**SOFTWARE REQUIREMENTS SPECIFICATION**

**Group-3**

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| **CHANGE HISTORY** |
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| **DATE** | **SECTIONS CHANGED** | **CHANGE DESCRIPTION** |
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| 29-09-23 | All | Initial Creation of SRS |
| 1-10-23 | Problem Statement, Functional Requirement | Added more points with descriptions |
| 2-10-23 | Functional Requirement | Added more points with descriptions |
| 3-10-23 | Non-Functional Requirement | Added more points with descriptions, Edited previous points |
| 4-10-23 | Conclusion | Added points with description |
| 5-10-23 |  |  |

| **INTRODUCTION** |
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| Problem statement  **(Broad scope of the System)** | Develop a University Website to provide students, faculty, staff, and external users with an efficient, user-friendly platform for accessing a range of academic and administrative services.   * Information Hub:   + Centralized information repository for university details, programs, courses, faculty, and more. * User Management:   + User authentication with role-based access control. * User Profiles:   + Update personal info, including contact details, academic data, and hostel details. * Support and Help:   + Comprehensive help section and user manual. * Academic Central:   + Academic schedules, exam dates, and resources. * Certificates:   + Request various certificates, approved by the admin. * Mess Management:   + Monthly menus, meal times, and dietary info. * Faculty Info:   + Faculty profiles, education, expertise, and contact details. * Assignments and Resources:   + Download course assignments and materials. * Course Evaluation:   + Provide course feedback through multiple-choice questions. * Exam Schedule:   + Access upcoming exam schedules. * Feedback and Complaints:   + Lodge complaints and feedback by category. * Fee Receipts:   + Generate fee receipts for current and past semesters. * Results Access:   + Access, print, and download past semester results. * Course Registration:   + Register for courses during specified windows. |
| --- | --- |
| Purpose | * Present a detailed description of the College Management System. * Explain the purpose and features of the system. * Describe the interfaces of the system. * Define what the system will do. * Specify the constraints under which it must operate. * Explain how the system will react to external stimuli. * Intended for both the client and the developers of the system. * To be proposed to the Administrative head for approval. |
| Project Scope and Product Features | * College management system for an organization. * Designed to maximize administrative, academic, and overall productivity. * Provides tools to automate technical procedures and processes. * Aims to enhance users' work efficiency and production. * User-friendly portal for interaction, management, and access to information. |
| Intended Audience and Document Overview | * Intended Audience:   + Developers   + Testers   + Documentation writers   + Users * Document Structure:   + Definitions, Acronyms, and Abbreviations   + Contents   + Overview   + Detailed Description Sections |
| Product Perspective | * Standalone application. * Compatible with multiple systems within an internet network. * Requires a keyboard, mouse, and monitor for user interface. * Specifies minimum hardware requirements. |
| User Classes and Characteristics | * Target audience includes college administrators, students, faculty, and staff (technical/non-technical). * User Categories:   + Administrator: Super user focusing on administrative and academic issues.   + Student: User with limited access rights.   + Staff: User with more access rights. |
| Constraints | * Hardware Constraints:   + Utilizes i3 Gen4 Intel Core processor on Linux/Windows OS. * Document Format:   + Documents are in PDF format. * Feedback Forms:   + Replies may not be frequent.   + Petitioners are not anonymous. * Moderation:   + No moderator to filter fake complaints; superuser handles this manually. * Internet Connection:   + Essential for data fetching from the database. * Database Capacity:   + May queue incoming requests, affecting data retrieval time. * Mess Rebate:   + Lasts at least 3 days. * Course Registration:   + Open for a short time. * Document Format:   + All documents should be in a .zip file. * Course Evaluation:   + Users cannot revert actions after submitting the evaluation. * User Profile:   + Users cannot change personal or academic details without superuser permission. |
| Specific Requirements | * Hardware Platform:   + Intel Core i3 or above.   + RAM of 512 MB or above.   + Hard Disk 20 GB or above. * Software Platform:   + Browser Requirements:     - Mozilla Firefox 3.6 or higher.     - Google Chrome v117.0.5938.149/150 or higher. |

| **FUNCTIONAL REQUIREMENTS** |
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**User Class one - Student**

| ~Login into the Portal. | * The user can login into the system by providing its login id and password to the portal which are unique and provided by the college. |
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| ~ Change password | * Change the password after logging into the system.The user will be asked a security question if he/she forgets his/her password. In case, he/she is unable to do so, the user has to formally apply to the admin for the change of his/her password providing the necessary proof. |
| ~ View/change profile details. | * The user can view or change some of his/her personal details like email id, contact details   and address details. The profile will contain name, age,permanent address, parent’s name, their address, their contact details, branch, year, semester, room allotted, hostel name and number etc. |
| ~Help | * Can get help through the help option which gives information about the different features provided by the system. A copy of the user manual will also be provided in this section. |
| ~Timetables | * The user can view timetables for classes, mess and buses on the front page of the portal after logging into the system. |
| ~List of upcoming holidays | * The user can view the list on upcoming holidays on the front page of the portal after logging into the system. |
| ~News bulletin and Announcements. | * On the front page , the user can view different news and announcements from various Departments. |
| ~Academics | * This module on the dashboard contains all the information about the academics and administration. |
| ~Request for certificates | * The user can request for different types of certificates like No Objection Certificate, Character Certificate, Address Proof for Hostel etc. After filling the given format , the request will be sent to the administrative department for verification of request. After the verification, the user can get his/her certificate. |
| ~Mess | * This module on the dashboard contains all the information about the mess. |
| ~Faculty | * This module provides the information about the faculties. This includes name, education details, areas of interest and expertise, email id and contact details(optional). |
| ~Assignments and reading references | * The user can download the reading and writing assignments uploaded by the faculty for their course. |
| ~Course Evaluation | * At the end of the semester, a new page will be available for evaluation of a particular course for the students. The user can give evaluation for a particular course by just filling the multiple choice questions and submitting. |
| ~Exam Schedule | * The user can view the exam schedule. |
| ~Feedback/Complains | * In this form, one can lodge a complaint or give a feedback by selecting the domain: Academics, Administration, Hostel, Mess, Transportation.The head of each department will give a response accordingly. |
| ~Monthly menu and timings | * The user can view the monthly menu and timings of mess(breakfast,lunch,snacks and dinner). |
| ~Fee Receipt Generation | * Students can generate fee receipts by giving the bank details in the system authenticated by the administrative head for the current and the previous semesters. |
| ~Mess Rebate | * The user can request for his/her mess rebate by formally applying providing a valid reason and the period of his absence. After the verification of his request, the mess committee will either accept or deny the request and the user will be informed accordingly. The system will keep track of the days the rebate request was successfully accepted. |
| ~Course Registration | * Here, the user can register for the courses at the start of the semester. This page will be open for a very short time interval. The user has to provide all the necessary details and select the electives for the semester. |

**User Class two - Administrative head(Super user)**

| ~Login into the Portal. | * The user can login into the system by providing its login id and password to the portal which are unique and provided by the college. |
| --- | --- |
| ~Change password | * Change the password after logging into the system.The user can also change the password for other users if requested. If he/she forgets his/her password. |
| ~View/change profile details. | * The user can view or change some of his/her personal details like email id, contact details and address details. The profile will contain name, age,permanent address, parent’s name, their address, their contact details, branch, year, semester, room allotted, hostel name and no. etc. |
| ~Help | * Can get help through the help option which gives information about the different features provided by the system. A copy of the user manual will also be provided in this section. |
| ~Timetables | * The user can view timetables for classes, mess and buses on the front page of the portal after logging into the system.The user will also have the right and access to either manually change the timetable or automatically generate a timetable by providing the constraints like no. of rooms in the buildings, no. of students for all the branches and semesters, no. of students ,time and capacity constraints. |
| ~List of upcoming holidays | * The user can view the list of upcoming holidays on the front page of the portal after logging into the system.The user will also have the right and access to change/modify the list. |
| ~News bulletin and Announcements. | * On the front page , the user can view different news and announcements from various departments.The user will be able to access/broadcast important events. |
| ~Academics | * This module on the dashboard contains all the information about the academics and administration. |
| ~Course Registration | * Here, the user can register for the courses at the start of the semester. This page will be open for a very short time interval. The user has to provide all the necessary details and select the electives for the semester. |
| ~Request for certificates | * The user attends the request for certificates like No Objection Certificate, Character Certificate, Address Proof for Hostel etc.The administrative department verifies the request and accordingly accepts or denies the request and procedes subsequently. |
| ~Faculty | * This module provides the information about the faculties. This includes name, education details, areas of interest and expertise, email id and contact details(optional). |
| ~Assignments and reading references | * The user can download the reading and writing assignments uploaded by the faculty for their course. |
| ~Course Evaluation | * At the end of the semester, a new page will be available for evaluation of a particular course for the students. The user prepares the format for the course evaluation and decides the window when the users can give their feedback. He also evaluates all the evaluations. |
| ~Exam Schedule | * The user can view the exam schedule. The user has the right to update/ modify the exam schedule by either automatically generating the timetable by providing the required details or manually filling the blanks. |
| ~Feedback/Complains | * In this form, one can lodge a complaint or give a feedback by selecting the domain: Academics, Administration, Hostel, Mess, Transportation.The user deals with the complaints and feedback in the field of academics and administration. |
| ~Fee Receipt Generation | * The user can view details of the fee transaction details of all the students batchwise. |
| ~Monthly menu and timings | * The user can view the monthly menu and timings of mess(breakfast,lunch,snacks and dinner). |
| ~Result | * The user keeps track of the results of all the students. The user has the right to modify/update all the details related to results.He also decides the date when the results will be visible to the students. |
| ~Alert | * An alert sms will be given to the faculty members,staff and drivers beforehand consisting of the name of the faculty/ driver, phone no, vehicle no, location and timing. |
| ~Course Registration | * Here, the user will provide all the information, rules and regulations related to registration of the semester. The user can edit the form for the registration process. He/she keeps track of all the registrations which have been done. He also verifies, validates and authenticates the registration request using student and result records. He/she also decides what will be the electives for a particular semester and who are applicable to apply for a course. |

**User Class three - Faculty**

| ~Login | * The user can login into the system by providing its login id and password to the portal which are unique and provided by the college. |
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| ~Change password | * Change the password after logging into the system.The user will be asked a security question if he/she forgets his/her password. In case, he/she is unable to do so, the user has to formally apply to the admin for the change of his/her password providing the necessary proof. |
| ~Help | * Can get help through the help option which gives information about the different features provided by the system. A copy of the user manual will also be provided in this section. |
| ~Timetables | * The user can view timetables for classes, mess and buses on the front page of the portal after logging into the system. |
| ~List of upcoming holidays | * The user can view the list on upcoming holidays on the front page of the portal after logging into the system. |
| ~:News bulletin and Announcements. | * On the front page , the user can view different news and announcements from various departments. |
| ~Academics | * This module on the dashboard contains all the information about the academics and administration. |
| ~Faculty | * This module provides the information about the faculties. This includes name, education details, areas of interest and expertise, email id and contact details(optional). |
| ~Assignments and reading references | * The user can upload the assignments to the portal according to the year, batch and course. |
| ~Exam Schedule | * The user can view the exam schedule. |
| ~Feedback/Complains | * In this form, one can lodge a complaint or give a feedback by selecting the domain: Academics, Administration, Hostel, Mess, Transportation.The head of each department will give a response accordingly. |
| ~Alert | * An alert sms will be given to the faculty members,staff and drivers beforehand consisting of the name of the faculty/ driver, phone no, vehicle no, location and timing. |

**User Class four - HEC head**

~Login into the Portal.

The user can login into the system by providing its login id and password to the portal

which are unique and provided by the college.

~Change password

Change the password after logging into the system.The user will be asked a security

question if he/she forgets his/her password. In case, he/she is unable to do so, the user has to

formally apply to the admin for the change of his/her password providing the necessary proof.

~View/change profile details.

The user can view or change some of his/her personal details like email id, contact details

and address details. The profile will contain name, age,permanent address, parent’s name, their

address, their contact details, branch, year, semester, room allotted, hostel name and no. etc.

~Help

Can get help through the help option which gives information about the different features provided by the system. A copy of the user manual will also be provided in this section.

~Timetables

The user can view timetable for classes, mess and buses on the front page of the portal

after logging into the system.

~List of upcoming holidays

The user can view the list on upcoming holidays on the front page of the portal after

logging into the system.

~News bulletin and Announcements.

On the front page, the user can view different news and announcements from various de

apartments.The user also has the right to make necessary announcements related to the hostel.

~Faculty

This module provides the information about the faculties. This includes name, education

details, areas of interest and expertise, email id and contact details(optional).

~Feedback/Complains

In this form, one can lodge a complaint or give a feedback by selecting the domain:

Academics, Administration, Hostel, Mess, Transportation.The user will deal with the complains

and feedback information related to the hostel.

~Mess

This module on the dashboard contains all the information about the mess.

~Monthly menu and timings

The user can view the monthly menu and timings of mess(breakfast,lunch,snacks and

dinner).

~Room wise resources distribution

Information about the room wise resource will be recorded and updated by the HEC for

the maintenance of the hostel and the college. These include quantity, price, date of purchase,

warranty period, condition, brand.The items contains fans, chairs, table , tubelight, switchboard

, CFL , bulb.

~Room wise student distribution

It includes detailed information about the students that are residing in the hostel.

It contains their name, batch, year, contact details, email no. And all these information is kept

room and hostel wise.

**User Class Mess committee head- Student**

~Login into the Portal.

The user can login into the system by providing its login id and password to the portal

which are unique and provided by the college.

~Change password

Change the password after logging into the system.The user will be asked a security

question if he/she forgets his/her password. In case, he/she is unable to do so, the user has to

formally apply to the admin for the change of his/her password providing the necessary proof.

~View/change profile details.

The user can view or change some of his/her personal details like email id, contact details

and address details. The profile will contain name, age,permanent address, parent’s name, their

address, their contact details, branch, year, semester, room allotted, hostel name and no. etc.

~Help

Can get help through the help option which gives information about the different features provided by the system. A copy of the user manual will also be provided in this section.

~Timetables

The user can view timetable for classes, mess and buses on the front page of the portal

after logging into the system. The user has the right to change the timings for the mess.

~List of upcoming holidays

The user can view the list on upcoming holidays on the front page of the portal after

logging into the system.

~News bulletin and Announcements.

On the front page , the user can view different news and announcements from various

departments.The user has the right to announce any mess related news on the news bulletin.

~Academics

This module on dashboard contains all the information about the academics and admin

istration.

~Mess

This module on the dashboard contains all the information about the mess.

~Exam Schedule

The user can view the exam schedule.

~Feedback/Complains

In this form, one can lodge a complaint or give a feedback by selecting the domain: Academics, Administration, Hostel, Mess, Transportation.The user have to deal with the complains

and the feedback of mess related issues.

~Monthly menu and timings

The user can modify/update the monthly menu and timings of mess(breakfast,lunch,snacks

and dinner).

| **NON-FUNCTIONAL REQUIREMENTS** |
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| Performance Requirements | * Response Time:   + All server queries involving small data should have minimal response times. * Screen Transition:   + Changing screens should occur rapidly with minimal computation. * Server Updates:   + Updates to the server should complete within a few seconds. * Steady Signal:   + Phone connectivity should be consistent for uninterrupted service. |
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| Reliability | * Data Integrity:   + The system must ensure data integrity even in the event of computer crashes or misuse. |
| Availability | * The CMS Portal should be accessible 24/7 throughout the year, except during routine maintenance activities. |
| Security Requirements | * User Authentication   + The system shall require valid user authentication for access, consisting of a unique username and a securely stored password.   + Passwords shall be securely stored using encryption techniques, and the system shall enforce password policies, including minimum length and complexity requirements.   + Account lockout mechanisms shall be implemented after a specified number of consecutive failed login attempts.   + Multi-factor authentication (MFA) shall be available and encouraged, especially for administrative accounts. * Access Control   + The system shall implement Role-Based Access Control (RBAC), defining distinct roles for users and administrators, each with specific permissions and access rights.   + Administrators shall possess the highest level of access and shall be able to configure system settings, user management, and data management.   + Users shall have access only to features and data relevant to their designated roles (e.g., students, faculty, staff). * Data Encryption   + Sensitive data, including login credentials and personal information, shall be encrypted during transmission using secure protocols (e.g., HTTPS).   + Data at rest, stored on servers or databases, shall also be encrypted to safeguard against unauthorized access. * Session Management   + The system shall incorporate session management mechanisms to automatically log users out after a predefined period of inactivity.   + Secure, randomly generated session tokens shall be employed for each user session to mitigate session fixation attacks. * Audit Trails and Logging   + Detailed logs shall be maintained for user activities, encompassing login attempts, access to sensitive data, and alterations to system configurations.   + Routine log reviews and monitoring shall be conducted to identify and investigate suspicious or unauthorized activities. * Data Backup and Recovery   + Regular data backup procedures shall be implemented to ensure data recovery in the event of system failures or data corruption.   + Backup data shall be securely stored and encrypted to prevent unauthorized access. |

| **CONCLUSION** |
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| Enhance User Experience | * Provide a seamless and intuitive user experience. * Facilitate easy access to information, resources, and services. |
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| Accessibility and Inclusivity | * Ensure the website's accessibility to all users, including those with disabilities. * Comply with web accessibility standards for inclusivity. |
| Scalability and Performance | * Design the website to accommodate a growing user base. * Ensure consistent performance, even during peak traffic times. |
| Security and Data Protection | * Implement robust security measures to safeguard sensitive data. * Ensure the confidentiality and integrity of user information. |
| Collaboration and Communication | * Facilitate effective communication and collaboration among stakeholders. * Introduce features like forums, messaging, and notifications. |
| Mobile Responsiveness | * Make the website responsive across various devices and screen sizes. * Ensure accessibility on mobile phones and tablets. |
| Integration | * Seamless integration with existing university systems and external services. * Streamline processes and enhance user convenience. |
| Compliance | * Ensure compliance with relevant data protection regulations, such as GDPR. * Adhere to industry best practices for data security and privacy. |

This document will serve as a reference point for the development team, ensuring alignment with identified requirements and objectives. Regular reviews and updates may be necessary to accommodate emerging requirements, but this document establishes a solid foundation for the successful implementation of the university website.