



## **BANNARI AMMAN INSTITUTE OF TECHNOLOGY**

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<b>PROJECT ID :</b> 02
<b>PROBLEM STATEMENT:</b> Training Performance Tracker

### **PROBLEM STATEMENT :**

All the students' training data (attendance, assessment) should be maintained in a single place. Students' dashboard should reflect their current talent scenario. Skill based analysis should be available.

### **INTRODUCTION :**

The problem is that currently, student training data such as attendance records and assessments are scattered across different systems or documents, making it challenging to get a holistic view of each student's progress and talents. This lack of centralized data management leads to inefficiencies in tracking student performance and identifying areas for improvement. Additionally, there is a need for a student dashboard that provides a comprehensive overview of each student's talent scenario, including their current skills, strengths, and areas needing development. Moreover, there is a requirement for skill-based analysis tools that enable educators to assess students' proficiency levels in various skills and tailor their learning experiences accordingly. Therefore, the challenge is to create a unified system that consolidates student training data, offers a student dashboard for talent visualization, and includes robust skill-based analysis capabilities for effective educational outcomes

## TECHNICAL COMPONENT :

COMPONENT	TECH STACK
Backend	Express.js and Node.js
Frontend	React (jsx , scss)
Database	MySQL
API	RESTful services

## PROJECT FLOW:

### 1. Purpose :

The purpose is to centralize student training data for efficient management, create a student dashboard reflecting talents, provide skill-based analysis for tailored learning experiences, and enhance overall educational outcomes through data-driven interventions and personalized learning pathways.

### 2. Scope :

The scope involves designing and implementing a centralized system to store and manage all student training data, developing a user-friendly student dashboard for talent visualization, integrating skill-based analysis tools for personalized learning, and ensuring scalability and adaptability for future educational needs and advancements.

## USER PERSONA :

### 1. Students :

- The dashboard provides basic details of students such as their Name, Roll No., Department, Address, etc. Students have access to view their details exclusively on the dashboard but do not have permissions to modify the marks given by the faculty

- The dashboard primarily focuses on student training data related to training and placement, students' special talents in various technologies, and their programming skills.
- Students can view marks for specific training programs based on their understanding level, with these marks highlighted on the dashboard. Additionally, students can upload proofs for achievements such as completion of dayskill and night skill programs, programming knowledge, aptitude and verbal training results, special skills (e.g., web technology, mobile application development, blockchain, etc.), completed project works from training and placement, and ongoing project works.

## **2. Admin and Management :**

- The main specifications for the admin and management roles include access to all student details and the ability to filter student data by specific skills or completed projects. They can access comprehensive information about each student, including their marks, faculty-assigned marks, proofs for project works, and programming knowledge.
- Admin and management have a separate dashboard that allows them to view all student profiles and apply filters based on the desired skills or projects. This enables them to track student progress effectively and make informed decisions regarding training and placement initiatives.
- Additionally, the admin and management roles have the authority to generate reports and analytics based on student data, facilitating data-driven decision-making processes and strategic planning for educational and placement programs.

## **3. Parents :**

- Parents can track their child's performance trends over time, including improvements in skills, areas of strength, and areas for further development. This insight helps parents support their child's learning and educational goals effectively.

- The dashboard may include a feedback loop where parents can communicate with educators, inquire about their child's progress, and seek guidance or support regarding their child's training and placement journey.
- Parents can access information related to career guidance and counseling offered as part of the training programs, enabling them to assist their child in making informed decisions about future career paths and opportunities.

#### **4. Facilities :**

- Faculty members have access to specific sections of the dashboard related to student progress and training data.
- They have permissions to access and modify marks that they have assigned to students.
- Faculty members do not have access to modify marks given by other faculty members or administrative staff.

#### **FEATURES :**

- **Login and Registration System:**
  - Implement a secure user authentication system for all user personas (Admin/Management, Students, Parents).
  - Provide a registration form for new users to create accounts with necessary details (e.g., Name, Email, Password, Role).
  - Use Spring Security in the backend to handle authentication and authorization processes securely.
- **Centralized Data Management:**
  - Store all student training data (attendance, assessments) in a single, centralized database (MySQL).
  - Implement Spring Boot for the backend to handle data storage, retrieval, and management efficiently.
- **Student Dashboard:**
  - Display basic student details (Name, Roll No., Department, Address)

exclusively for each student.

Provide a user-friendly interface using React (JSX, SCSS) for easy navigation and interaction.

Showcase talent assessment results, training marks, and achievements such as completion of programs and projects.

Allow students to upload proofs for achievements like completed projects, programming knowledge, and special skills.

- **Skill-Based Analysis Tools:**

Develop tools for educators to assess student proficiency in various skills (e.g., web technology, mobile app development, blockchain).

Utilize RESTful services for integrating skill assessment functionalities into the system.

Offer personalized learning pathways based on skill assessment results to tailor learning experiences for students.

- **Report Generation and Analytics:**

Generate comprehensive reports and analytics based on student data for educators, management, and parents.

Provide insights into student progress, strengths, areas for improvement, and talent scenarios.

Enable data-driven decision-making for strategic planning and educational interventions.

- **Data Privacy and Security:**

Implement robust security measures such as secure authentication mechanisms (e.g., JWT tokens), data encryption, and HTTPS protocols.

Ensure compliance with data protection regulations (e.g., GDPR, CCPA) to safeguard student data privacy and integrity.

Regularly audit and monitor system security to detect and prevent potential vulnerabilities.

## **FUNCTIONAL REQUIREMENTS :**

- **User Access Control (User Persona) :**

The system implements role-based access control, allowing Admin/Management full access, Students edit-only access to their own data, and Parents view-only access

- **Dashboard Featured:**

The student dashboard offers a centralized view of student details, talent assessment, training marks, and the ability to upload proofs of achievements, while providing a user-friendly interface for easy navigation.

- **Skill-Based Analysis:**

Educators can assess student proficiency in various skills using built-in tools, enabling personalized learning pathways tailored to individual student needs based on performance data.

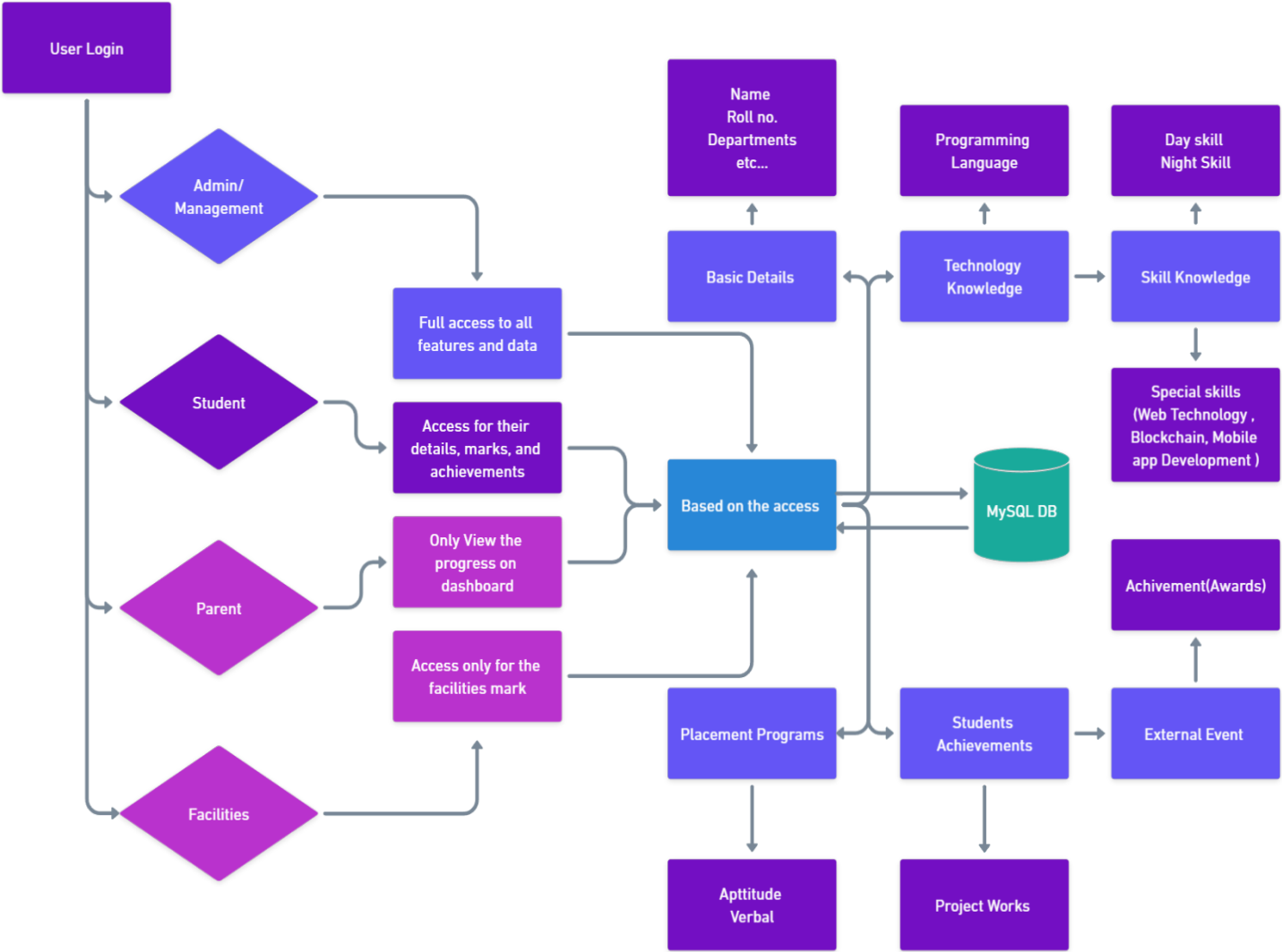
- **Report and Analytics:**

The system generates comprehensive reports and analytics based on student data, facilitating data-driven decision-making for educators, management, and parents to track progress and identify areas for improvement

- **Data Privacy and Security:**

Robust security measures ensure data privacy and integrity, including secure authentication, encryption of sensitive information, and compliance with data protection regulations to safeguard student data.

FLOW CHART :



## ER Diagram :





# UI Design :

