SOFTWARE REQIREMENT SPECIFICATION

FOR

EXAM CELL

Version 1.0 approved

Prepared by

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Revision History

Name	Date	Reason For Changes	Version

1. INTRODUCTION:

We are planning to create a web app which would be helping the examination cell of our college and would make their work load lesser.

1.1 Purpose

We have written this document to provide a detailed report about the examination cell system. It describes the functional and non-functional requirements of our exam cell. Moreover, the software and hardware interface and the target audience has also been explained in this SRS. It is intended for our customers.

1.2 Document Convention

We have used Calibri(Body) and font size 14 in our SRS document. The important things have been underlined and the sub-heading size has been kept 18 and heading as 20.

1.3 Intended Audience and Reading Suggestions

This document can be read by anyone but our intended audiences are exam cell, students and faculty of our university. The document should be read step wise understanding each step as without it reading ahead will not make much sense. Thus we recommend a systematic approach to read this document to our readers.

1.4 Product Scope

The basic aim of our web app is to make the work of our exam cell easier by generating an automatic exam schedule, seating allotment, invigilation schedule and moreover the other purpose is to send emails to the students, faculty, staff their individual exam schedule, seating allotment, invigilation schedule respectively. The goal is basically to provide the exam cell with an easy, portable solution for preparing the charts and the students and faculty the ease to access their individual details. This software will facilitate the smooth functioning of the department, reduce the errors and increase the efficiency of the system.

1.4 References

- The reference used was the IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications.
- Krazytech SRS documents
- https://www.academia.edu/7760318/STUDENTS_ATTENDANCE_MANAGEMENT_SYSTEM_MINI_PROJECT_REPORT_MASTER_OF_COMPUTER_APPLICATIONS

2. Overall Description

2.1 Product Perspective

Our college at present depends on manually making of the examination chart, invigilation chart and the seating allotment which involves a lot of hard work and even chances of error. Our aim is to create a web app wherein all this can be done by the computer itself. The exam cell will just have to enter the basic details and in a click we will be able to see the results which took so much time earlier and they can mail the individual details to the students or faculty. The features expressed in this Software Requirements Specification document are intended to be fully implemented in version 1.0.

2.2 Product Functions

- Automatically generates the Examination schedule, Invigilation schedule, seating allotment and Attendance sheet.
- On the day before the exam it will mail the students their respective room numbers and the invigilators also where their duty is.
- Provides students with the details of only those subjects for which they have been enrolled.
- Faculty and staff who are on leave on a particular day will not be allotted for invigilation duty.
- Online exam will be held before pen-paper.

2.3 User classes and Characteristics

Our Web app has only one user and that is our Exam Cell. They are our primary users. Mostly all data we will access from existing database but the Admin should add the schedule date and time, class rooms, IT labs available for the purpose of Examination.

2.4 Operating Environment

We plan to use the following for our web app:

- Platforms such as windows, linux, ios.
- The software can open on all the web browsers which support CGI, Web app, JavaScript, HTML5, Asp.net and will have an easy interface.
- Link it to the nucleus to fetch details from their database.

Software components:

- IDE: Visual studio 2015 enterprise
- Cloud server: Microsoft Azure cloud
- Database: Microsoft Azure storage explorer.

2.5 Design and Implementation Constraints

- Time constrain: We only have 2 months for completing the whole project.
- No memory constrains.
- There can be a security constrain but we will overcome it using some hashing algorithm.

2.6 User Documentation

A user manual is provided to the exam cell in both the ways as a soft copy as well as a hard copy which includes the instructions of our app.

2.7 Assumptions and Dependencies

Assumptions:

1. We are taking an assumption that no teacher will be absent without informing prior to making the sheet.

2. Our app will directly fetch details of attendance from the Nucleus database of our University, so we assume that a student who has less than 75% attendance will be debarred and will not be allowed to write the Examination. But later permission may be granted from dean academics so our app will keep a place for every student in the examination room.

Dependencies:

1. Our web app is dependent on our University Nucleus.

2. Details correction depends on database correctness as well as on the shuffling algorithm correctness.

3. Shuffling algorithm

External Interface Requirements

3.1 User Interfaces

1. The admin should login using username and password.

2. He will be able to see all the features of our app like generating exam schedule, seating allotment, invigilation schedule, attendance chart , Each screen will have logout button on top except the login screen.

3. Accordingly our app will generates the exam schedule, seating allotment, invigilation schedule.

We plan to use the following for our software:

- **IDE: Visual studio 2015 enterprise.**
- **Back end software: Microsoft azure storage explorer.**
- **Cloud platform: Microsoft azure.**
- **Algorithm: Shuffling algorithm.**

3.2 Hardware Interfaces

Minimum requirements are:

- Processor required 2Ghz
- RAM – 2 GB minimum,
- rest TBD

3.3 Software Interfaces

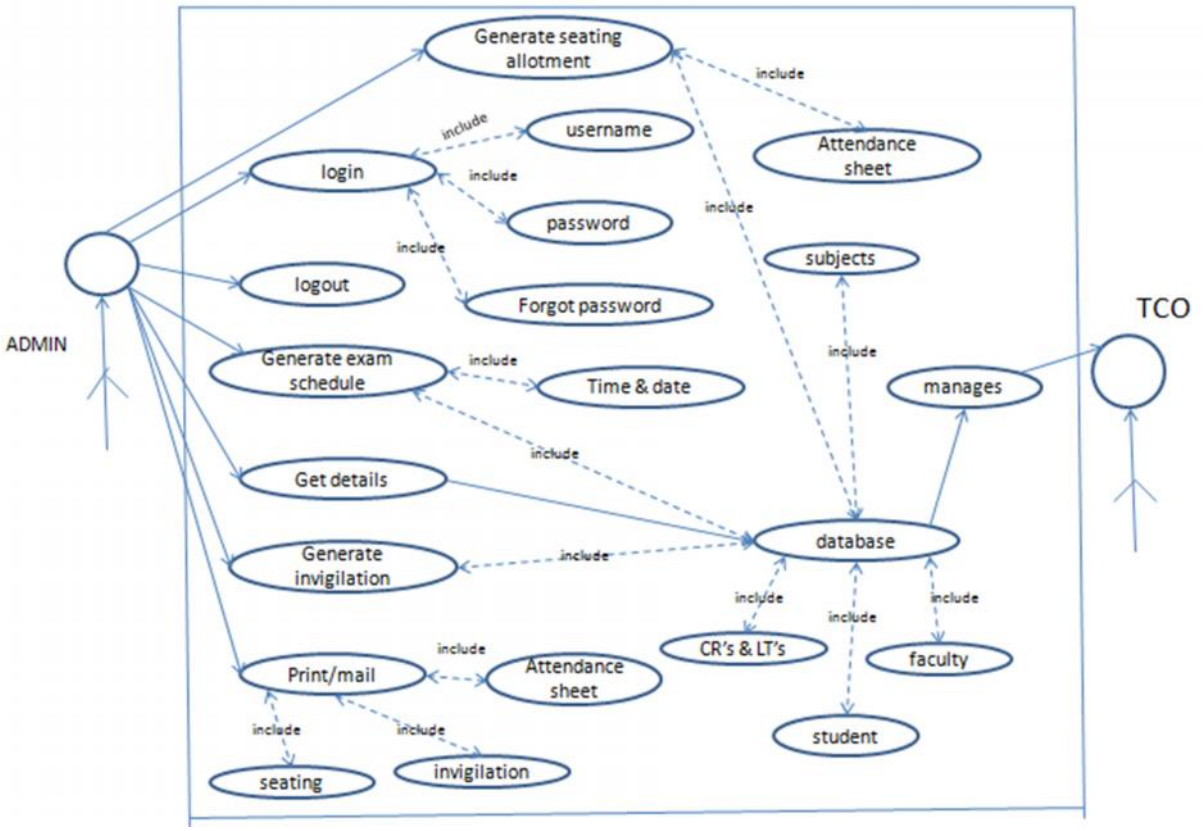
- We are creating software which would run best on windows 10 developer mode though it would run perfectly on others too.
- IDE(Integrated development environment) we are using Visual Studio 2015 enterprise as it is one of the most widely used and easy tool for creating web apps in asp.net.
- Our web app will be hosted in Microsoft azure cloud as it can handle million hits per second and it is easy to work in azure than compare to other cloud servers.

- We will be using a shuffling algorithm for obtaining the tasks we need to perform.
- Microsoft azure storage explorer as it is easy to create database and also compatible to connect with Microsoft azure cloud server.
- For designing and styling we plan to use HTML5 and CSS.
- We will use asp.net framework.

3.4 Communications Interfaces

- This web app will be supported by all types of browsers.
- It will communicate with the server to send e-mail to the particular person (faculty or students).
- We will be following HTTP standards for communication.
- The app will fetch the data from different tables of the database hosted in cloud server, then place them in a single table and at last they are displayed in the output page by a random order which is done by shuffling algorithm.
- The app include electronic forms for student details such as Enrollment no, Name, Section, Batch, Department, Subjects.
- It also include electronic forms for faculties detail such as Name, Subject handling.
- Password encryption will be done.

4. System Features



The table can be made as follows:

Id	Requirement
U1	Login
U2	User Name
U3	Password
U4	Forgot Password
U5	Generate Exam Schedule
U6	Time and date
U7	Generate Seating Allotment
U8	Attendance Sheet
U9	Generate invigilation duty
U10	Get details
U11	Logout
U12	Database
U13	Cr's Lt's and labs

U14	Students
U15	Faculty
U16	Print/Mail
U17	Seating
U18	Invigilation
U19	Attendance
U20	Manages
U21	Subject

4.1 **Generating an Exam schedule:**

4.1.1 Description and Priority

- Our web app will automatically generates the exam schedule for all the branches in the college(mtech, btech and mba) .
- High priority, as its one of the basic feature.

4.1.2 Stimulus/Response Sequences:

Stimulus: Admin will login using his her Username and password.

Response: Our web app will display a page where various features of our app are displayed.

Stimulus: Admin will select Exam-schedule

Response: Our web app will ask admin to enter the date and time.

Stimulus: shuffling algorithm will be performed.

Response: Exam schedule will be generated.

4.1.3 Functional Requirements

- We will see a page wherein we have to enter time and date as we want of the exams and then when create button is pressed the algorithm ie shuffling algorithm is used and a result showing various subjects at various time schedules is produced.
- TBD further.

System Feature 2

2. Generating seating allotment:

4.2.1 Description and priority

- Our web app will automatically generates the seating allotment .High priority.

4.2.2 Stimulus/Response Sequences:

Stimulus: Admin will login using his or her Username and password.

Response: Our web app will display a page where various features of our app are displayed.

Stimulus: Admin will click seating allotment option.

Response: Our web app will generate seating allotment. Can be printed or sent through mail to students.

Stimulus: Another option will be available called attendance sheet

Response: Attendance sheet according to the seating allotment will be prepared.

4.2.3 Functional Requirements

- We will see a page wherein we have click on create button for the creation of the seating allotment chart. After creation 3 more buttons will be available. One will be print, other one will be send and the last one will be generate attendance sheet.

  The generate attendance sheet feature will prepare a seating allotment according to the students allotted in a room or lab.

System Feature 3

3. Generating invigilation schedule:

4.2.1 Description and priority

Our web app will automatically generates the invigilation schedule. High priority.

4.2.2 Stimulus/Response Sequences:

Stimulus*: Admin will login using his* Username and password.

Response: Our web app will display a page where various features of our app are displayed.

Stimulus: Admin will click invigilation schedule option.

Response: invigilation schedule generated. Can be printed or mailed.

4.2.3 Functional Requirements

- We will see a page wherein we have click on create button for the creation of the invigilation chart. After creation 2 more buttons will be available. One will be print and the other one will be send.

Req. Id	Requirement Name	Description
U1	Login	It is used to login by the admin.
U2	User Name	It is the user name of the admin.
U3	Password	It is the password of the admin.
U4	Forgot Password	Takes us to the database.
U5	Generate Exam Schedule	It is used to generate the exam schedule automatically.
U6	Time and date	It is used for entering the date and time.
U7	Generate Seating Allotment	It is used to generate the seating allotment automatically.
U8	Attendance Sheet	It is used to generate the attendance sheet.
U9	Generate invigilation duty	It is used to generate the invigilation duty chart automatically.
U10	Get details	It is used to fetch details from database.
U11	Logout	Logging out from the web app.
U12	Database	It contains details of all the things required in our app.
U13	Cr's Lt's and labs	It contains details about all cr's lt's and labs.
U14	Students	It contains details of all the students and into which courses they are enrolled in.
U15	Faculty	It contains details of all the faculty members.
U16	Print/Mail	It is used to either print or mail the information.
U17	Seating	For printing and mailing the seating details
U18	Invigilation	For printing and mailing the invigilation details
U19	Attendance	For printing and mailing the attendance sheet details
U20	Manages	TCO manages the database of our app.
U21	Subject	It contains details of all the subjects taught.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

1. We will take a lot of care on UI such that we can optimize our web application to certain extent.

2. The work will be made hassle free and much less time will be taken. Moreover it will be more efficient.

3. The database shall take less than 8 seconds to process a query.

5.2 Safety Requirements

As our web app is totally dependent on the NIIT ERP so, if the data loss occurs our web app will generate errors and cannot perform efficiently, There may be a crash if some wrong data is entered by admin and we may lose all the data. To avoid this, we use Microsoft azure which provides a backup option.

5.3 Safety Requirements

Only the admin will be able to edit the database of the software. In order to enter into the software user has to enter his credentials which will be unique and it will be only given to the admin user of the software. The data's that are given by the admin user will be encrypted by one way encryption method such as sha1 or md5 and type safe SQL parameter commands will be used so that the SQL injections will be prevented.

5.4 Software Quality Attributes

- Availability: The system will be made available to the admin of the exam cell department.
- Reliability: We will achieve the reliability of the system by manipulation of the database.
- Reusability: The system shall be able to be reused at all times whenever needed by the department.
- Robustness: If the computer stops functioning while creating the various charts then we can restart it or open the app somewhere else.
- Usability: The usability of the system shall be achieved by a user manual and other instructions provided will be self-explanatory.

5.5 Business Rules

The admin will perform the crucial role thus responsible for generating the various charts and then using them further. We will be providing a user friendly environment. The role of the web application is to automatically obtain the seating allotment of students and invigilation for faculty. This all can be obtained by single click from the admin user.

6. Other Requirements

Database requirement:

1. The system shall include 4 databases – The student, faculty/staff, exam subjects and the list of rooms.

Appendix A: Glossary

There are many terms used in our project which can be understood well by reading this.

1. IDE - Integrated development environment

2. OS – Operating system

3. System – The software that will be prepared has been termed as a system in our document.

4. IEEE - Institute of Electrical and Electronics Engineers

5. CGI – Common Gateway Interface

6. HTML – Hyper Text Markup Language

7. CSS – Cascading Style Sheets

Appendix B: Analysis Models

Appendix C: To Be Determined List

1. The format of the details available with the exam cell.
2. The functional requirements at various stages.