REQUIREMENT REPORT

NAME :	ISWARYA P
ROLL NO:	7376221EC184
PROJECT ID:	38
PROBLEM STATEMENT:	STUDENT RANKING DASHBOARD

1.INTRODUCTION:

1.1.PURPOSE:

The purpose of the student ranking system is to provide an efficient and automated platform for ranking students based on their performance metrics. It aims to facilitate fair and transparent evaluation, enabling educational institutions to recognize and reward student's achievements accurately.

1.2.ABOUT THE STACK :

The uniqueness of this system lies in its utilization of the MERN stack, which combines MongoDB, Express.js, React, and Node.js. This stack offers a robust and scalable solution for building a full-fledged web application with real-time updates, interactive UI, and seamless data management.

2.STACK:

COMPONENTS	TECH STACK
FRONT END	React.js
BACKEND	Node.js,Express
DATABASE	MongoDB

3.Component Functionality:

1. **MongoDB:** Store and manage student data, performance metrics, and rankings.
2. **Express.js:** Handle server-side logic and API endpoints for data retrieval and manipulation.
3. **React:** Build an interactive and responsive user interface for data input, retrieval, and visualization.
4. **Node.js:** Run the server-side application and handle backend functionality.
5. **Authentication and Authorization:** Implement user registration, login, and role-based access control to ensure secure access to the system.
6. **Ranking Algorithm:** Developing an algorithm that calculates student rankings based on performance metrics.
7. **Real-time Updates:** Utilize websockets or server-sent events to enable real-time updates of rankings and data changes.

4.Goals and Objectives:

1. Streamline the process of ranking students based on their performance.
2. Provide an intuitive and user-friendly interface for data input and retrieval.
3. Ensure accurate and transparent evaluation of student achievements.
4. Save time and effort for administrators by automating the ranking process.
5. Enable students to track their performance and understand their standing among peers.
6. Facilitate better decision-making by providing insights through analytics and reports.

5.Functionality:

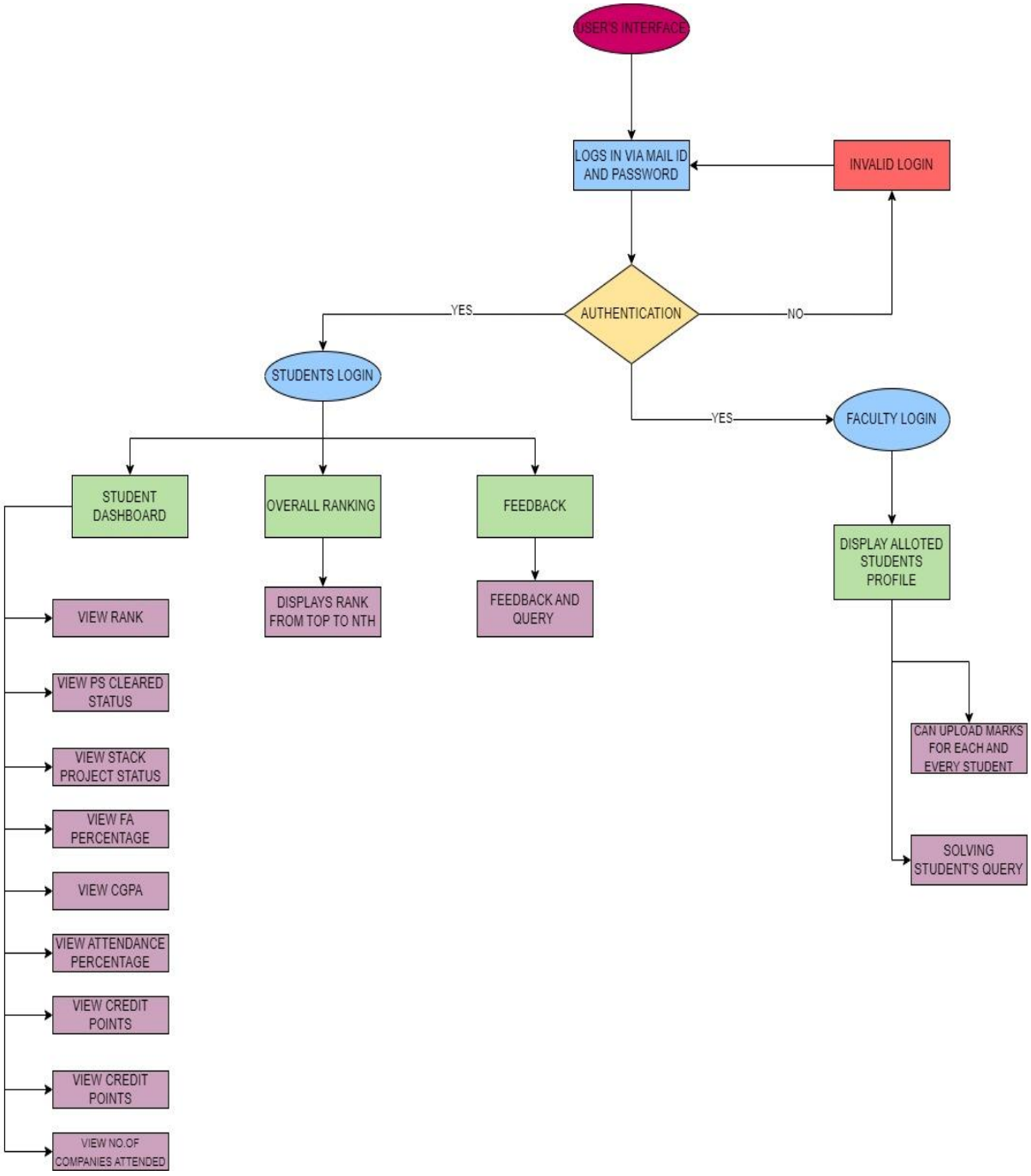
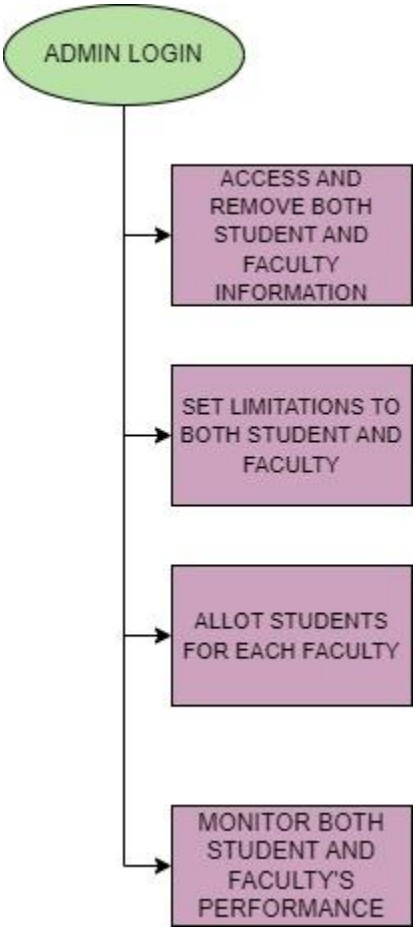
- **User Registration and Authentication:**
  Allow users (such as students, teachers, and administrators) to sign in and authenticate themselves to gain access to the system.
- **Performance Data Input:**
  Enable authorized users to input student performance data, including PS level cleared status, intensive training status ,CGPA, exam scores, attendance, project grades, etc.
- **Ranking Algorithm:**
  Implement a ranking algorithm that calculates the overall performance of students based on the provided data and assigns ranks accordingly.
- **Display Rankings:**
  Display the ranked list of students on a dashboard or leaderboard, showcasing their names, ranks, and performance metrics.
- **Search and Filtering:**
  Provide search and filtering functionalities to allow users to find specific students or sort them based on criteria like no.of. levels cleared in personalized skill .
- **Real-time Updates:**
  Ensure that the rankings and data are updated in real-time as new performance data is entered or modified.
- **Reports and Analytics:**
  Generate reports and analytics to visualize student performance trends, identify patterns, and make data-driven decisions.

7.USER AND ADMIN :

User and admin can login the website by using valid mail id . The user can see his/her rank and progress . Also he/she will be able to compare his/her performance with competitors . The faculty can allot and update marks for each and every student and solving his/her query .the admin have the overall control.The admin can access and delete the student and faculty information and set limitation for both student and faculty.

8.FLOWCHART:

STUDENTS AND FACULTY INTERFACE:



ADMIN INTERFACE(MANAGEMENT TEAM):