**Software Requirements Specification**

**For**

**Exam Seating Arrangement**

Version 1.0

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**INTRODUCTION**

The project on exam seating arrangement aims to develop a system that automates the process of assigning seats to students during examinations. The system is designed to eliminate manual errors and optimise the allocation of seats based on a set of predefined rules such as student's course, class, and seating capacity. The system utilises advanced algorithms to generate the seating arrangement and provides a user-friendly interface for the exam coordinators to manage the process efficiently. The project is intended to provide a solution to the challenges associated with exam seating arrangements and improve the overall experience for both students and exam administrators.

**1.1 ABSTRACT**

The exam seating arrangement system is a computerised program designed to organize and manage the seating arrangements of students during exams. This system eliminates the need for manual allocation of seats, which can be time-consuming and error-prone. The system is designed to ensure fairness, security, and integrity during the examination process.

The exam seating arrangement system allows for the easy and efficient allocation of seats based on various criteria, such as the number of students, the seating capacity of the examination hall. The system also allows for the random allocation of seats to prevent cheating and collusion among students.

The exam seating arrangement system is user-friendly and can be easily accessed by administrators, teachers, and students. It provides real-time updates and alerts to ensure that any changes to the seating arrangement are communicated effectively.

In summary, the exam seating arrangement system is an essential tool for ensuring fairness, security, and integrity during the examination process. It eliminates the need for manual allocation of seats and ensures that the process is efficient and error-free. The system is easy to use and provides real-time updates, making it an indispensable tool for educational institutions.

1.2 **Document purpose**

The purpose of the Software Requirement Specification is to provide a clear,documented model of the requirements for the seating arrangement system,that will provide top level use cases for web based services for administrating staffs as well as students.The use case inventory is as follows:

1.Student Login

2.Administrator Login

1.3 **Intended Audience**

The intended audience for a seating arrangement system for examinations can include a variety of stakeholders involved in the examination process. Some of the primary audiences for this type of system may include:

Examination organizers: These are the individuals or organizations responsible for organizing and conducting the examination. They may use the seating arrangement system to manage the allocation of seats to candidates based on factors such as availability, security, and accessibility.

Examination administrators: These are the individuals responsible for overseeing the examination on the day of the event. They may use the seating arrangement system to quickly and easily locate candidates and ensure that they are seated in the correct place.

Examination candidates: These are the individuals who will be taking the examination. They may use the seating arrangement system to find out where they need to sit and to get an idea of the layout of the examination venue.

1.4 **Product Scope for Exam Seating Arrangement System:**

The product scope of the Exam Seating Arrangement System includes the following features and functions:

Student Data Management: The system should be able to store and manage student data such as name, student ID, course name, course code, and email address.

Exam Configuration: The system should allow exam administrators to configure various settings for each exam, including exam name and code, date and time, duration, number of students, number of exam rooms, number of seats per room, and room capacity. The system should also provide rules for seating arrangements such as separating students from the same class.

Seating Assignment: The system should automatically assign seats to students based on the exam configuration and the rules for seating arrangements. The seating assignments should be randomized to prevent cheating.

Reporting: The system should be able to generate reports such as a list of registered students for each exam, seating arrangements for each exam room, and seating arrangements for each student.

User Roles: The Exam Seating Arrangement System should support two user roles - Exam Administrator and Invigilator. The Exam Administrator is responsible for configuring exams, managing student data, and generating reports, while the Invigilator is responsible for overseeing the exam and ensuring that seating arrangements are followed.

1.5 **Functional Requirements**

1. Seating Plan Creation: The system should provide the capability to create a seating plan based on the number of students and the available space in the exam room.
2. Randomization of Seating Plan: The system should be able to randomly assign seats to students based on predetermined criteria such as student ID number or last name.
3. Customization of Seating Plan: The system should allow the user to customise the seating plan according to their specific requirements.
4. Real-time Seating Plan Updates: The system should be able to make real-time updates to the seating plan as needed, such as when students are added or removed from the exam.
5. Seating Plan Communication: The system should provide a means for communicating the seating plan to students, such as email or through an online portal.
6. Reporting: The system should be able to generate reports about the seating plan, such as a list of all students and their assigned seats.
7. Integration with Student Management System: The system should be able to integrate with the student management system to access relevant information such as student ID numbers and names.
8. Monitoring: The system should be able to monitor students during the exam to ensure that they are following the seating plan and not engaging in any suspicious behaviour.
9. Accessibility: The system should be accessible to all users, including those with disabilities.
10. Security: The system should be secure and protected from unauthorised access to ensure the confidentiality and integrity of the seating plan and student information.

1.6 **Non Functional Requirements**

1. Performance: The system should be able to handle a large number of students and generate seating plans quickly and efficiently.
2. Availability: The system should be available at all times, especially during exam periods.
3. Reliability: The system should be reliable and able to recover from any failures quickly and with minimal disruption.
4. Usability: The system should be easy to use and navigate for all users, including administrators and students.
5. Accessibility: The system should be accessible to users with disabilities, and comply with relevant accessibility standards.
6. Security: The system should be secure and protect student information and the seating plan from unauthorised access or modification.
7. Scalability: The system should be scalable to accommodate increasing numbers of students and exam rooms.
8. Compatibility: The system should be compatible with different operating systems and browsers.
9. Maintainability: The system should be easy to maintain and update, with minimal downtime and disruption.
10. Legal Compliance: The system should comply with all relevant laws and regulations, such as data protection laws and accessibility regulations.

1.7 **Assumptions**

* Users have access to a mobile device with an internet connection.
* Users have basic skills and knowledge of how to use a app-based application.

1.8 **Functional Dependencies**

In the context of an exam seating arrangement, a functional dependency could be that the attribute "seat number" is uniquely determined by the attributes "exam date" and "student ID". In other words, for a given exam date and student ID, there can only be one corresponding seat number.

1.9 **Functional Non Dependencies**

In the context of an exam seating arrangement, non-functional dependencies could include factors such as the physical layout of the exam room, the accessibility of the seats, the availability of backup seating options, and the ability of the system to handle changes or updates to the seating arrangement in a timely and efficient manner.

1.10 **Product Overview**

Exam seating arrangement refers to the process of organising and assigning seats to students who are taking an exam. The main purpose of seating arrangement is to ensure fairness and prevent cheating during the examination.In a typical exam seating arrangement, students are assigned seats in a way that minimises the chances of copying or exchanging answers. The seating arrangement can be randomised or pre-determined, depending on the policies of the institution.

The process of exam seating arrangement involves several steps, including:

1. Creating a seating plan: This involves determining the number of students and the available space in the exam room. The seating plan should ensure that each student has a designated seat.
2. Assigning seats: The next step is to assign seats to students. The assignment can be done randomly or based on certain criteria, such as alphabetical order or student ID number.
3. Communicating the seating plan: Once the seating plan is finalized, it should be communicated to students well in advance of the exam. This can be done through email, notice boards or other communication channels.
4. Monitoring the exam: During the exam, invigilators should monitor the students to ensure that they are following the seating plan and not engaging in any suspicious behavior.

Overall, exam seating arrangement is an important aspect of maintaining academic integrity during exams. It helps to prevent cheating and ensures a fair and level playing field for all students.