Software Requirements Specification

Online Course Reservation System

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Table of Contents

Software Requirements Specification

1. Introduction

Registering for a course, making the payments, and completing a course at any online course registration system is currently a tedious process to manage. Students in general face several discrepancies while using an online course service. We are aiming to make the entire experience as user friendly and efficient as possible.

This project focuses on providing a personalized experience for the users in order to aid them in improving their profiles in whatever field required. This makes them stay in their particular career path and expand their knowledge in a much deeper fashion so as to build their minds in a proficient way and provide some better expertise. The purpose of this document is to analyze and elaborate on the high-level needs and features of the Online course reservation system. It focuses on the capabilities and facilities provided by a university.

1.1 Purpose

Online Course Reservation System is used to choose the course through online by the students. They are provided with a catalog with which they can choose the course. The catalog contains the detailed description about each course and the availability of the course which helps the students to decide on their own. The system is managed by administrator and administrator can maintain and view all the students who have registered to any course. If this entire process of 'Issue of course' is done in a manual manner, then it would take several months for the course to reach the applicant. Since the number of applicants for online courses increasing every year, an Automated System becomes essential to meet the demand.

A typical previous generation system has a complex search catalogue, providing promotional and irrelevant content which meets neither their difficulty level nor their personal interest and often giving suggestion for the users which doesn't match their career preferences. With this system we can address all the above-mentioned problems by providing User-friendly priority-based search options according to what user wants to pursue, automatically recommends courses based on their educational status and already pursued courses for better guidance for their career and providing intelligent remainders and plans to keep the students on track of their process. This system uses several programming and database techniques to elucidate the work involved in this process.

1.2 Scope

The Software Requirements Specification captures all the requirements in a single document. The Online course reservation system that is to be developed provide course offered by several leading universities and their tutors which enable users to experience exactly what they would get from an actual university.

- System provides login facilities to the user.
- The system provides the users with recorded lectures.
- Every unit has an assignment at the end to test where the user stands.
- Interactive discussion forums enabling the user to interact with the fellow classmates.
- Several package availabilities based on user requirements.
- Filters enabling personalized experience through custom course suggestions based on the personal data from the user.
- Reminder system for the user to stay in track.
- Offline download facility for recorded lectures.
- Notebook simulation system available for every user for each course.
- Weekly live sessions with the respective tutors.
- Streaks for consistent attendance in order to bring motivation to attend the course.

1.3 Definitions, Acronyms and Abbreviations

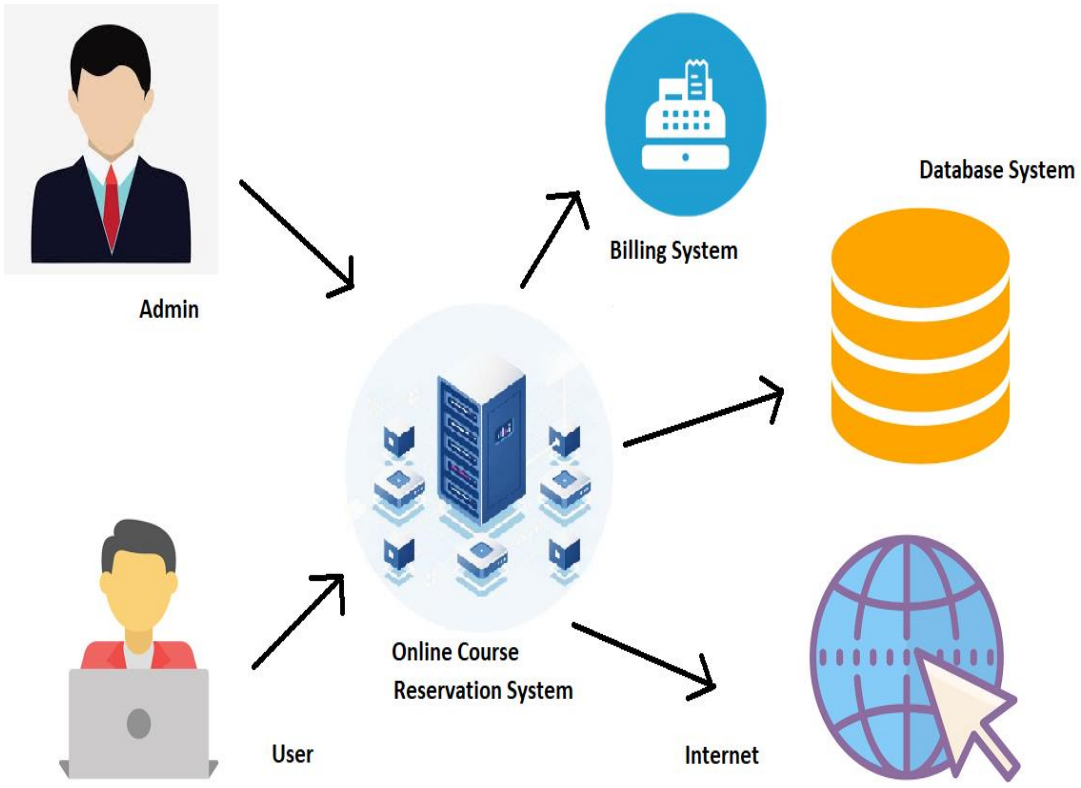
- **TCP** – Transfer Control Protocol

2. Overall Description

2.1 Product Perspective

This product is used by the Course Reservation Systems to improve the efficiency of the Course distribution and remote learning of the students. The system provides the catalog of courses and its description marked by its level of difficulty and perquisites. The admin can able to keep track of the number of courses enrolled by each student and also maintain the working of all components of the system. The user/student will be able to select and enroll to the courses of their preferences.

The Complete overview of the system is shown in the overview diagram below:
The product interacts with users and admin. Also, interacts with other system like Database, Internet and Billing system.



Overview of the proposed system

2.2 Product Functions

The main intention of this project is to provide a more user friendly and efficient online course reservation system to the users. There is a custom-made system that suggests courses for each user based on their academic history, the career path they want to pursue and their expertise in the fields they are interested in.

- The system provides login facilities to the user.
- The system provides every user with a personal customized profile.
- The initial step is to choose a plan based on how intensive the user wants their learning to be (Basic, Premium, VIP).
- A mini questionnaire to determine the user preferences and personal data to provide personalized course suggestions.

- Providing the list of courses from which the user can either purchase or bookmark the course for later reference.
- Cart facility to check the courses needed to be purchased.
- Several payment options- Net banking, debit cards/credit cards, UPI, Paytm etc.
- A dashboard for each user to check their progress in the courses enrolled.
- The courses are split up evenly into different units with recorded lectures and assignments at the end.
- Feedback/reports are taken in case of any complaints.

2.3 User Characteristics

Online course reservation system is handled by the admin and users. The administrators of the system to have more knowledge of the internals of the system and is able to rectify the small problems that may arise due to disk crashes, power failures and other catastrophes to maintain the system. The proper user interface, user's manual, online help and the guide to install and maintain the system must be sufficient to educate the users on how to use the system without any problems.

2.4 Constraints

- The information of all the users must be stored in a database that is accessible by the Online course reservation system.
- The online course reservation system is connected to the database and is running all 24 hours a day.
- The users access the Online course reservation System from any computer that has Internet browsing capabilities and an Internet connection.
- The billing system is connected to the Online course reservation System and the database used by the billing system must be compatible with the interface of the Online course reservation System.
- The users must have their correct usernames and passwords to enter into the Online course reservation System.
- On the completion of a course, an ID verification must be done in order to receive the certificate.

2.5 Assumptions and dependencies

- The users have sufficient knowledge of computers.
- The user's computer should have Internet connection and Internet server capabilities.

- The users know the English language, as the user interface will be provided in English
- The product can access the user database

3. System Features

3.1 Functional Requirements

- Login facilities are provided by the system.
- A separate dashboard provided to each user that determines the status of each course enrolled.
- Periodic reminder system that helps the user stay on track.
- Billing system to purchase courses or choose an appropriate plan.
- Access content from any kind of device/environment
- Discussion forums to discuss with link-minded people.
- Filter for personalized course suggestions.
- Strong recommendation based on the profile history of the user

4. Other Non-Functional Requirements

4.1 Usability

- The system shall allow the users to access the system from the Internet using HTML or it's derivative technologies. The system uses a web browser as an interface.
- Since all users are familiar with the general usage of browsers, no specific training is required.
- The system is user friendly and self-explanatory.
- The system works on all environments and devices.

4.2 Reliability

The system has to be very reliable due to the importance of data and the damages incorrect or incomplete data can do.

4.2.1 Availability

The system is available 100% for the user and is used 24 hours a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.

4.2.2 Mean Time Between Failures (MTBF)

The system will be developed in such a way that it may fail once in a year.

4.2.3 Mean Time to Repair (MTTR)

Even if the system fails, the system will be recovered back up within an week or less

4.2.4 Accuracy

The accuracy of the system is limited by the accuracy of the speed at which the admin and users use the system.

4.2.5 Maximum Bugs or Defect Rate

Not specified.

4.2.6 Access Reliability

TBD.

4.3 Performance

4.3.1 Response Time

The data shall be accessed and downloaded within seconds across any platform and environments. Since it’s a web-based application, the response of the information of the page will be proportional the user’s Internet band-width.

4.3.2 Administrator Response

The system shall take as less time as possible to provide service to the administrator or the user.

4.3.3 Throughput

The number of transactions is directly dependent on the number of users.

4.3.4 Capacity

The system is capable of handling 10,000 users at a time.

4.3.5 Resource Utilization

The resources are modified according the user requirements and also according to the courses requested by the users.

4.4 Supportability

The system designers shall take in to considerations the following supportability and technical limitations.

4.4.1 Internet Protocols

The system shall be complying with the TCP/IP protocol standards and shall be designed accordingly.

4.4.2 Billing System

The billing system shall be compatible with the data types and design constraints of the billing system.

4.4.3 Maintenance

The maintenance of the system shall be done as per the maintenance contract made with the users.

4.5 Design Constraints

4.5.1 Software Language Used

The languages that shall be used for developing the Online course reservation System are, Python, HTML, JavaScript, CSS.

4.5.2 Development Tools

Will make use of the available Python interpreter for working Python structures. Also, Will make use of the online references available for developing programs in CSS, HTML and JavaScript.

4.5.3 Class Libraries

Will make use of the existing Python libraries. Also, we need to develop some new libraries for the web-based application.

4.6. Online User Documentation and help system

The system is provided with an online help and customer support system feature which will take in all the user queries, reports and feedbacks. The user can be able to view FAQs to get their queries resolved based on the working of the system. The system contains a user manual page which describes the basic functioning of the system and how the users can interact with the system for efficient usage.
