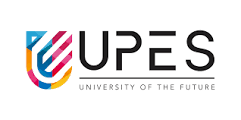
**Software engineering and Project management-Lab**

Submitted by: Jyotiraditya Singh

Enroll Number: R2142220530

Semester: 4

SAP ID: 500107065



**Experiment-04**

**Aim: Software Requirement Specification (SRS)**

SRS serves as a foundational document outlining the objectives and requirements of a software project. It is comprehensible to both technical and non-technical stakeholders, delineating the project's scope and functionalities.

**Functional vs Non-Functional Requirements**

Functional requirements define specific functionalities expected from the software, visible to the end-user. Non-functional requirements, on the other hand, address aspects such as performance, security, and reliability, often pertaining to the system's backend operations.

**Requirement Analysis for UPES Student Portal**

**1. Introduction**

1.1 Purpose

The UPES Student Portal aims to provide students with convenient access to academic and financial services.

1.2 Intended Audience

The intended audience includes students, faculty, administrative staff, and relevant stakeholders within the academic ecosystem.

1.3 Intended Use

The portal facilitates tasks such as accessing course materials, submitting assignments, checking grades, and communicating with instructors.

1.4 Product Scope

Encompassing academic information management and communication tools, the portal fosters collaboration across different departments.

1.5 Definitions and Acronyms

* **SRS:** Software Requirements Specification
* **API:** Application Programming Interface

**2. Overall Description**

2.1 User Needs

The portal caters to user needs such as accessing course resources, submitting assignments, managing grades, and updating personal information.

2.2 Assumptions and Dependencies

The portal assumes reliable internet connectivity and relies on relevant databases and hardware infrastructure for seamless operation.

**3. System Features and Requirements**

3.1 Functional Requirements

1. **User Authentication:**
   * Secure login mechanism with username and password.
2. **Course Management:**
   * Enrollment in courses and access to related materials.
3. **Assignment Submission:**
   * Facility to upload and submit assignments, with provision for feedback.
4. **Communication Tools:**
   * Messaging system for interaction between users and faculty.

3.2 External Interface Requirements

1. **User Interface:**
   * Intuitive design catering to multiple devices.
2. **Integration with University Systems:**
   * Seamless integration with university databases for data synchronization.

3.3 System Features

1. **Dashboard:**
   * Overview of enrolled courses, assignments, and announcements.
2. **Profile Management:**
   * Capability for users to update personal information.

3.4 Non-Functional Requirements

1. **Performance:**
   * Response time less than 3 seconds for standard operations.
   * Support for at least 500 simultaneous users.
2. **Security:**
   * Encryption of data during transmission and regular security audits.
3. **Scalability:**
   * Ability to scale to accommodate increasing user base.
4. **Reliability:**
   * Ensuring 99.9% uptime for critical functionalities.
5. **Usability:**
   * Accessibility compliance and user training provision.

**Functional and Non-Functional Requirements of UPES Portal**

**Functional Requirements -**

1. **User Authentication:**
   * Secure login for students and faculty.
2. **Profile Management:**
   * Users should be able to update their profiles.
3. **View associated database:**
   * Students can view their timetable, enrolled courses, and registration data; faculty can view their timetable and upcoming meetings.
4. **Grades and Transcripts:**
   * Students can view their grade cards.
5. **Announcements:**
   * Display of latest university announcements and news.
6. **Fees and Invoice:**
   * Students should be able to pay fees, download invoices, and submit ITR.
7. **Courses and Attendance:**
   * Students can view enrolled courses, attendance, and assignments.

**Non-Functional Requirements**

1. **Security:**
   * Data privacy and secure access.
2. **Usability:**
   * User-friendly interface and navigation.
3. **Reliability:**
   * Stable operation without downtime during critical periods.
4. **Performance:**
   * Fast loading times and responsiveness.
5. **Scalability:**
   * Ability to handle increasing user load without degradation.
6. **Compatibility:**
   * Responsive design for various devices and browsers.
7. **User-Support and Training:**
   * Provision of support channels and training materials.

**Use Case Diagram**

Explanation: The use-case diagram illustrates various user groups and possible interactions with the UPES student portal. Users can access different functionalities based on their roles, with certain use cases having extended functionalities. User authentication serves as a prerequisite for accessing any use case.