

On College Automation System



Centurion
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Group No: 11
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CHAPTER 1

INTRODUCTION

1.1 Introduction

(1) **Purpose:**

The College Automation System is designed to streamline and simplify the management of college operations. It aims to automate key processes such as student admissions, course registration, attendance tracking, examination management, and fee collection. By reducing manual work, the system enhances efficiency, ensures data accuracy, and improves communication between students, faculty, and administration. Ultimately, this system will help in delivering a more organized and user-friendly experience for all stakeholders involved..

(2) **Scope of Project:**

- The system will allow students, faculty, and administrators to create profiles and manage their information within the college database
- Students will be able to register for courses, track their attendance, and access their academic records online
- Faculty members will be able to manage course content, record attendance, and input grades for their students
- The system will enable the administration to manage admissions, track fee payments, and generate reports for various academic and administrative functions.
- The system will incorporate a feedback mechanism where students can rate courses and provide feedback to faculty and the administration
- The system could be adapted for use in different educational institutions by customizing it to meet specific cultural and regulatory requirements.

(3) **Overview:**

- The working way of the Website is easy to Which will user friendly and the everyone can use in the very comfort way

Software Requirements Specifications

- Faculty will be tracking the students report as well as able to see the all Details about the students apart from that Attendance will be tracked
- The Students Module manages student profiles, including personal information, course enrollments, attendance records, and academic performance. It allows students to register for courses, check their attendance, view grades, and interact with faculty members..
- The Registration Module automates the process of student registration for courses. It ensures that students are enrolled in the correct courses based on their academic requirements and allows for the smooth handling of course registrations, including prerequisites and seat availability..
- **Login Module:** The Login Module provides secure access to the system for all users, including students, faculty, and administrators. It ensures that users can only access the information and functionalities relevant to their roles within the college.

(4) References // end

- <https://www.urbancompany.com/patna>
- <https://www.justdial.com/>
- <https://talentbattle.in/login>
- <https://internshala.com/>
- https://accounts.ccbp.in/login?client_id=otg&call_back_url=https://learning.ccbp.in/&mode=otp&WINDOW_MODE=IN_APP

Software Requirements Specifications

(5) Key features

- **User-Friendly Interface:** The system features an intuitive and easy-to-navigate interface for students, faculty, and administrators, ensuring smooth interaction with all modules.
- **Centralized Database Management:** All student, faculty, course, and branch data are stored in a centralized database, allowing for efficient data retrieval, updating, and management.
- **Automated Registration Process:** The Registration Module simplifies course registration by automating the enrollment process, managing prerequisites, and tracking seat availability in real-time.
- **Real-Time Attendance Tracking:** The system allows for real-time attendance tracking for both students and faculty, with instant access to attendance records and automated notifications for low attendance.
- **Comprehensive Course Management:** The Courses Module provides detailed information about each course, including syllabi, schedules, and assignments, and allows faculty to manage course content and grading.
- **Branch-Specific Customization:** The Branches Module enables the college to manage different departments independently, offering customized options and reports for each branch.
- **Secure Login and Role-Based Access Control:** The Login Module ensures secure access to the system with role-based access control, allowing users to access only the information and functionalities relevant to their roles.
- **Performance Tracking and Reporting:** The system provides detailed reports on student performance, faculty activities, and overall college operations, helping in data-driven decision-making.
- **Communication Tools:** Integrated messaging and notification systems facilitate communication between students, faculty, and administration, ensuring timely updates and information sharing.
- **Scalable and Adaptable Architecture:** The system is designed to be scalable, allowing for easy expansion as the college grows. It can also be adapted to different educational institutions with minimal customization.

1.2 Challenges:

Developing the College Automation System presents several challenges, including integrating diverse modules into a seamless platform while ensuring data consistency across all functions. Ensuring robust security to protect sensitive student and faculty data is critical, along with managing user authentication and access control. Another challenge is designing a user-friendly interface that meets the needs of various users—students, faculty, and administrators—without overwhelming them. Additionally, scalability must be considered to accommodate future growth, and the system must be adaptable to different institutions' unique requirements. Lastly, thorough testing is

Software Requirements Specifications

1.3. Glossary:

TERMS	DEFINITION
Admin	Admin can be given the access of users. In case of multiple admin, This term refers to the main admin. With whom all communication is made. Like, He can do many things like giving access, changing services details, add recent services etc.
Database	Collection of the data monitored by this system.
Editor	The person who receives the students information and verify that and sends that main information to main admin.
Viewer	Anyone visit the website to read (or) saw the services.
Users	They are signup (or) login in our website they can get the services. Without login they can't book our services. (Administration,Students,Faculty)
Students	The Students are the main user of the website who will use for see their information as well as the course detailed which will be assigned by the faculty
Faculty	Here faculty will be in the role of the admin where he will manage students details

Software Requirements Specifications

Scope of Work	The websites will be used in the college to automate the Functionalities
Login Module	Login module are different for the different user such as for the faculty that will be used the Admin how can update the data related to the Students.
Registration module	Registration will be defined for the students while taking the admission in the collage

CHAPTER-2

HW/SW REQUIREMENTS AND TECHNOLOGY

2.1 Software and Hardware specifications

(1) Software requirements

- Eclipse IDE (Editor)
- XAMPP Server
- Spring Tool Suite (STS) (Application Build tool)
- Visual Studio Code (Editor)
- Tomcat server (Server) 10.1 & More

(2) Language Support Software

- JDK 1.8 & More

(3) Client-Side tool

- Angular.js

(4) Hardware requirements

- Operating system: windows 10 & 11
- 11th Gen Intel(R) Core (TM) i5-1155G7 @ 2.50GHz 2.50 GHz
- System type: 64-bit Operating System
- RAM: 8 Gb or more
- ROM: 256 SSD Or More

2.2 Technologies used

- (1) Front-End: Angular, Css, Bootstrap
- (2) Back-End: Spring boot(framework)
- (3) Webservices: REST (RESTful API)
- (4) Database : MYSQL
- (5) Server: Tomcat 10.1
- (6) Dependencies: Spring-web, Spring-data JPA,MYSQL Driver, Spring Security.

CHAPTER-3

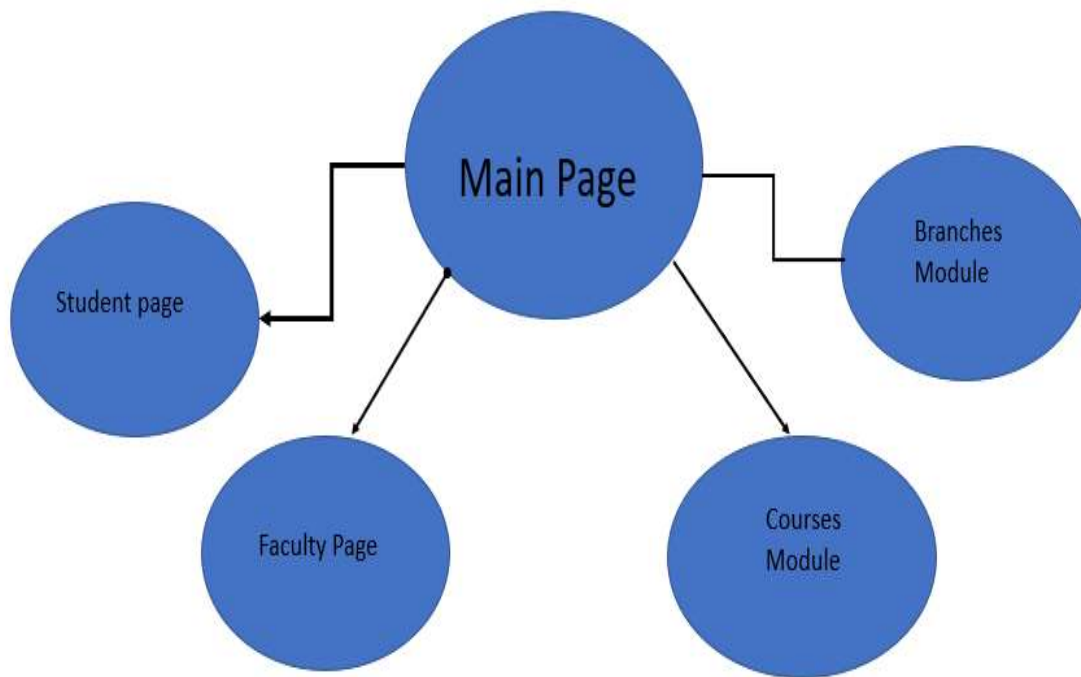
ABSTRACT & ADDITIONAL FEATURES

Abstract

The College Automation System is a comprehensive software solution designed to streamline the administrative and academic operations of a college. Focusing on six key modules—Faculties, Students, Registration, Courses, Branches, and Login—this system aims to enhance efficiency, accuracy, and communication within the institution. By automating tasks such as course registration, attendance tracking, and performance reporting, the system reduces manual workload and minimizes errors. The centralized database and role-based access ensure secure management of all academic data. Despite challenges like ensuring data security and system integration, the project is expected to deliver a scalable and user-friendly platform that supports the dynamic needs of a modern educational institution.

Software Requirements Specifications

- **Block diagram of our Project** These are Certain blocks Present in this Project



CHAPTER-4

MODULES

Modules and Functionalities

Here we are going to explain about the Module whatever we have created inside our project which leads to know about the functionality of the our project which is specially designed to automate the college functionalities decrease the load of the manual working

They will interact with following Modules

4.1 Faculties Module:

The Faculty module deals with the function of the student monitoring which is done by Faculty Which includes the function of the Attendance, report card and all related information about the Student ,Where faculty can edit the information about them

They are listed below _

- 1.Attendance
- 2.Marks
- 3.Subject Allotments

4.2 Students Module:

A navigation bar will contain browsing access to other modules.

On the page, it should contain five sections:

- 1.Registration sections for Employes.
- 2.Advertisement for the Local organizations for Part time jobs.
- 3.Services based on different Categories of User Problems/issues.
- 4.Job Services section to provide part time jobs in local organizations.
- 5.About Section – it should Contain all the details of the Website.

4.3Admin:

Admin will be responsible to manage the details of all the Users, Employes, and Part time job organizations. Like admin can add new services, Organizations to part time jobs of local area and view the list of existing services and Employes, Admin can Approve the order from the user, Admin can check the Availability of the services in the application.

- Admin can ADD/DELETE/UPDATE/VIEW User and Employee details.
- Admin can ADD/DELETE/UPDATE the Services.
- Admin can ADD/DELETE/APPROVE the Requests from the User and Employee.

Software Requirements Specifications

- Admin can VIEW the number of User and Employee.
- Admin can Access the availability of the Employee for the Services.

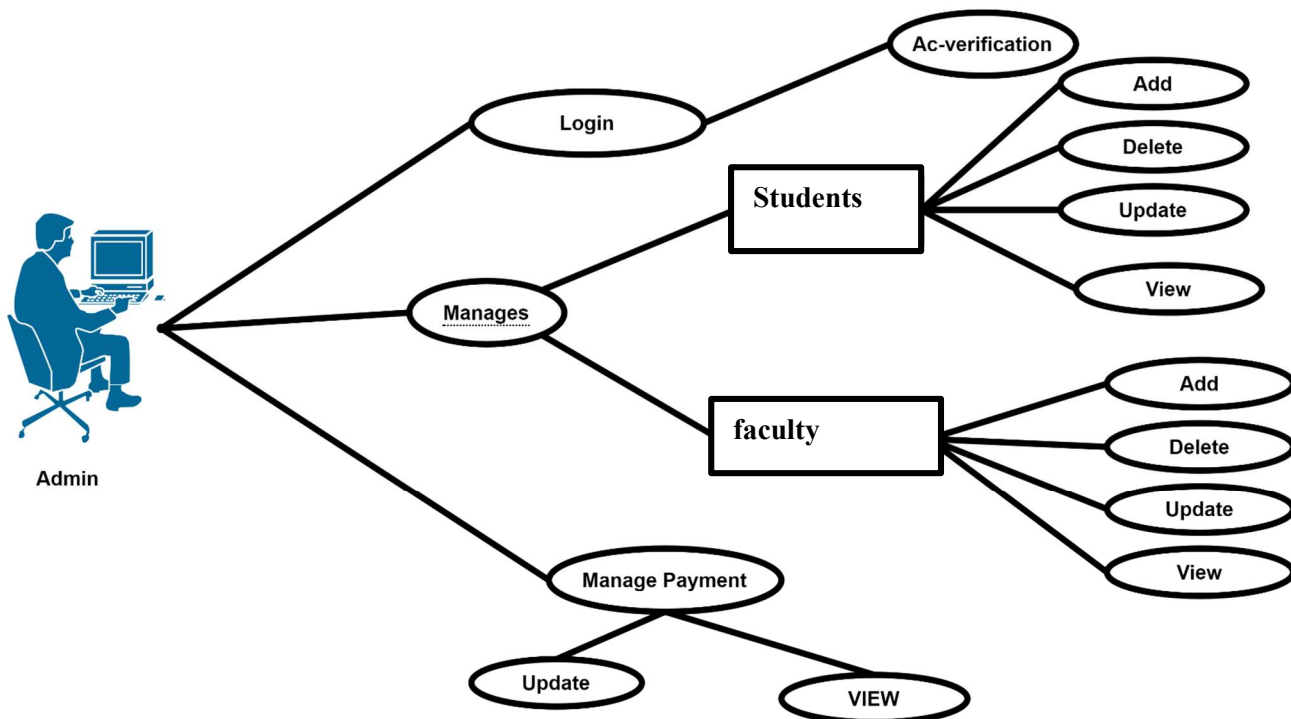
Software Requirements Specifications

The Administrator can do the following actions

1. Login
2. Admin Actions
 1. Number of Users in a system which will handle works done by all
 2. Registration of the new user as well as the new faculty
 3. All the payment related Works
 4. Views/Update/Delete personal details of Student and the Faculty
3. Logout

ADMIN

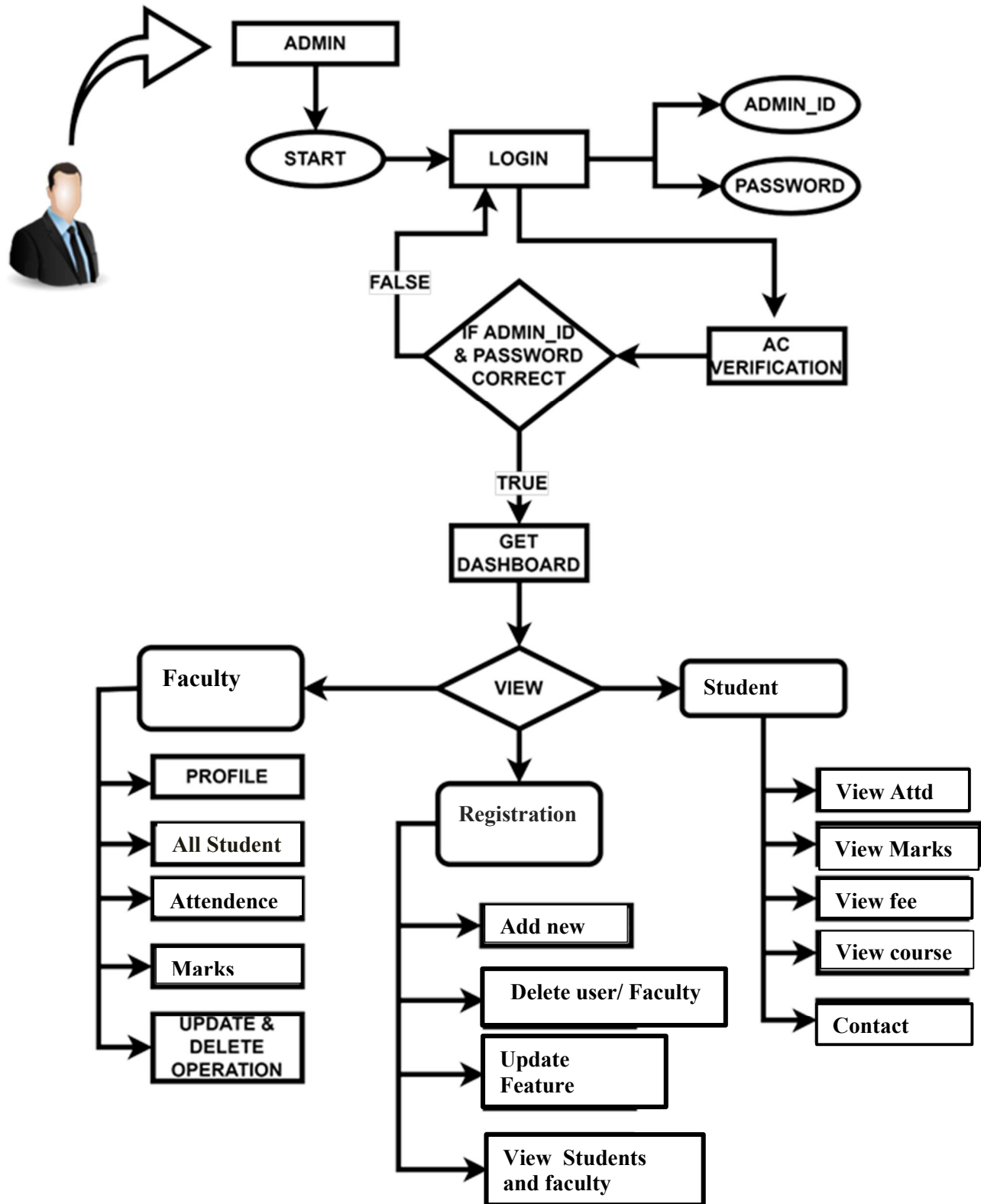
□ Use Case Diagram for Admin



Software Requirements Specifications

Use Case ID:	Use Case Name: Admin
Description	Admin can login into the Application with valid credentials. After entering the dashboard, update and manage services, update reports.
Actor	Admin
Preconditions	Admin, should have a valid account
Post conditions	Admin, will be logged in.
Events	The admin opens the website and it will direct to the login page. The admin can add/update/delete Alerts. The admin can manage Student and Faculty. Admin can update reports.
Exceptions	If admin enters wrong user ID and Password, they cannot login to the system it will show login failed.

Software Requirements Specifications

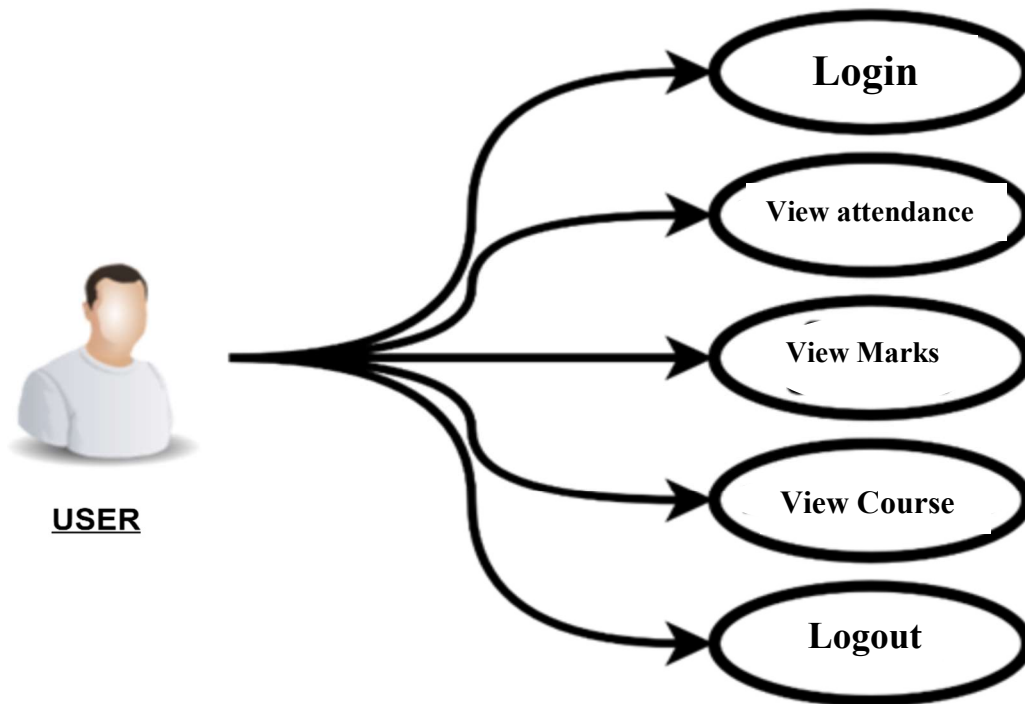


Software Requirements Specifications

USER (Students)

- User can visit the Website for Details.
- User can Access to view the details whatever updated by the faculty
- User can manage his/her course details
- User can make payment through website that may be from the direct to account.
- User can see their marks which will be updated by the faculty
- User can use direct contact to the faculty through the given number

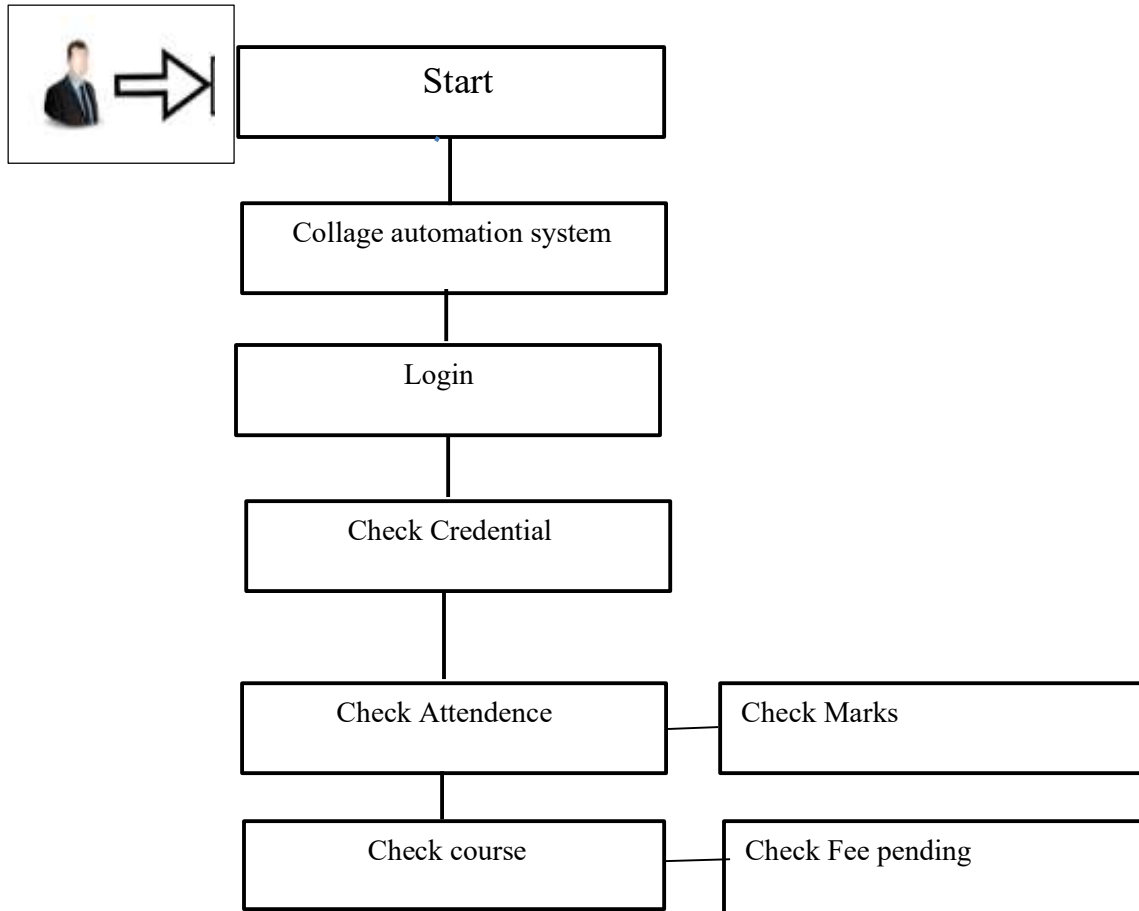
□ **Use Case Diagram of User(student) :-**



Software Requirements Specifications

Use Case ID:	Use Case Name: User
Description	Student can see their information if he want anything , then login and view, the Attendance marks, fee and the courses whatever he wants In the application.
Actor	User (students)
Preconditions	User must have a valid account
Post conditions	User have to login.
Normal Course of Events	The students opens the website and he can view the services.

Software Requirements Specifications



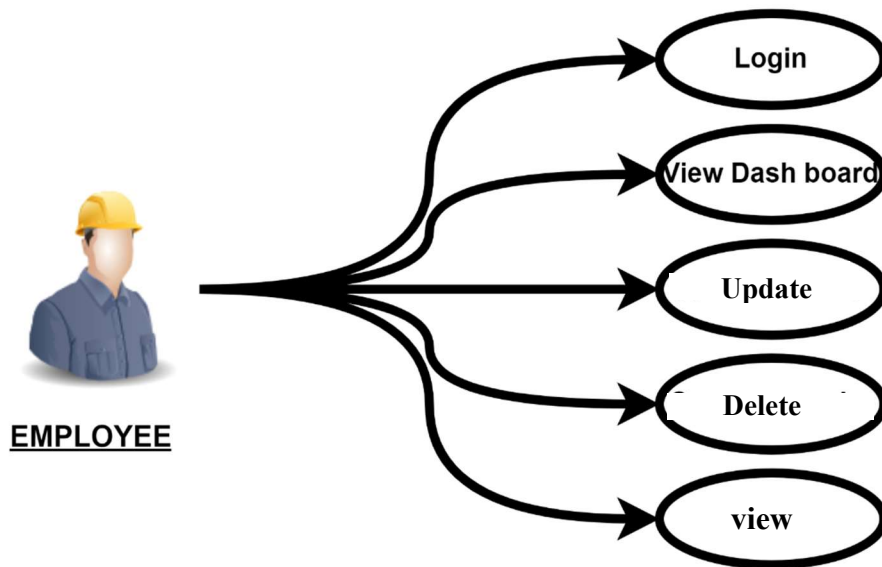
Software Requirements Specifications

Faculty

- Faculty should be able to use the website for various academic services related to students and courses.
- Faculty need to register on the platform and get approval from the Admin to become active faculty members, enabling them to access the system's teaching resources.
- Once registered and approved by the Admin, the Faculty can manage and update student information, such as marks, attendance, and course progress.
- Faculty can also view their assigned courses and branch-related information and interact with the system as a regular user for any general tasks (such as booking resources or accessing internal services).
- Faculty can receive notifications or updates related to the academic work and also perform student evaluations and grading, which are verified and approved by the Admin before being finalized.

Software Requirements Specifications

Use Case Diagram of Faculty :-



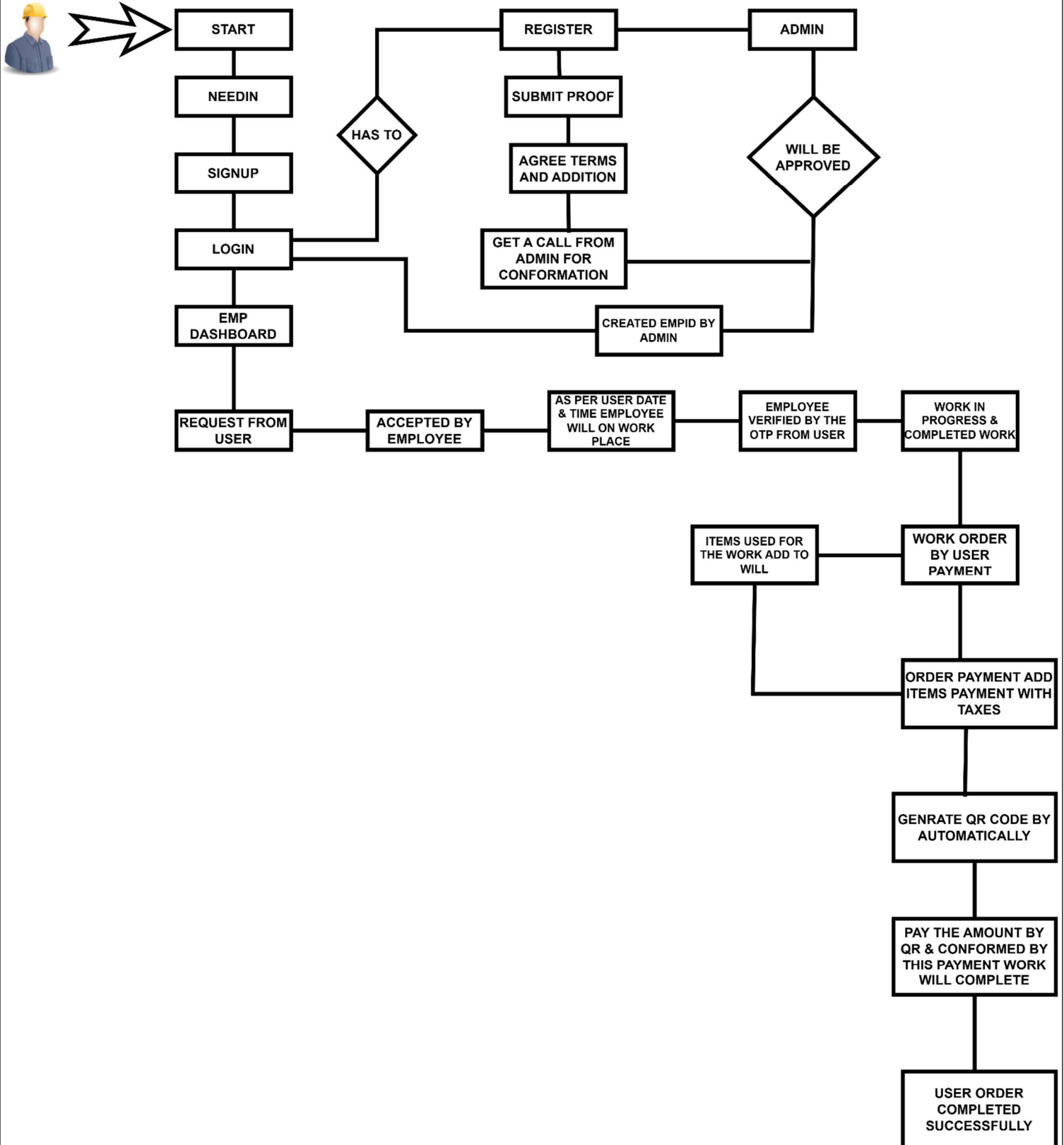
Note -; THESE ALL THE UPDATE, DELETE. AND VIEW ARE THE BELONGS TO THE FUNCTION OF THE STUDENT MODULE WHERE WE WILL PERFORM THE CRUDE OPRATION WITH MARKS, ATTENDENC, FEE, MARKS, COURSES, FACULTY ,ETC.

Software Requirements Specifications

Use Case ID:	Use Case Name: Employee
Description	After login the faculty , he reaches his dashboard and view the details of the registered Students, where he will be Able to perform his works
Actor	Faculty
Preconditions	Faculty, should have a valid account
Post conditions	Faculty will be logged in.
Events	faculty can open and view his dashboard, then he can see the students details and also able update their data
Special Requirements	Working-hours.

Software Requirements Specifications

□ ACTIVITY FLOW DIAGRAM OF EMPLOYEE :-



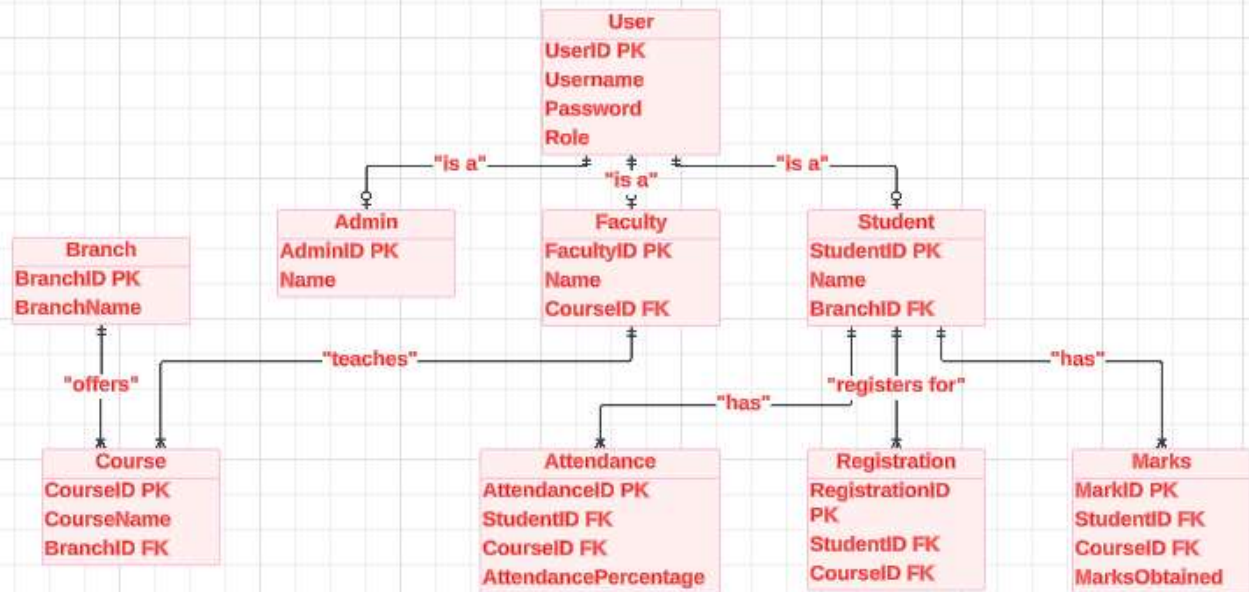
Software Requirements Specifications

Overview:

This SRS document contains many use case diagrams and descriptions about all use case diagrams have been included in this document. It also gives the functional and non-functional requirements.

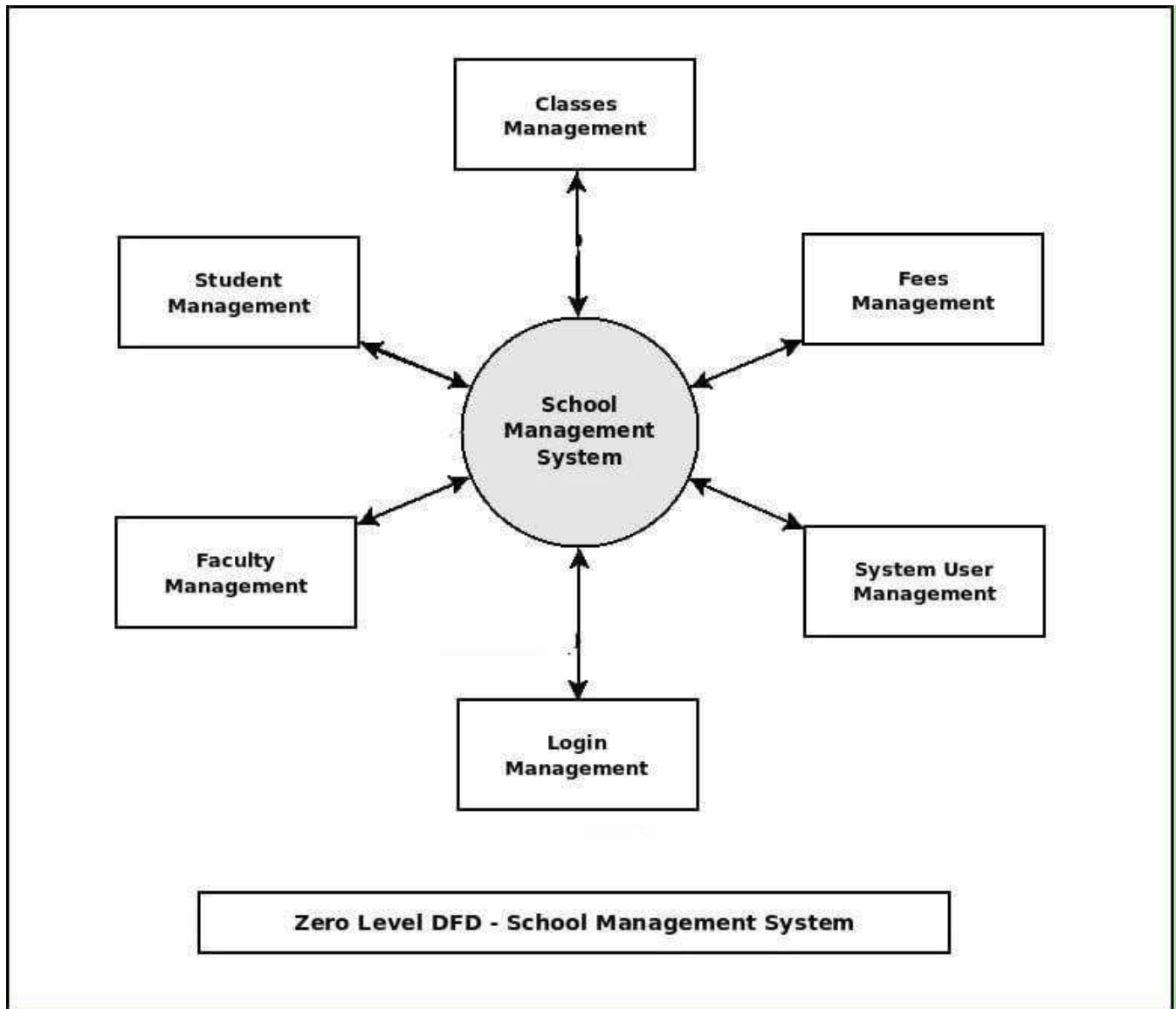
GATE – 1 (DESIGN PROCESS)

ER diagram of the website



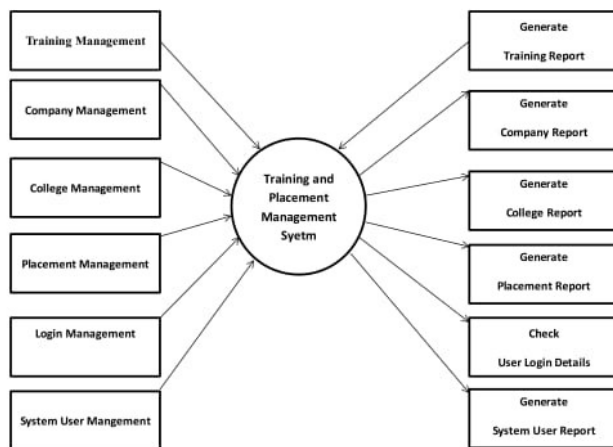
DFDS FOR NEEDIN WEBSITE

LEVEL 0 :-



Software Requirements Specifications

LEVEL 1 :-

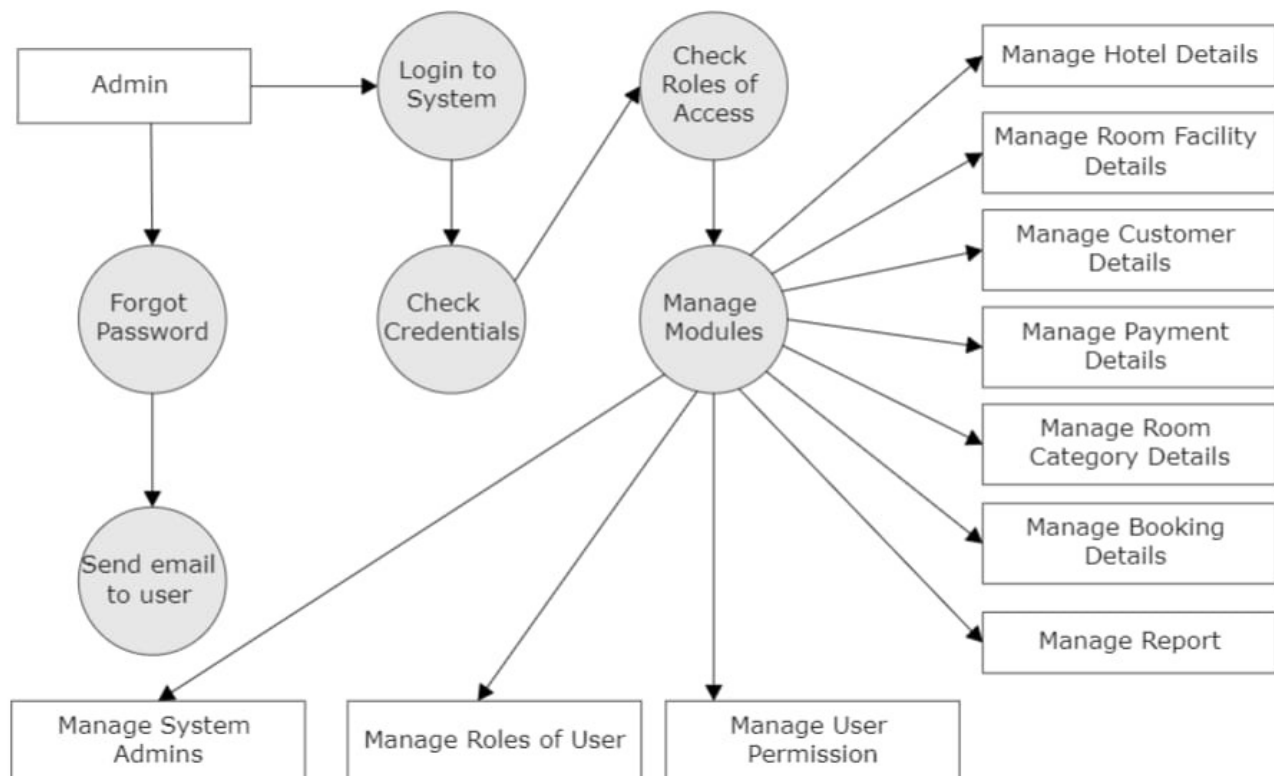


First Level DFD: - Training and Placement Management System

LEVEL 2 :-

DFD for Employee Management System

Second Level DFD- Hotel Room System



Software Requirements Specifications