Software Requirements Specification

For

Student Registration System

Version 1.2 approved.

Submitted To-

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Dated-

20th February 2016

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Revision History

Name	Date	Reason For Changes	Version
Student Registration System	4th February 2016	Format Flaws and suggestions by the course in charge	1.0
Student Registration System	10th February 2016	Data dictionary and use case diagrams were not included.	1.1

1. Introduction

1.1 Purpose

The purpose of this document is to present a detailed description of the offline Student Registration System. 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. It will also describe the software and hardware requirements of the system as well as its design and implementation constraints.

1.2 Document Conventions

The text below has been typed as per the following scheme-

- All section headings have been typed in Times New Roman font with bold style in size 18.
- All section sub headings have been typed in Calibri font with bold style in size 14.
- The text of the document has been typed in Times New Roman font in size 11.
- The captions of tables and figures have been typed in Times New Roman font with Italics style in size 10.

1.3 Intended Audience and Reading Suggestions

This document has been written as such to be of use to members of the designing team, development team, the testing team and any other technical personnel associated with this project. It also aims to give a good insight about the software to the various clients (who wish to understand the utility of this software for themselves), teachers, students of Computer Science related courses and any other person with a basic knowledge about computers.

1.4 Product Scope

This document will be used by the following people-

- Design team to chalk out a suitable design strategy for the project.
- The course in charge for assessment of assignment
- The course in charge for testing of functionalities provided in the code.

1.5 References

The conception of this project was greatly inspired and aided by the following sources-

- https://web.cs.dal.ca /~hawkey/3130/srs_template-ieee.doc
- http://cse.msu.edu
- http://itech.fgcu.edu
- http://www.csis.pace.edu

2. Overall Description

The Student Registration System aims to make the offline handling of vast amounts of data maintained by educational institutions simpler. This software provides handy options for the addition of records with plenty of fields, like the enrolment number, faculty number, name, current year, branch, backlog status, telephone number and e-mail id of the students. In case a student enters 'Y' as Backlog Status, a whole list of courses flashes before him to select the courses in which he has backlog.

Field Name	Data type	Field Length	Constrain	Description
Enrolment Number	String	7	Primary Key	Enrolment Number of the student
Faculty Number	String	9	None	Faculty Number of the student
First Name	String	15	None	First Name of the student
Middle Name	String	15	None	Middle Name of the student
Last Name	String	15	None	Last Name of the student
Branch	String	12	Departments whose database is available.	Branch of study of the student
Current Year	Integer	1	Must not be less than 0 or greater than 4	The year in which the student is enrolled in at present
Current Semester	Integer	1	Must not be less than 0 or greater than 8	The semester in which the student is enrolled.
Phone Number	String	15	None	Phone Number(Mobile or landline) of the student
E-mail id	String	10	None	E-mail id of the student
Backlog Status	Character	1	'Y' or 'N'	Whether the student has a backlog in any subject or not.

Data Dictionary of the database of students

It provides separate login interfaces for students and faculty members where each can login with their unique passwords. Once logged in, the software offers different functionalities depending upon the access level of the person. People without an account (referred to as miscellaneous users on the homepage) in the software can also view a limited amount of information for example such people can view only the total number of students in a department but not the names of the students of that department.

Apart from the entry of new records for registration, the software also allows modification of pre-existing records at the same time ensuring that no user makes a mistake by entering a detail which has no relevance

for him, for example the software ensures that no student of Civil Engineering registers for any course of Computer Engineering. The software also makes it possible to view the details of various courses (like the course number, instructor's name, credits carried by the course etc.) while registering for the course.

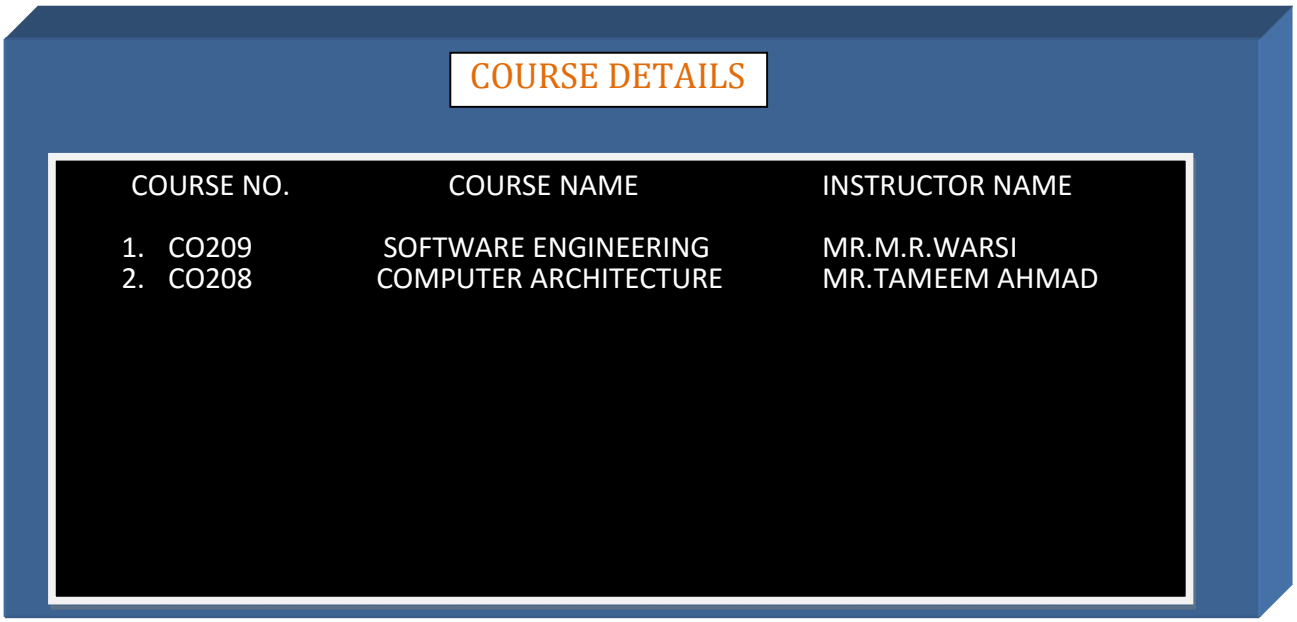

Figure 1-Screen showing details of various courses

Furthermore, it offers the sorting of data on the basis of entered fields like course-names, graduation year etc hence giving a ready picture to a user who wishes to view only a certain strata of information. It also comes with a useful feature of counting the credits applied for by a student in a given semester.

The program terminates in case a person with an account (student or a faculty member) decides to logout or a miscellaneous user decides to exit.

With all of its above mentioned features, this Student Registration System can serve great purpose in almost all educational bodies.

2.1 Product Perspective

This Student Registration system is being developed as a part of a home assignment which will be evaluated by the course in charge for the course 'Software Engineering' (CO-209).

2.2 Product Functions

The major functions provided by this software are as follows:

1. A function to help the students and faculty to log in with their passwords.
2. A function for taking input of new records from students.
3. A function to display the record of the student on the basis of the entered enrolment number and provide options for editing the data.
4. A function to display the total number and names of students enrolled in a particular course.
5. A function to display the total number and names of students studying in a particular year.
6. A function to display the total number and names of students of a particular department.
7. A function to display the names of students along with the respective subjects in which they have the backlog.
8. A function to display the total number and names of students with backlog in a particular subject.
9. A function to take suggestions from the user.

2.3 Classification of Users

The main user classes of this software are:

1. STUDENTS: Students who have to register for the courses. They should be enrolled in the college in a particular year with a valid enrollment number and faculty number.

2. FACULTY MEMBERS: Faculty members of various departments who wish to view various details of their courses for example the number and the names of the students enrolled in their course.

3. MISCELLANEOUS: Any person who wants to access the information regarding the educational trends of the college.
E.g.: College staff, research scholars etc.

2.4 Operating Environment

A Windows Operating System with a compiler that supports C like TurboC, CodeBlocks etc. is well suited for this software.

2.5 Design and Implementation Constraints

The software faces the following design and implementation constraints-

- The programming will be done in C.

2.6 Assumptions and Dependencies

Some pivotal assumptions made during the conception of this project were-

- The students and faculty members do not share their password with anyone else.
- Log in options are available only for a limited number of faculty members(i.e. it is not possible to create login accounts for any new faculty members, unlike students)
- It has been assumed that the student will fill all the fields (i.e, won't leave any field blank.)

3. External Interface Requirements

3.1 User Interfaces

The home screen appears with a menu for student and faculty login and limited access options for outsiders. Once logged in, a menu offering various viewing options appears, the options vary according to the user class using it.

Figure 3- Screen showing various login options

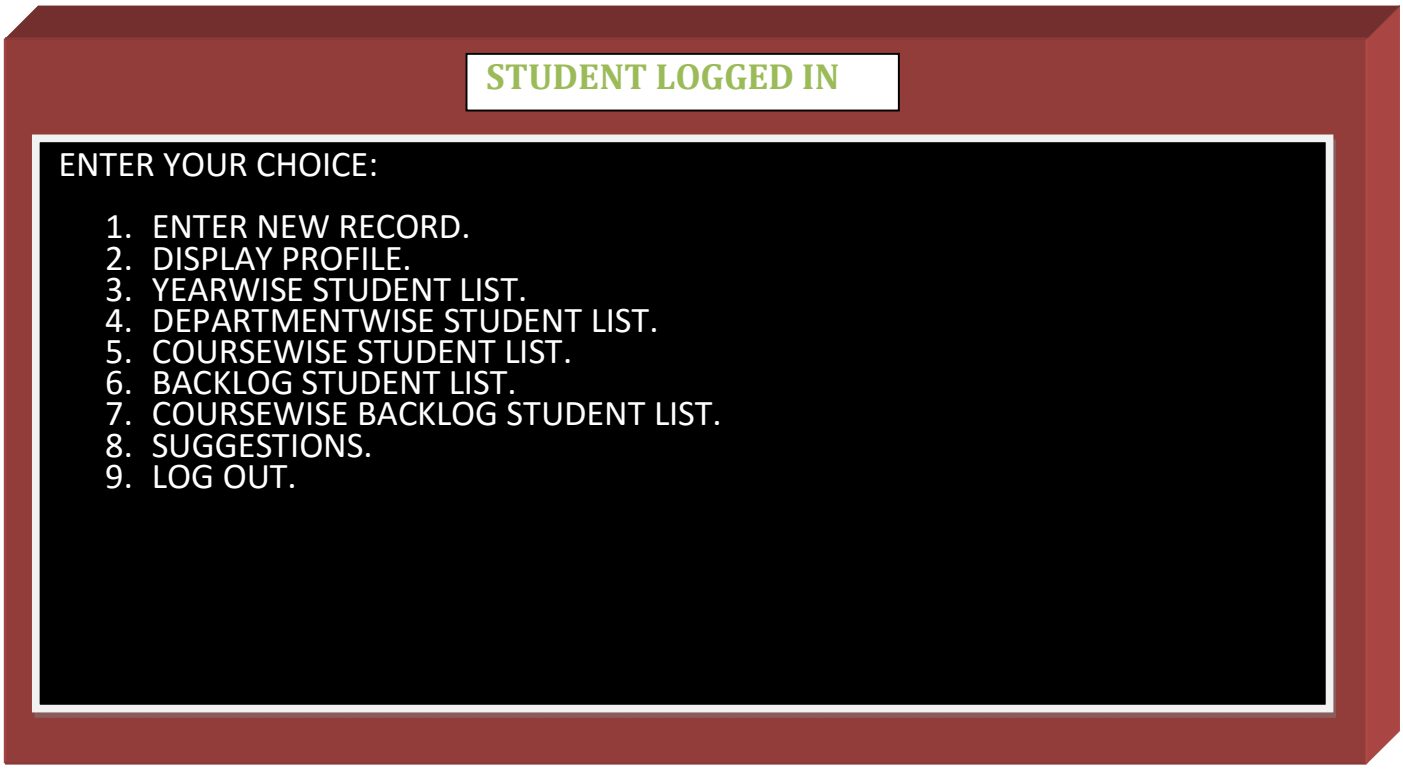

Figure 4-Screen showing various options available to a logged in student

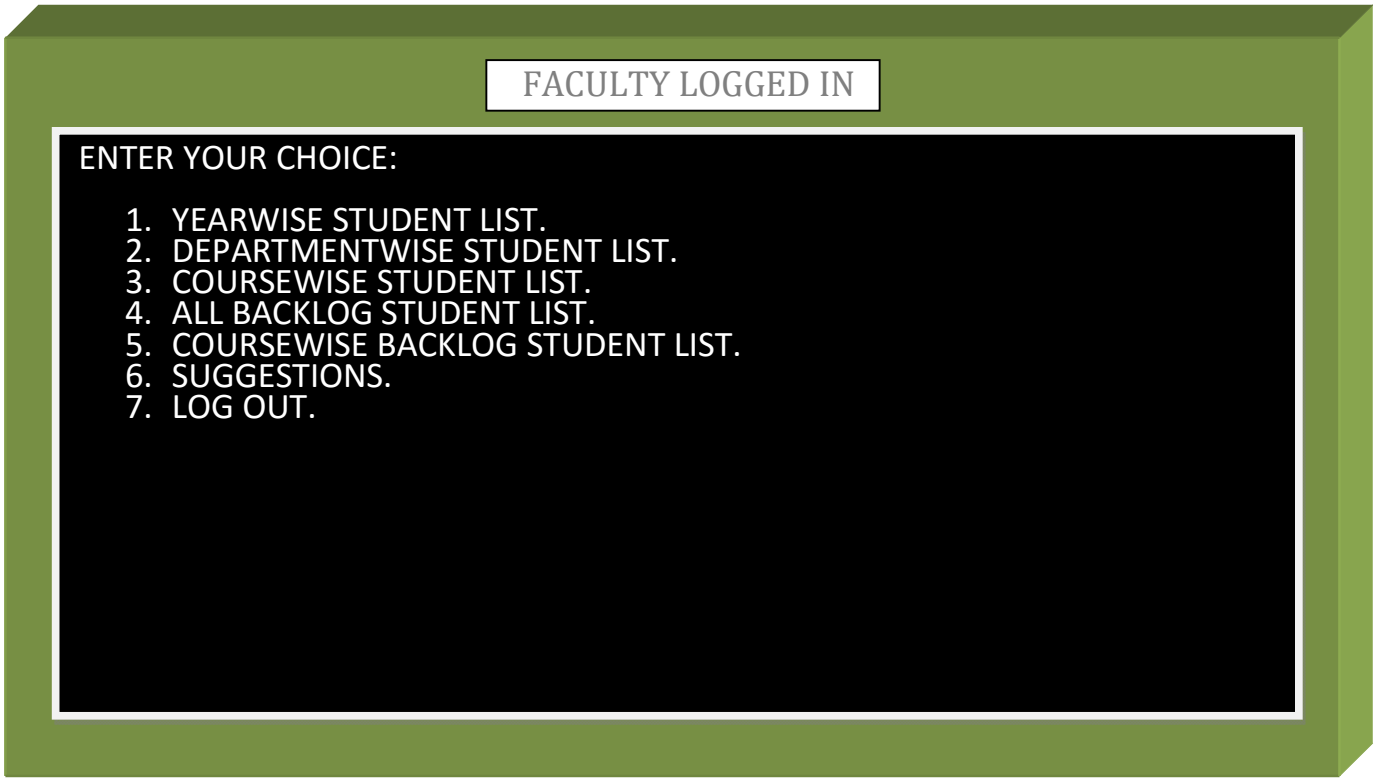

Figure 5-Screen showing various options available to a logged in faculty member.

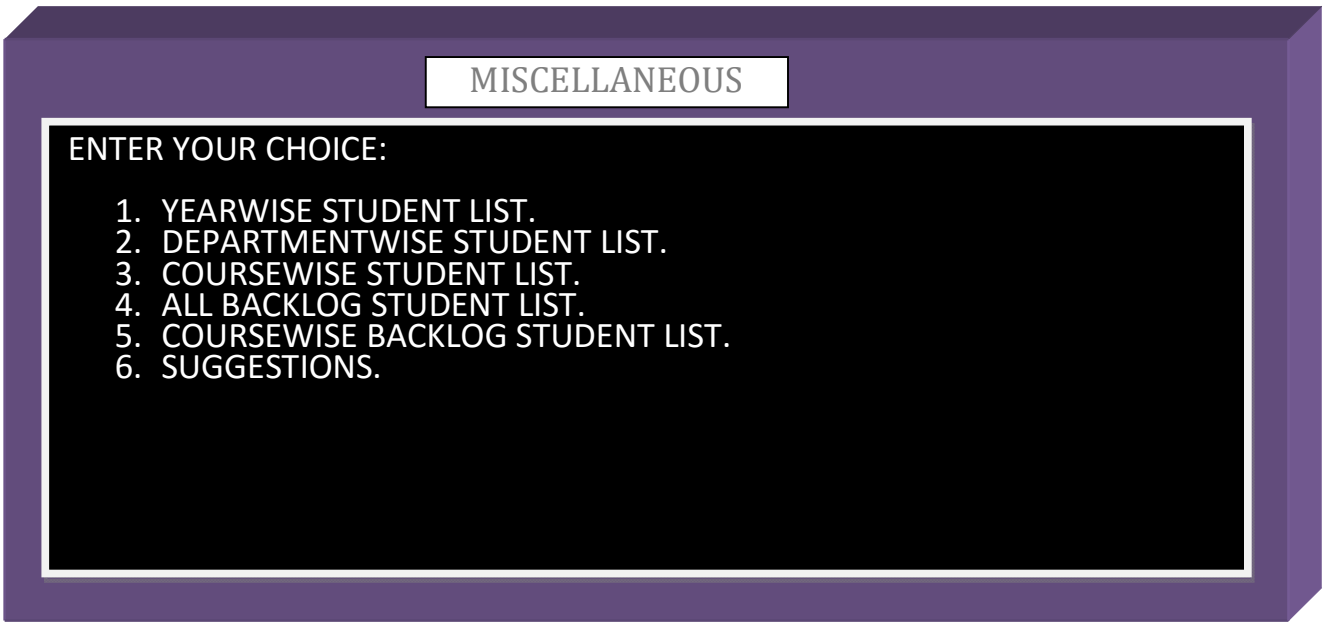

Figure 6-Screen showing various options available to an outsider.

3.2 Hardware Interface

Input is taken through keyboard.

3.3 Software Interfaces

The software interacts with no other software except the Operating System .

4. Functional Requirements

Following is a description of various user interactions with the software in case of the possible events and situations.

4.1 Student Profile

- Purpose

  View all available details about the student whose enrolment number has been entered and then provide options of editing the detail to the user.

- User

  A student with a valid account.

- Input

  Enrolment number of the student whose record is to be viewed.

- Result

  Details about the student (like name, phone number, email id etc.) whose enrolment number has been entered are displayed.

- Exception

  The records will not be displayed in case the user enters an enrolment number which is not registered in the memory or the record for that enrolment number does not exist till then.

4.2 Students enrolled in a particular course

- Purpose

  View the total number and the names of the students enrolled in the course with the entered course number.

- User

  Students and faculty members can view the names and total number of the students enrolled in that course where as miscellaneous users can view only the total number of students enrolled.

- Input

  Course number of the course whose detail is to be viewed.

- Result

  Total number and names of the students enrolled in the course with the entered course number are displayed.

- Exception

The information will not be displayed in case the user enters a course number which is not registered in the memory.

4.3 Students in a particular year

- Purpose

  View the total number and names of all the students enrolled in the entered year of the B.Tech course.

- User

  Students and faculty members can view the names and total number of the students enrolled in that year where as miscellaneous users can view only the total number of students enrolled.

- Input

  Year for which the detail has to be viewed

- Result

  Total number and names of the students enrolled in the entered year are displayed.

- Exception

  The records will not be displayed in case the user enters an year which is not registered in the memory.

4.4 Students in a particular department

- Purpose

  View the total number and names of all the students enrolled in the entered department of the college.

- User

  Students and faculty members can view the names and total number of the students enrolled in that department where as miscellaneous users can view only the total number of students enrolled.

- Input

Department for which the detail has to be viewed.

- Result

Total number and names of the students enrolled in the entered department are displayed.

- Exception

The records will not be displayed in case the user enters a department which is not registered in the memory.

4.5 Students with Backlog

- Purpose

View the names of all the students who have a backlog in any course.

- User

Students and faculty members can view the names and total number of the students with a backlog in any course where as miscellaneous users can view only the total number of students enrolled.

- Input

None

- Result

Names of the students with a backlog in any course are displayed.

- Exception

None

4.6 Students with backlog in a particular course

- Purpose

View the total number and names of all the students having a backlog in the course with the entered course number.

- User

Students and faculty members can view the names and total number of the students with backlog in the entered course where as miscellaneous users can view only the total number of students enrolled.

- Input

Course number of the course for which the detail has to be viewed.

- Result

Total number and names of the students having a backlog in the course with the entered course number are displayed.

- Exception

The records will not be displayed in case the user enters a course number which is not registered in the memory.

4.7 Registration

- Purpose

Register the students for the befitting courses.

- User

Students.

- Input

Faculty number, enrolment number, name, current year, branch, telephone number, e-mail id, relevant courses and backlog status of the student.

- Result

The student's details are added to the database and he gets registered for the semester.

- Exception

The records will not be added in the following cases-

i. The user enters any erroneous detail.
ii. His number of credits exceeds the pre-allotted number for his semester and branch.
iii. The record for the entered enrolment number already exists.

4.8 **Suggestions**

- Purpose

  To take feedback from users of the software

- User

  Anyone who accesses the software.

- Input

  The feedback of users.

- Result

  The feedback entered by the users is stored.

- Exception

  None.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The software should be able to register a minimum of 600 students and 60 faculty members. The system must register each student for 30 credits maximum.

5.2 Security Requirements

The profiles can be accessed (students or teachers) only by entering a valid password.

5.3 Software Quality Attribute

- User friendly Interface
  The software offers menus for the ease of the user.

6. Other Requirements

The courses available must be approved by the university.

Appendix A: Glossary

Term	Definition
Database	It is a collection of information that is organized so that it can be easily accessed, managed and updated.
Gcc	It stands for GNU Compiler Collection which is used to compile C and C++ programs
Interface	It is a device or a program enabling a user to communicate with a computer.
Operating System	It is system software that manages computer hardware and software resources and provides common services for computer programs.
TurboC	It is an Integrated Development Environment and compiler for C programming language from Borland.

Appendix B: To Be Determined List

- Departments requiring a registration system have to be determined.
- Courses for respective branches and semesters have to be determined.
- Faculty members for each department have to be determined.
- Valid enrolment numbers have to be determined.

*****End of the SRS*****