

Software Requirements Specification for

STUDENT MANAGEMENT SYSTEM

Version 1.0 approved

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Introduction

(by PES2UG20CS458)

Purpose

1.1

The student management system is used to maintain and manage the records of students such as their identification no, date of birth, address, parent information, their marks, their attendance record, assignments activity etc. This information can easily be accessed by the user (faculty member, student or admin) whenever necessary according to their requirement. It is also used to update the information of the students from time to time. It helps save time and maximizes the effectiveness of the resources for both students and the admins.

Intended Audience

1.2

This document aims at describing all the requirements of this particular software effectively. It is intended to be read and understood by the application developers, the testing team, the project managers for effective implementation of the necessary features.

The rest of the SRS document consists of the product functions, the external user interface requirements, the priorities of the features being implemented, the operating environment used, the system features, etc. It also consists of the non-functional requirements of the software. It also consists of an use case diagram and a clear documentation of the features that are being implemented in the project.

It is of great help to all the stakeholders involved in the project. It can also be used as a reference to the developers in the future.

Product Scope

1.3

The student management system primarily focuses on maintaining the records of the students such as their id,date of birth,the courses,marks etc. from the time of their admission.

It primarily has three users:

1.The student:The students can login using the registered username and password through the login module.They can also check their marks,attendance record and the assignments that have been assigned.

2.The admin:The admin can update and record the details of the students whenever necessary.

He can create the accounts for the students and staff members using the registration option in the login module.

3.The faculty member:The faculty members can login using their registered login ids.they can update the attendance records of the students,and also assign assignments through the assignment portal.

The faculty members will also be able to update the grades of the students to the portal.

References

1.4

1)<https://www.google.com/>

2)<https://www.pesuacademy.com/>

3)Software Engineering: Principles and Practice by Hans van Vliet

Overall Description (PES2UG20CS455)

2.1

Product Perspective

The project is a new self-contained product and not a follow-on member of a product family.

The various system tools that have been used in developing both the front end, back end and other tools of the project are given below:

FRONT END - HTML, CSS, JAVA SCRIPTS are utilized to implement the front end.

- HTML (HyperText Mark-up Language) is a syntax used to format a text document on the web.
- CSS (Cascading Style Sheets) is a style sheet language used for describing the look and formatting of a document written in a mark-up language
- JS (Java Script) is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed.

BACK END - The back end is implemented using MYSQL which is used to design the Databases

- MYSQL (Structured Query) is the world's second mostly used open source relational database management system (RDBMS)

2.2

Product Functions

The most important functionality of this Product is essentially to save the Student Information sequentially into a database server and Access it as and when required. This Administrative activity involves maintaining the student records (which include details like their Names, Identification Numbers, Address, Parent Information including Contact Numbers and Email Ids). The Administrators can access and modify the database as per the needs.

The other functionalities of this product are -

1. Students being able to Login and check their Marks of each Subject that they are taking for the current year, their Attendance Records of the current year and being able to submit their assignments and check assignment information about whether it has been submitted successfully.
2. Faculty being able to login and upload/modify the attendance details of all the students, assign any assignments to the students .

The entire Product has been designed in such a way that all the users will have the ease of access.

2.3

User Classes and Characteristics

The various user classes that will be using this product are:

- Users (students and faculty members) that can register themselves and login through the login portal and view the data that they are interested in making use of the required resources.
- Users (administrators) that can change/modify the details of the database.

2.4

Operating Environment

This software will be able to operate on hardware platforms that include Mobile phone, Laptops and Desktops.

The operating systems are Windows (version 10/11)

2.5

Design and Implementation Constraints

The software can not be accessed from any location of the user.

There are minimum memory requirements for accessing the MYSQL database.

Hardware Limitations - The minimum memory required to run this software is 4GB.

Language requirements - The users can view in English only.

Administrators are responsible for maintaining the database.

External Interface Requirement: (PES2UG20CS415)

3.1

User Interfaces

The student management system for the institution eases the admin problems by providing a user-friendly interface for students and managers. It does that by designing a simple and easy to interact interface through which users will not have any problem interacting and queries for the system.

To show the ease of interaction with system sees the use case diagram of the system:

- In the figure, it is clearly shown how the user is directly interacting with the registration process. He/she can further go to a home page which gives them various tabs to navigate.
- The admin will have access to the registration module where they register the students and faculty and provide a login id for their future use.
- Each tab will provide special functionality to the user. For students, the attendance tab will show their percentage of absence and presence for every course they have opted for. For admin, the enroll course tab will help them to add a new course in the institute.
- There is an interface made for the faculty where they can upload the assignments for the students. The student can view the assignments and can upload whenever necessary.
- There is an interface where the faculty upload the calculated grades of the student which also enables the students to view the grades.

3.2

Software Interfaces

The software required for the development of the project is:

- **Operating System:** Windows 10/11
- **Environment:** Visual Studio .NET 2002
- **Framework:** Version 1.0
- **Language:** Python
- **Backend:** SQL

3.3

Communications Interfaces:

Connections to the system will be through TCP/ IP gateways.

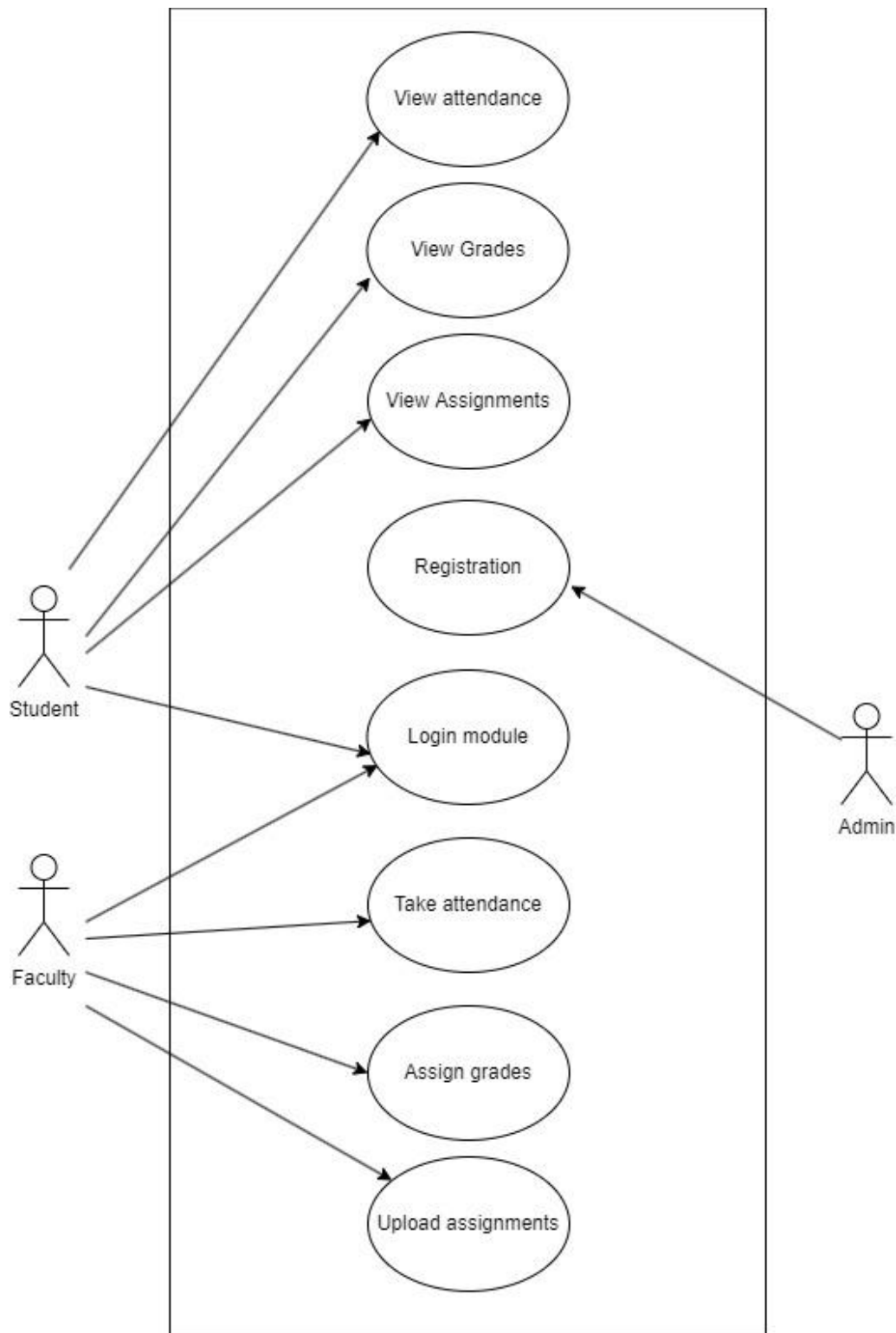
3.4

Hardware interface:

- Processor: Intel P-IV System
- Processor Speed: 250 MHz to 833 MHz

- Ram: 512 Mb Ram
- Hard Disk: 40 Gb

Analysis Model (PES2UG20CS419)



System Features (PES2UG20CS419)

The Student Management System has the following Users:

- 1) Student
- 2) Faculty
- 3) Administrative Staff

Student Features

5.1.1 Description and Priority

The student must be able to:

1. View his/her personal details on the system
2. View attendance for each course
3. View assignments given by faculty members

This is a medium priority feature.

5.1.2 Stimulus/Response Sequences

STIMULUS	RESPONSE
Student accesses the portal	Login page is displayed which requests user-id and password
Student logs in	User-id and Password is validated
Student clicks on “Personal Details” option	Software displays the personal information that has been filled by administrative staff at the time of registration
Student clicks on “View Attendance”	Software displays attendance of all the courses the student has taken
Student clicks on “Assignments” option	Software displays pending Assignments

5.1.3 Functional Requirements

1. Database must be created to hold student information
2. Database must be created to hold user-id and password
3. Separate account for students required

REQ-1: STUDB

REQ-2: UIDDB

REQ-3: STUACC

Faculty Features

5.1.1 Description and Priority

The faculty must be able to:

1. Take attendance for each course
2. Assign assignments

This is a medium priority feature.

5.1.2 Stimulus/Response Sequences

STIMULUS	RESPONSE
Faculty accesses the portal	Login page is displayed which requests user-id and password
Faculty logs in	User-id and Password is validated
Faculty clicks on "Assignments"	Software displays an option to upload assignments. Software also displays due date
Faculty clicks on "Take Attendance"	Software displays attendance of all the courses the student has taken

5.1.3 Functional Requirements

1. Database must be created to hold faculty information
2. Database must hold assignments
3. Ability to update attendance in student database

REQ-1: FADB

REQ-2: ASDB

REQ-3: STUPDATE

Administrative Staff Features

5.1.1 Description and Priority

The administrative staff must be able to:

1. Create accounts for students and faculty
2. Add student information upon registration

This is a high priority feature.

5.1.2 Stimulus/Response Sequences

STIMULUS	RESPONSE
Admin accesses the portal	Login page is displayed which requests user-id and password
Admin logs in	User-id and Password is validated
Admin clicks on "Create Faculty Account"	Software displays an option to create a faculty account and assign faculty to a particular course
Admin clicks on "Create Student Account"	Software displays an option to create a student account and fill personal details.

Other Nonfunctional Requirements (PES2UG20CS415)

6.1

Performance Requirements

The system must be capable of supporting

- 1) 20 faculty accessing the software at the same time
- 2) 100 students accessing the software at the same time

6.2

Safety Requirements

Maintainability and reliability of the system is ensured very thoroughly. All the records kept in the database have backups and the system can restore records in case of failure.

6.3

Security Requirements

The security of the system is maintained by providing a login interface to the user. Only those who have access can enter the system. If a user forgets the password it will be restored with high security and with the consent of the user.

