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| Software Requirements Specifications | IITI Scheduler | |
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# Document Approval

The following Software Requirements Specification has been accepted and approved by the following:

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| Signature | Name | Date |
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Software Requirements Specifications

## 1. Introduction:

## 1.1. Purpose

The purpose of this document is to present a detailed description of a Classroom and Exam timetable creation system. It will explain the purpose and features of the system, the interface 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 clients and the developers of the system and will be proposed to the Academic Department, IITI for its approval.

## 1.2. Scope of Project

This software system will be a Classroom and Exam timetable creation system for the Academic Department of IIT Indore. This system will be designed to maximize the user’s productivity by providing tools to assist in automating the classroom and exam timetable generation, which would otherwise have to be performed manually. By maximizing the user’s work efficiency and production the system will meet the user’s needs while remaining easy to understand and use.

This system aims to aid the user to ensure a conflict free planning and generation of the classroom and exam timetables. Through simple interface elements the system manages to keep the user informed and have the flexibility to allow the users to make further changes at any point of time.

## 1.3. Technologies to be used

* HTML (Hyper Text Markup Language): Used to create static web pages.

• JSP (Java Server Pages): It is used to create dynamic web content.

• J2EE (Java 2 Enterprise Edition): It is a programming platform, belonging to the Java platform, which is used for developing and running distributed java applications.

* MySQL: It is a database management system that provides a flexible and efficient database platform to raise a strong "on demand" business applications.

• HTTP (Hyper Text Transfer Protocol): It is a transaction oriented client/ server protocol between a web browser and a web server.

* XML (Extensible Markup Language): It is a markup language that was designed to transport and store data.
* Ajax (Asynchronous Java Script and XML): It is a technique used in java script to create dynamic web pages.

**2. General Description:**

## 2.1. Product Perspective

The product is supposed to be an open source web based system implementing client server model. It provides simple mechanism for users to generate timetables efficiently and minimum conflicts.

## 2.2. Product Functions

This product is being developed for making the process of classroom and exam timetable automatic. This process will be such that it minimises the number of conflicts caused. The product’s interface will be user-friendly.

## 2.3. User Characteristics

All users can be assumed to have the following characteristics:

• Ability to read and understand English.

• Familiarity with the operation of the basic Graphical User Interface (GUI) components of the Windows NT operating system.

• Rudimentary understanding of modelling techniques.

## 2.4. Assumptions and Dependencies

The developers will be provided with the data in SQL format. Correct and complete analytics will be provided.

**3. Requirement Specifications:**

## 3.1. External Interface Requirements

The system will implement a simple grid-like interface depicting the various lectures with their respective days and timings in real-time. The user will have the option to select viable lectures in a particular time slot through means such as drop-down boxes or text boxes. A notification area will be present to declare the conflicts that arise in a particular configuration of a time-table, and a button cluster will also be available for performing the various available tasks. The interface will be lean, thus ensuring faster and efficient functioning of the system, and shorter loading times.

## 3.2. Functional Requirements

The following are the main features that need to be included in our system:

* Cross platform support: Offers operating support for most of the known and commercial operating systems.
* Authentication and Authorization: User needs to be authorized to use the resource to prevent unwanted access.
* Implementing the constraints listed below:
  + Prevention of concurrent lectures for students and faculties.
  + Ensuring atleast an hour break between two lectures of a faculty.
  + Ensuring minimum gaps between lectures for students
  + Checking classroom availability for every lecture.
  + Strictly following the LTP (Lecture-Tutorial-Practical) contact hours pattern.
  + Implementation of slotted structure.
  + Avoiding concurrent exams for a particular student.
  + Avoiding two exams for a student on a same day.
  + Facilitating user to decide the start time for every batch.

(NOTE: Above constraints may not be completely satisfied)

* Small Size: The system will be as lean as possible to ensure short waiting times and faster functioning.
* Gentle Learning Curve: Easy to use, even for the first-time users.
* Bug-free: Ensuring minimal crashes or bugs through rigorous testing of the system.