’ i.e comic images, the user should select the stickers tab. A selection of images will be showcased. The user can select any image any number of times. The image can be dragged on the canvas. It can be resized according to the user’s requirement

* Add Text

To add text to the template, the user is required to select the text tab. A text box will appear, in which the user can enter the text to be added to the template. Various font styles and font colours will be available to choose from. The user can drag around the text on the canvas to the desired location.

3.2.3 Functional Requirements

REQ-1:

The user should have the knowledge of working with a mouse to perform functionalities of selection and dragging. Hence mouse is an important hardware requirement.

## Teacher interface

3.3.1 Description and Priority

After Login teacher can view portion of the database related to them.

3.3.2 Stimulus/Response Sequences.

* View personal profile

The user can view personal details such as name, contact etc. User can also view the courses, semesters and sections taught by the user.

* View personal Finance

The user can view their salary and bonus given to them by the Coaching Institution.

* View personal Timetable

The user can check their personal timetable. The user would be working at only one branch of the Institution and will be handling various classes of various semesters.

* Student search

The user can search for a Student’s details by entering student identification credentials.

3.3.3 Functional Requirements

REQ-1:

The user should have the software downloaded.

REQ-2:

The front end needs to be successfully connected to the backend database

## Student interface

3.4.1 Description and Priority

After Login Student can view portion of the database related to them.

3.4.2 Stimulus/Response Sequences.

* View personal profile

The user can view personal details such as name, contact etc. User can also view the course, semester and section currently taken by the user.

* View personal Finance

The user can view their fees, amount paid and pending to be paid to the Coaching Institution.

* View section Timetable

The user can check the section timetable. The user would be studying at only one branch of the Institution, one semester at a time, and will be studying various subjects each semester.

* Result

The user will be directed to another GUI. The student is required select the subject and semester to view the marks of the exam corresponding to that subject and semester.

3.4.3 Functional Requirements

REQ-1:

The user should have the software downloaded.

REQ-2:

The front end needs to be successfully connected to the backend database

# Nonfunctional Requirements

## Performance Requirements

Performance should not be an issue because our software has clean and direct access to the databse. Changing screens will require very little computation and thus will occur very quickly. This is cost-free software hence queries used by the front end of the application will be highly efficient, taking only a fraction of a second to compute.

## Safety Requirements

Database Management System for Coaching Institute will not affect data stored outside of its servers nor will it affect any other applications installed on the user’s machine or over the internet. It cannot cause any damage to the computer or its internal components. The only potential safety concern associated with this application applies to virtually all the computer applications.

## Security Requirements

This application assumes that only the user or whoever he/she allows will have valid username and password registered in the database. The Username awards level of authorization to the user. Since it is password protected, there is a method to authenticate the user’s identity.

## Software Quality Attributes

The graphical user interface of Database Management System: Coaching Institute is to be designed with usability as the first priority. The application will be presented and organized in a manner that is visually appealing. Overall, the application balances both the ease of use and the ease of learning. The layout and UI of the app will be simple enough that users will take no time to learn its features and navigate through it with little difficulty.

## Business Rules

The user is required to have a registered Staff/Teacher/Student account. The Institute should have the complete application, both front and backend. The Institution can only operate on the set interfaces and database data. They are not authorized to alter the look of the GUI’s and the structure of the database.