KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A++" Grade
Anand Nagar, Krishnankoil, Srivilliputtur (Via), Virudhunagar (Dt) - 626126, Tamil Nadu | info@kalasalingam.ac.in | www.kalasalingam.ac.in

EXSEL
EXperiential and SErvice Learning

SCHOOL MANAGEMENT SYSTEM WITH INTEGRATED LEARNING PLATFORM

A COURSE LEVEL PROJECT REPORT

Submitted by

III-year students of Bachelor of Technology

T. SANTHOSH KUMAR REDDY -99220041391
V. SREENIVASULU -99220041409
N. SETHU VARDHAN -99220040657
M. DELPHI SHALOM -9922001047
T. NAVYA SRI -99220040746

in partial fulfillment of the course of

215EXS3201 / EXSEL – DESIGN-BUILD-OPERATE

Academic Year 2024 – 2025 (Even Semester)

KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A++" Grade
Anand Nagar, Krishnankoil, Srivilliputtur (Via), Virudhunagar (Dt) - 626126, Tamil Nadu | Info@kalasalingam.ac.in | www.kalasalingam.ac.in

BONAFIDE CERTIFICATE

Certified that this project report **"SCHOOL MANAGEMENT SYSTEM WITH INTEGRATED LEARNING PLATFORM"** is the bonafide work of "V JEEVAN SURYA, S PRANEETH GOWD, V YAMINI SARASWATHI, S DHARSHINI, SUBASHINI, T SANTHOSH KUMAR REDDY, V SREENIVASULU, N SETHU VARDHAN, M DELPHI SHALOM, T NAVYA SRI" who carried out the project work under my supervision.

Faculty Mentor

Submitted for the Project Viva-voce / Review held at Kalasalingam Academy of Research & Education, Krishnankoil on ……

Internal Examiner **External Examiner**

TABLE OF CONTENTS

PROBLEM STATEMENT

Activity Engagement Platform - Create an engineering-based approach to engage residents, including old people and mentally ill children, in activities that are enjoyable and stimulating, accommodating their diverse ages and abilities.

Children born with mental illnesses often face significant challenges in traditional educational systems that are not designed to support their unique learning needs. Without proper monitoring and personalized intervention, their intellectual abilities and academic potential may go unnoticed or underdeveloped. Existing methods lack structured systems that connect academic performance, such as test marks, with cognitive growth indicators like IQ levels. This gap makes it difficult for educators and caregivers to accurately assess the progress of mentally ill children, plan effective teaching strategies, and provide timely support.

There is a strong need for a secure, user-friendly platform that enables continuous monitoring of academic and intellectual development in these children. By building a system that captures test scores, calculates IQ progression over time, and generates insightful reports, educators can better understand each child's abilities and growth patterns. Such a platform would not only help in crafting individualized learning plans but also promote inclusivity, allowing mentally ill children to feel empowered, valued, and better integrated into society. This project addresses this need by utilizing modern web development technologies and secure databases to create an effective solution for special education environments.

ABSTRACT

This project explores and monitors the intellectual abilities of mentally ill children by linking academic performance with IQ levels through a secure, interactive platform using technologies like HTML, CSS, MySQL, and SQL. It enables educators to input test scores, track IQ development, and generate personalized learning strategies, promoting inclusivity and supporting each child's growth. By combining robust databases with modern web frameworks, the system enhances data security, accessibility, and contributes meaningfully to special education practices.

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Today's world, mental health is becoming an important topic, especially among children. Many children who are born with mental health challenges struggle to cope with traditional learning environments. They often require special attention, different teaching styles, and regular monitoring of their development. Understanding their abilities and tracking their improvement is essential to help them achieve their full potential.

One major tool used to assess a child's learning ability is the Intelligence Quotient (IQ) test. IQ measures a child's ability to learn, reason, and solve problems. In our project, we aim to support mentally challenged children by creating a system that helps teachers track their students' academic progress based on their IQ levels. By observing changes in their marks and IQ scores over time, teachers can provide the right support and strategies to help each child grow and succeed.

Our project focuses on developing a web-based platform where teachers can easily upload the marks of mentally ill children after each test. The system will automatically calculate the child's IQ based on their marks, making it easier to track their progress. This information will help teachers, parents, and schools to understand each child's learning pattern and plan better support systems for them.

To build this platform, we use simple but powerful technologies. For the front-end part of the website, we use HTML and CSS. These tools help create easy-to-use pages where teachers can log in, upload marks, and view reports. For the back-end (where data is processed and stored), we use Django (a Python-based framework) along with databases like MongoDB and MySQL. These technologies ensure that the student data is stored safely, processed accurately, and kept secure.

The reason we chose this approach is to make the system very user-friendly for teachers, even if they are not highly skilled in technology. Simple and clean interfaces help teachers quickly upload data without confusion. Teachers can log in securely, enter the marks of each student, and the system will do the rest — calculate the IQ, store the information, and present easy-to-read reports.

Our goal is not just to collect marks or calculate IQ scores. We want to create a meaningful impact. By using this system, teachers can better understand the unique learning needs of each child. Over time, they can adjust their teaching methods, design individual education plans, and ensure that every child gets an equal opportunity to learn and thrive. We believe that education should be inclusive, and technology can play a powerful role in making that possible.

Mental health problems among children are a serious concern globally. Research shows that around 15% of children and adolescents suffer from mental health disorders. If not identified and treated early, these challenges can affect their overall development, education, and future life. Our project addresses this issue by offering a simple and smart way for schools to monitor the academic and intellectual progress of mentally ill children right from an early stage.

Technology is already bringing major changes to how we approach mental health. From wearable devices that track stress levels to robots that help children learn better, the world is opening up new possibilities. Our system adds to this positive trend by using web technology to create a supportive, inclusive, and growth-focused educational environment.

In short, this project combines compassion, technology, and education to build a system that not only measures academic scores but also recognizes the hidden potential of children facing mental health challenges. It provides teachers with the tools they need to understand, support, and celebrate every child's learning journey.

By bringing marks, IQ levels, and learning improvements together on a single platform, we are taking a small but meaningful step towards a more inclusive and understanding education system for mentally ill children.

PROBLEM DEFINITION

Children with congenital mental health challenges often experience significant barriers to academic achievement, emotional stability, and social integration. Traditional methods of assessing their intellectual capabilities and mental health progress lack personalization and real-time adaptability, often resulting in delayed interventions and limited developmental outcomes. Despite advancements in mental health awareness, access to effective, continuous monitoring systems remains insufficient, constrained by systemic barriers such as resource shortages, societal stigma, and technological gaps.

This project proposes the development of a secured, web-based platform that systematically records and analyses academic performance to infer IQ levels, offering dynamic insights into each child's capabilities. By leveraging technologies like MySQL, HTML, CSS and JS, the system seeks to provide a scalable solution for educators, therapists, and caregivers to design individualized strategies and interventions.

However, the approach is inherently limited by the quality and consistency of data collection, ethical considerations surrounding data privacy, and the system's reliance on academic indicators, which may not fully encompass the complexity of a child's mental health status. Furthermore, while technology offers valuable support, it cannot entirely replace the nuanced understanding and care provided through direct human interaction.

OBJECTIVES

- Develop a secure, user-friendly website for teachers to input and manage test marks of mentally ill children.
- Implement an automated system to calculate the IQ level for each child based on their test marks using a defined algorithm.
- Track and evaluate the academic progress and potential of each child over time through continuous IQ level monitoring.
- Generate individual performance reports to assist teachers and caregivers in designing personalized educational strategies.
- Ensure data security and privacy of sensitive information through secured database management (using MySQL).

COMMUNITY IMPACT

This project targets children with congenital mental health challenges, along with the educators, caregivers, and families who support them. By enabling systematic monitoring of academic performance and IQ progression, the initiative fosters early intervention, personalized education, and improved developmental outcomes. Socially, it promotes inclusion, reduces stigma, and enhances the self-esteem of affected children. Educationally, it empowers institutions to

implement tailored teaching strategies, ensuring that mentally ill children are not marginalized within mainstream systems. Economically, the project contributes to long-term societal benefits by minimizing future dependence on healthcare and social support services, thereby fostering greater independence and productivity among the beneficiaries. Through a holistic, data-driven approach, the platform aspires to create sustainable positive change across social, educational, and economic dimensions.

MARKET ANALYSIS

Existing solutions for supporting mentally ill children largely revolve around traditional therapeutic interventions, individualized education programs (IEPs), and limited digital platforms for academic tracking. While some tools offer basic performance monitoring or emotional well-being assessments, few integrate real-time academic performance with IQ evaluation in a unified, accessible system. Moreover, current platforms often lack personalization, early detection mechanisms, and secure handling of sensitive data.

A significant gap exists in providing a holistic, web-based solution that simultaneously tracks academic performance, calculates IQ levels, and offers actionable insights for tailored educational strategies. This project addresses that gap by introducing a secure, scalable platform specifically designed for children with mental health challenges. By combining educational data analysis with modern web technologies, it offers a novel, practical solution that bridges educational, social, and psychological support systems, thereby justifying the need for its development.

FIELD VISIT:

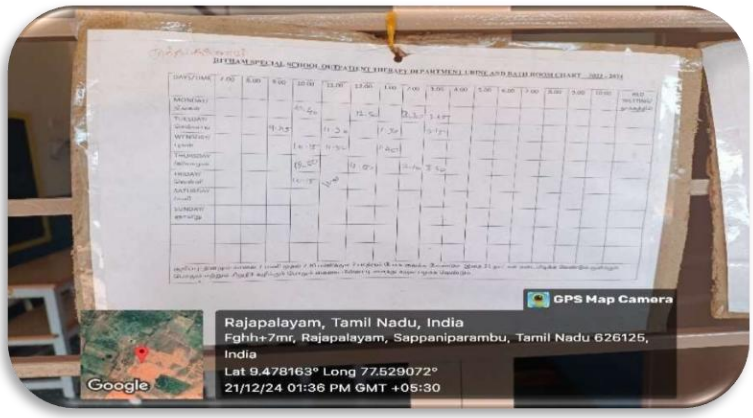


Figure 1.0

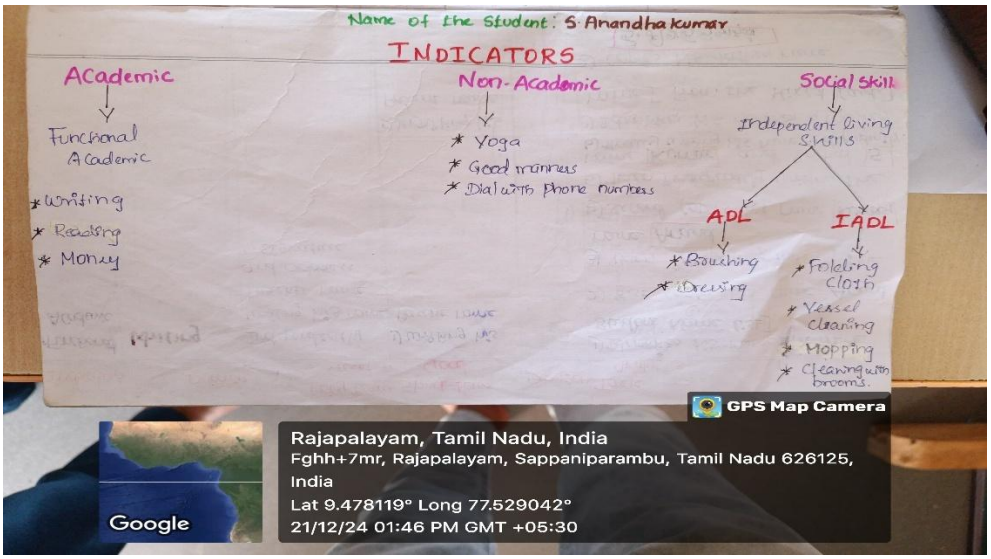


Figure 1.1

Figure 1.2

Figure 1.3

Figure 1.4

Name: CSI school for the mentally retarded.
Location: Elwin Centre, Sivakasi, Tamil Nadu.
Year of establishment: 1980
Type of school: It is a special school for “perinatal mental illness”. This school is for the children of mental ill with poor background and this school became a helping hand for their parents. They will engage the children in all aspects & fields includes education, sports, pure food….

CHAPTER II

LITERATURE REVIEW

S.NO	AUTHOR(S)	TITLE	YEAR	KEY FINDINGS
1	Armstrong L. L., Watt E.	Meaning mindset theory: a transdiagnostic approach to mental health promotion and intervention for children	2025	Promotes resilience in children by developing a positive and adaptive sense of meaning.
2	Mittal M. M., Singh A.	Do Children With Accidental Gunshot-related Fractures Experience Greater Risk of Mental Illness and Psychiatric Disorders?	2025	Found that accidental injuries increase the risk of PTSD, anxiety, and depression.
3	Lin K., Mak L.	Urbanization and mental health in left-behind children: systematic review and meta-analysis	2025	Highlighted increased mental health risks among left-behind children.
4	Chiba R., Miyamoto Y.	Benefit Finding and Growth Among Family Caregivers of Individuals With Mental Illness: A Scoping Review	2025	Caregiving can lead to personal growth, resilience, and emotional strength.
5	Mitiku K. W., Tegegne E.	Mental illness in children and its determinants in Ethiopia: a systematic review and meta-analysis	2024	Identified major determinants of mental health issues and need for better services.
6	Sheldon F. H., Barr B.	Maternal mental ill health and adolescent mental health: Millennium Cohort Study analysis	2023	Showed cumulative adverse exposures worsen adolescent mental health.

7	Hilton R. A., Tozzi L.	Transdiagnostic neurocognitive dysfunction in children and adolescents with mental illness	2024	Cognitive impairments were common across multiple psychiatric disorders.
8	Sharma P., Malhotra N.	Mental Illness Leading to Homelessness in Adolescents and Reintegration with Families	2024	Highlighted the role of mental health in adolescent homelessness and reintegration.
9	Qin X., Lu J. G.	Artificial Intelligence Quotient (AIQ)	2024	Introduced the concept of AIQ and its impact on AI-assisted task performance.
10	Li J., Ju S. Y.	Development of a digital intelligence quotient scale for primary school students	2024	Designed a digital IQ scale for evaluating children's digital skills.
11	Shi S., Chen Y.	Evaluating the associations between intelligence quotient and multi-tissue proteome	2024	Found significant links between proteins and IQ measures.
12	Bouzaher M. H., Wu S.	Intelligence quotient testing in children with hearing loss: a systematic review	2024	Stressed the importance of using non-verbal IQ tests for hearing-impaired children.
13	Huang Y., Luo F.	Maternal sleep disturbance during pregnancy and child intelligence quotient	2025	Found that maternal sleep issues negatively affect child IQ development.
14	Li X., Wei, W.	Individualized prediction of multi-domain IQ in bipolar disorder patients	2025	Used brain imaging techniques to predict IQ in patients with bipolar disorder.

15	Mangal D., Gupta R.	Effects of Different Genres of Electronic Games on Spatial Skills and IQ	2025	Showed that certain games can improve spatial skills and IQ.
16	Santosa A., Fajri R. N.	Impact of Anemia on Academic Indicators: IQ, Academic Potential, Study Concentration	2025	Anemia was found to negatively affect IQ and concentration among students.
17	Suwiyanto A.	Correlation Between IQ and Student Listening Comprehension	2025	Higher IQ correlated with better listening comprehension skills.
18	Huang, Y., Luo F.	Maternal sleep disturbance during pregnancy and child intelligence quotient: a metabolome-wide association study	2025	Confirmed the adverse impact of poor maternal sleep on child cognitive development.

Table 1.0

CHAPTER III

SOFTWARE AND HARDWARE USED

1.Front-End Development (HTML, CSS, JavaScript)

- HTML:

  HTML serves as the foundation for the website, creating the structure and layout of the pages. Key elements such as forms for uploading marks, input fields for student details, and tables for displaying data are defined using HTML.

- CSS:

  CSS is responsible for styling the HTML elements, making the user interface visually appealing and user-friendly. It ensures a responsive design, utilizing frameworks like Bootstrap to adjust the layout across different screen sizes (desktop, tablet, smartphone). CSS is used to style forms, tables, buttons, and other page elements, ensuring ease of use for teachers with varying levels of technical expertise.

- JavaScript:

  JavaScript enhances interactivity and functionality on the front-end. It is used for form validation, ensuring that the data entered (marks and student details) is complete and correct before submission. JavaScript also facilitates dynamic data fetching through API calls (using Axios or Fetch API), enabling real-time communication with the back-end. For example, when a teacher submits marks, JavaScript sends the data to the back-end, updates the user interface with IQ scores.

  The frontend is the part of the website that teachers and administrators directly interact with.

  We built the frontend using **HTML** and **CSS**.

- It allows teachers to:

  Login securely to their accounts.

  Upload student marks easily through forms.

  View student data, uploaded marks, and IQ results on a simple dashboard.

- We made sure the design is:

  Simple and responsive (works on mobile, tablet, desktop).

User-friendly, especially for teachers who may not be very technical.

Visually clear, with easy navigation buttons and readable fonts.

2. Back-End Development (Python, Django, Database Integration)

- Python(Django/Flask):

  Python serves as the programming language for the back-end logic, handling requests, processing data, and interacting with the database. Using the Django (or optionally Flask) framework, Python facilitates the creation of RESTful APIs that manage communication between the front-end and the database. When marks are submitted, Python calculates, IQ = (INTELLIGENCE AGE / CHRONOLOGICAL AGE) X 100. It also handles user authentication, ensuring that only authorized teachers can access and upload sensitive student data.

  The backend is the hidden part that processes all the actions happening on the website. We used **Python** with **Django** as the backend framework.

- Backend responsibilities:

  Handle login authentication (making sure only authorized teachers can access).

  Receive uploaded marks from the frontend and store them safely.

  Calculate IQ levels based on uploaded marks automatically.

  Fetch data from the database and send it to the frontend when needed.

  This way, teachers only see a smooth experience without worrying about complex processes happening behind the scenes.

- Database(MongoDB/MySQL):

  MongoDB (for flexible, NoSQL storage) and MySQL (for structured, relational storage) are used to store student data, including marks, IQ scores, and progress over time. Python interacts with the database to store, retrieve, and update student records. The system supports personalized learning profiles, tracking cognitive progress based on individual abilities rather than standardized testing.

  We used **MySQL** to manage and store all the data safely.

- **MySQL** is used to store:

  Student basic information.

  Uploaded subject marks and calculated IQ scores.

- The database ensures:

Secure storage of sensitive information.

Quick retrieval when teachers want to view or analyse students progress.

Long-term tracking of improvements in student IQ levels and marks over time.

How It Works Together:

1. Teacher logs into the website (Frontend).
2. Teacher uploads students' marks (Frontend → Backend).
3. Backend processes the marks, calculates IQ, and saves the data (Backend → Database).
4. Teacher can view the uploaded marks and IQ levels (Frontend ← Backend ← Database).
5. The system keeps track of the progress and allows future updates easily.

3. Integration and Workflow

- HTML/CSS forms the interface layer where teachers interact with the system to upload marks and view results.
- JavaScript provides dynamic behaviour, sending requests to the back-end API and updating the front-end in real-time based on the processed data.
- Python handles the business logic on the server, processes IQ calculations, and manages database interactions to store and retrieve student data.
- The API created using Python (Django/Flask) ensures smooth communication between the front-end and back-end, maintaining security and scalability.

METHODOLOGY AND ALGORITHM

METHODOLOGY:

1. Requirement Analysis
   - Identify the goal: Help teachers upload mentally ill children's marks and track their IQ progress.
   - Understand user roles: Only teachers can upload and view data securely.
   - Plan system features: Login, Marks Upload, IQ Calculation, Progress Tracking.
2. Front-End Development
   - Tools Used: HTML, CSS, JavaScript (basic).
   - Pages Designed:
     - Login/Signup Page: For secure access by teachers.
     - Marks Upload Form: Teachers enter student details and marks for each test.
     - Dashboard: View all uploaded marks, IQ scores, and track student improvement.
   - Focus:
     - Clean design.
     - Easy navigation.
     - Mobile responsive (works on phones, tablets).
3. Back-End Development
   - Tools Used: Python with Django Framework.
   - Responsibilities:
     - Authenticate users (teachers).
     - Receive marks submitted from the frontend.
     - Calculate IQ level automatically based on uploaded marks.
     - Handle server-side logic like fetching and displaying data securely.
     - Protect sensitive student data through secure login sessions.
4. Database Management
   - MySQL Database:
     - Stores structured data like:
       - Student names, ages, classes.
       - Test marks and calculated IQ levels.

- MongoDB Database:
    - Stores unstructured data like:
        - Behavioural observations, learning patterns.
- Why Database?
    - Structured test data fits better in MySQL.

5. <u>IQ Calculation Logic</u>

- **Formula Used:**

IQ = (Mental/Intelligence Age ÷ Chronological Age) × 100

- Marks are mapped to estimated mental age using a predefined chart.
- This helps track how close the child is progressing toward age-appropriate learning goals.

6. <u>Testing</u>

- Test all functions (Login, Upload, IQ Calculation, Dashboard View).
- Test with different devices for responsiveness.
- Ensure all errors are handled (like missing marks, wrong data entry).

7. <u>Deployment</u>

- Host the website on cloud services like AWS, Firebase, or Heroku.
- Cloud storage for scalability and security.
- Remote access for teachers to use from school or home.

8. <u>Monitoring and Future Enhancements</u>

- Visual dashboards help teachers monitor child progress.
- Plan future upgrades:
    - Add AI-based learning suggestions.
    - Mobile app version.
    - Gamified learning experiences.
    - Integration with speech or visual tools for better accessibility.

Initially, a detailed requirement analysis was conducted to understand the needs of students, teachers, and administrators. Based on these requirements, the system was planned to include core modules like attendance tracking, marks management, educational video hosting, and IQ evaluation based on students' test performance.

The frontend of the system was developed using HTML and CSS, focusing on building a simple, clean, and responsive user interface. Web pages were created for teacher login, student

mark uploads, and a dashboard to view student progress. Care was taken to ensure that the design was user-friendly and accessible, even for non-technical users like school teachers. Basic JavaScript was used to handle form validations, providing a smooth and error-free experience.

The backend was developed using Python and Django, which handled the server-side operations such as user authentication, processing of uploaded marks, and IQ calculations. When a teacher uploads a student's marks, the backend securely processes this data, calculates the IQ using the formula (Intelligence Age ÷ Chronological Age × 100), and stores the results. Backend APIs were created to manage student information efficiently, maintaining data security and smooth communication between the frontend and the database.

The system uses both MySQL and MongoDB for data storage. MySQL was utilized to manage structured data like student profiles, subject-wise marks, and IQ scores. Meanwhile, MongoDB was chosen to handle unstructured data such as behavioral observations and personalized learning records. This hybrid database approach ensures flexible and scalable data management, catering to the unique needs of children with intellectual disabilities.

IQ level calculation is a critical part of the system. Student marks are mapped to estimated mental (intelligence) age, and the IQ is computed. This helps teachers monitor the cognitive and academic growth of each child over time. The IQ calculation method respects the learning pace of mentally ill children, offering a more compassionate and accurate way of understanding their potential.

Once developed, the system underwent rigorous testing. Both functional testing (to ensure each feature worked correctly) and usability testing (to ensure the interface was easy for teachers to use) were carried out. Finally, the system was deployed on cloud platforms like AWS or Firebase, providing scalability, security, and remote access for teachers and administrators.

ALGORITHM:

Step 1: Start the Process

- The system begins when a teacher opens the website and reaches the login page.

Step 2: Teacher Authentication

- The teacher enters their username and password.
- The system checks the login credentials against the stored records in the database (MySQL).
- If the login is successful, the teacher is redirected to the dashboard.
- If authentication fails, an error message is displayed and the teacher is asked to try again.

Step 3: Access the Marks Upload Section

- After successful login, the teacher navigates to the "Upload Marks" section.
- A form is displayed where the teacher can enter:
    - Student name
    - Student age
    - Class or category (e.g., Primary, Pre-Primary, Secondary)
    - Marks obtained in different subjects

Step 4: Upload Student Marks

- The teacher fills in the marks for each subject and submits the form.
- Before submission, frontend validation (using JavaScript) checks if all fields are properly filled.
- After validation, the form data is sent to the backend.

Step 5: Backend Receives and Processes the Data

- The Django backend receives the uploaded marks and stores them in the MySQL database under the student's profile.
- Simultaneously,DB stores any additional behavioral data or learning notes if provided.

Step 6: Calculate Intelligence Age

- The backend applies a mapping where marks are used to estimate the student's Intelligence Age.
- For example:
    - High marks in certain subjects indicate higher Intelligence Age.
    - Average or low marks reflect accordingly.

Step 7: Calculate IQ Level

- The system then calculates the IQ using the formula:

  IQ = (Intelligence Age ÷ Chronological Age) × 100
- The calculated IQ is rounded to the nearest whole number.

Step 8: Store IQ Result

- The IQ value is stored in the student’s record in the MySQL database.
- A corresponding behavioral record is updated in DB for advanced analysis later.

Step 9: Display Updated Information

- The system updates the dashboard automatically.

- The teacher can now view:
    - Student details
    - Uploaded marks
    - Calculated IQ score
    - Progress reports (if multiple tests are entered)

Step 10: Monitor and Track Progress

- Over time, as more marks are uploaded, the system tracks the trend of IQ growth.
- This helps teachers in understanding the improvement and planning better teaching strategies.

Step 11: Logout or Continue

- After uploading marks and viewing progress, the teacher can either:
    - Upload more marks for another student.
    - View more reports.
    - Logout safely from the system.

Step 12: End of Process

- The process ends when the teacher logs out or exits the website.

The teacher and student and the admin logs into the website, uploads student marks, and submits theform.

The backend processes the marks, calculates the IQ using the formula, and stores the data in the database.

Finally, the dashboard displays the marks and IQ results for teachers to track the student's progress.

FLOW CHART:

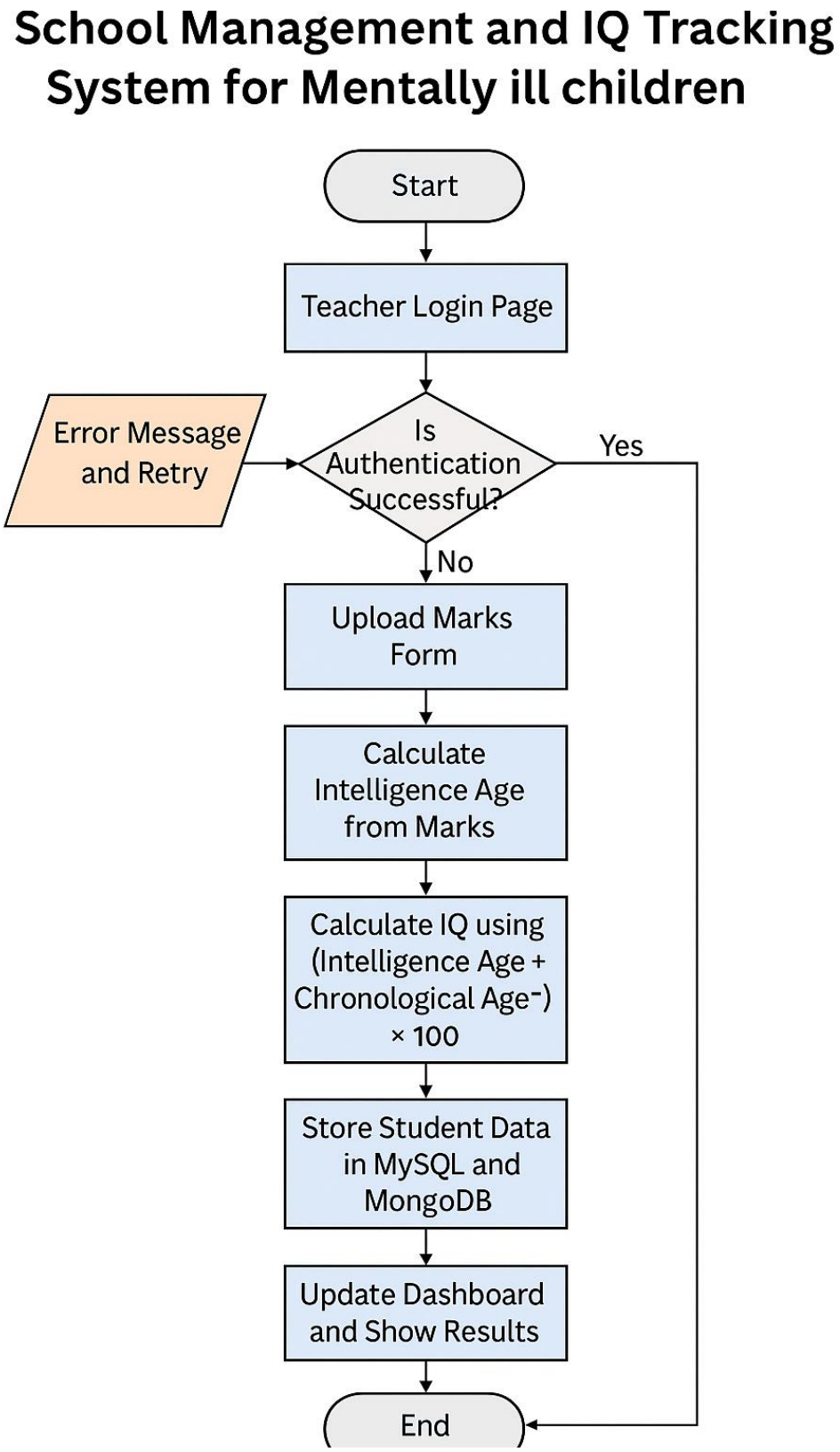


Figure 2.0

BLOCK DIAGRAM:

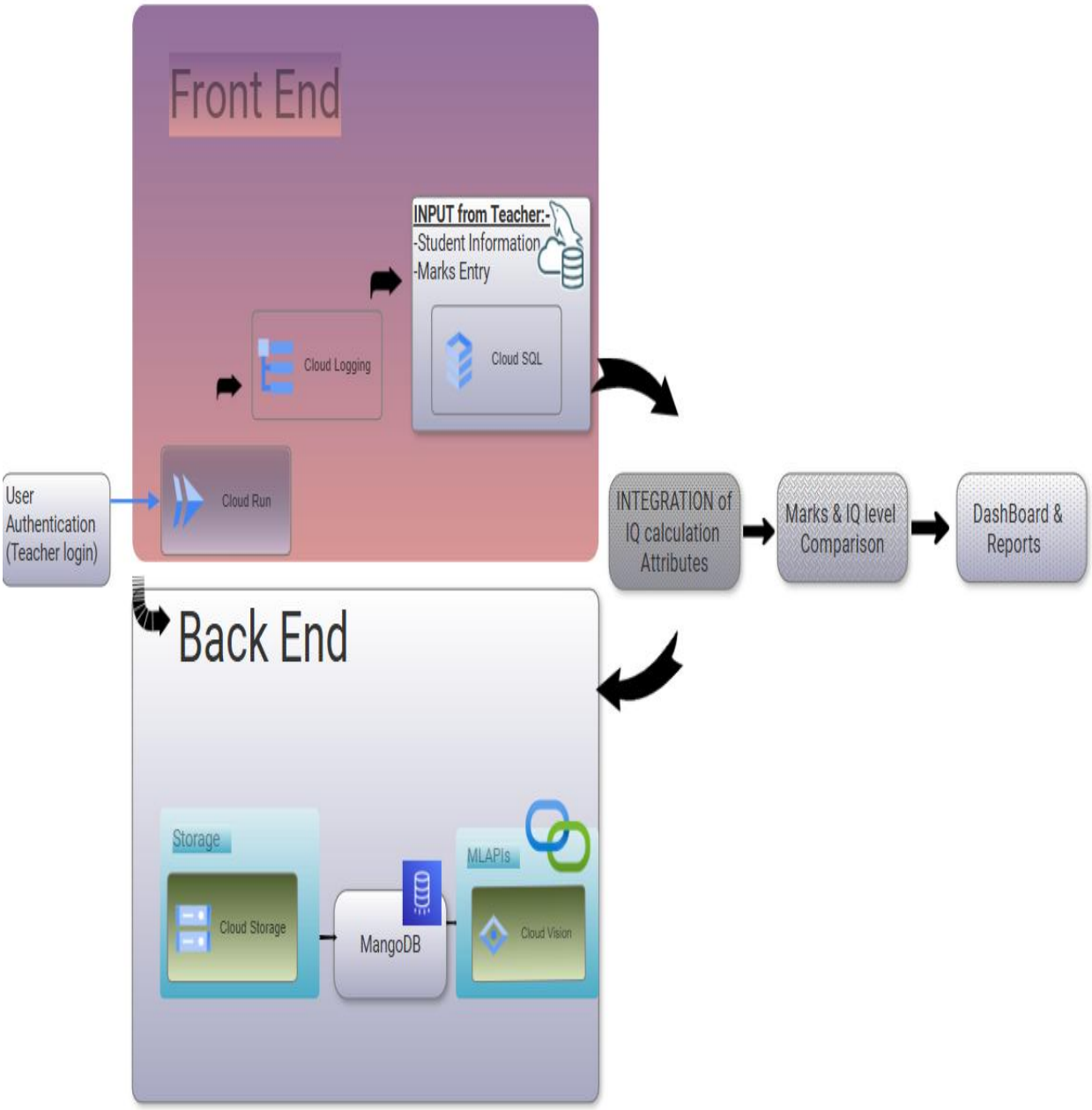


Figure 2.1

The system architecture where the Front End collects student information and marks from teachers, stores it using Cloud SQL, and handles authentication through Cloud Run. The Back End manages data storage with MongoDB and supports additional processing using Cloud Storage and Cloud Vision ML APIs. The system integrates IQ calculation attributes, compares marks with IQ levels, and presents the results via a Dashboard and Reports.

CHAPTER IV

SYSTEM IMPLEMENTATION

Hardware/Software Integration:

In our project, hardware and software components work closely together to ensure smooth operation, data flow, and user interaction. The software part is responsible for collecting data, calculating IQ, and displaying results, while the hardware mainly supports server deployment, cloud storage, and device access.

- Hardware Integration:
    - Cloud Servers are used to host the database and storage systems (Cloud Storage).
    - Teacher Devices (Laptops, Tablets) are used to access the website, input marks, and view dashboards.
    - Internet Connectivity is essential for communication between the front-end (browser) and back-end servers.
- Software Integration:
    - Front-End Technologies (HTML, CSS, JavaScript) build the interface where teachers log in and upload marks.
    - Back-End Technologies (Python, Flask/Django) manage data flow, authentication, and business logic.
    - Database (DB, Cloud SQL) securely stores student data, marks, IQ calculations, and reports.
    - Cloud Services (Cloud Run, Cloud Vision APIs) handle data processing, storage, and intelligence functions.

Together, these hardware and software elements ensure a reliable, secure, and user-friendly system.

Description of Working Modules:

The project is divided into several key modules, each responsible for specific functions:

1. User Authentication Module (Login/Signup)

- Purpose: Allow only authorized teachers to log into the system.
- Tools Used: HTML forms for input, Python (Flask/Django) for backend login verification.
- Working:
    - Teachers enter their credentials.
    - Server verifies against stored records.
    - If authenticated, they are redirected to the mark entry dashboard.

2. Student Data and Marks Upload Module

- Purpose: Enable teachers to input student information and marks.
- Tools Used: HTML Forms, JavaScript for input validation.
- Working:
    - Teachers enter details such as student name, age, class, and subject marks.
    - Data is validated and then sent to the backend.
    - Backend stores this information securely in the database.

3. IQ Calculation Module

- Purpose: Automatically calculate IQ based on the uploaded marks.
- Formula Used:

  IQ = (Intelligence Age / Chronological Age) × 100
- Working:
    - Marks are analyzed and intelligence age is determined.
    - IQ is calculated in real-time after each test entry.
    - Results are stored and linked with the student's profile.

4. Data Storage and Management Module

- Purpose: Store all data securely and retrieve when needed.
- Tools Used: MySQL, Cloud SQL.
- Working:
    - Student profiles, marks, and IQ scores are saved.
    - Data is organized for easy access and future analysis.
    - Redundancy and backup systems protect against data loss.

5. Dashboard and Reporting Module

- Purpose: Display progress reports, IQ trends, and performance graphs.
- Tools Used: HTML, CSS (Bootstrap for styling), JavaScript for dynamic charts.
- Working:
    - Teachers can view individual or batch-wise progress reports.
    - IQ trends are visually represented to understand growth patterns.
    - Easy download/export options are available for reports.

6. Cloud Integration Module

- Purpose: Enhance scalability, reliability, and real-time data processing.
- Tools Used: Cloud Storage, Cloud Vision API, Cloud Run.
- Working:
    - Cloud Vision APIs can assist in analysing uploaded data (e.g., scanned test sheets).
    - Cloud Run ensures the backend services are available 24/7.
    - Cloud Storage backs up important documents and reports securely.

Implementation Photos:

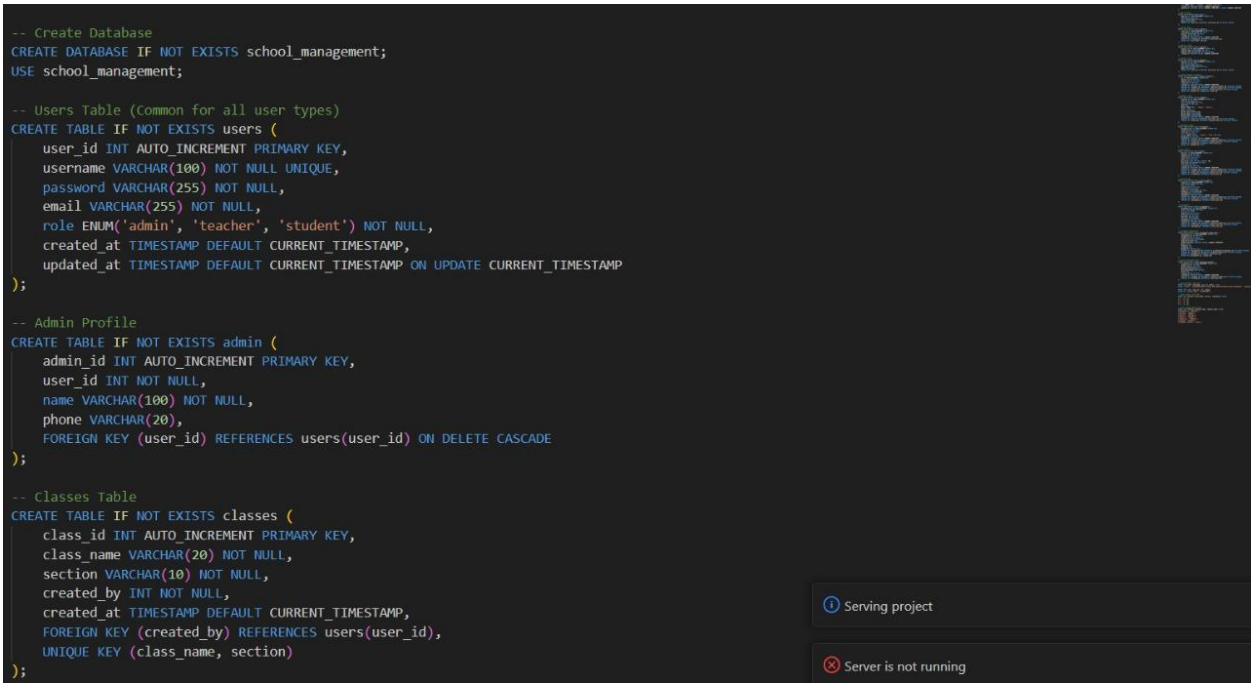


Figure 3.0

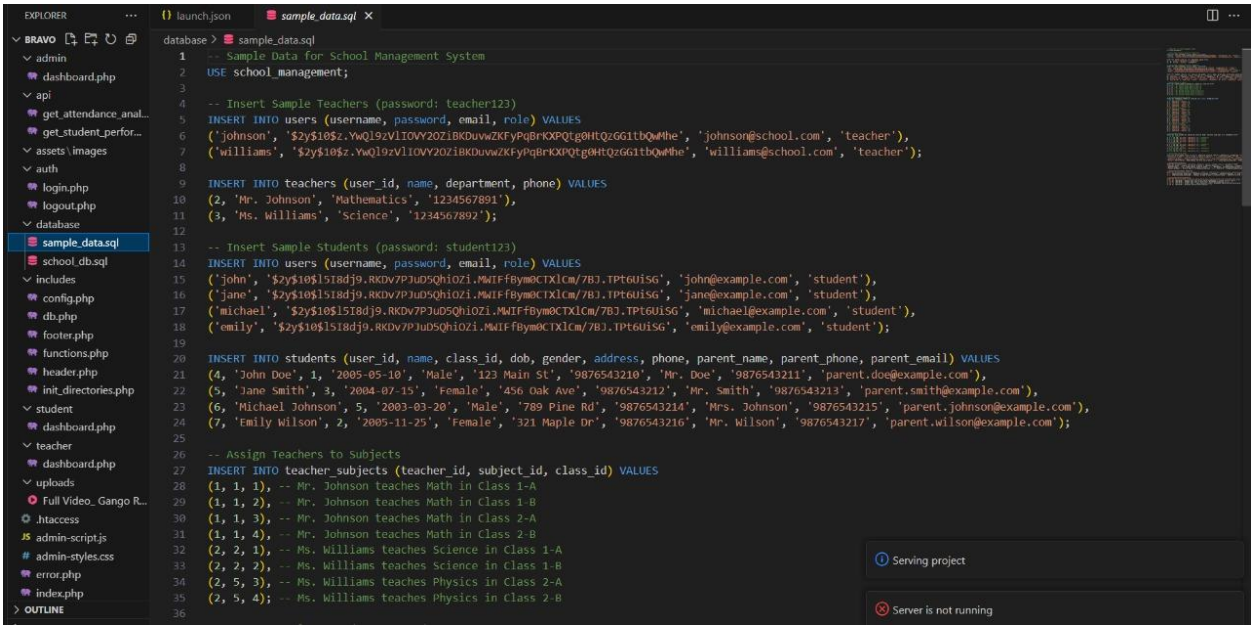


Figure 3.1

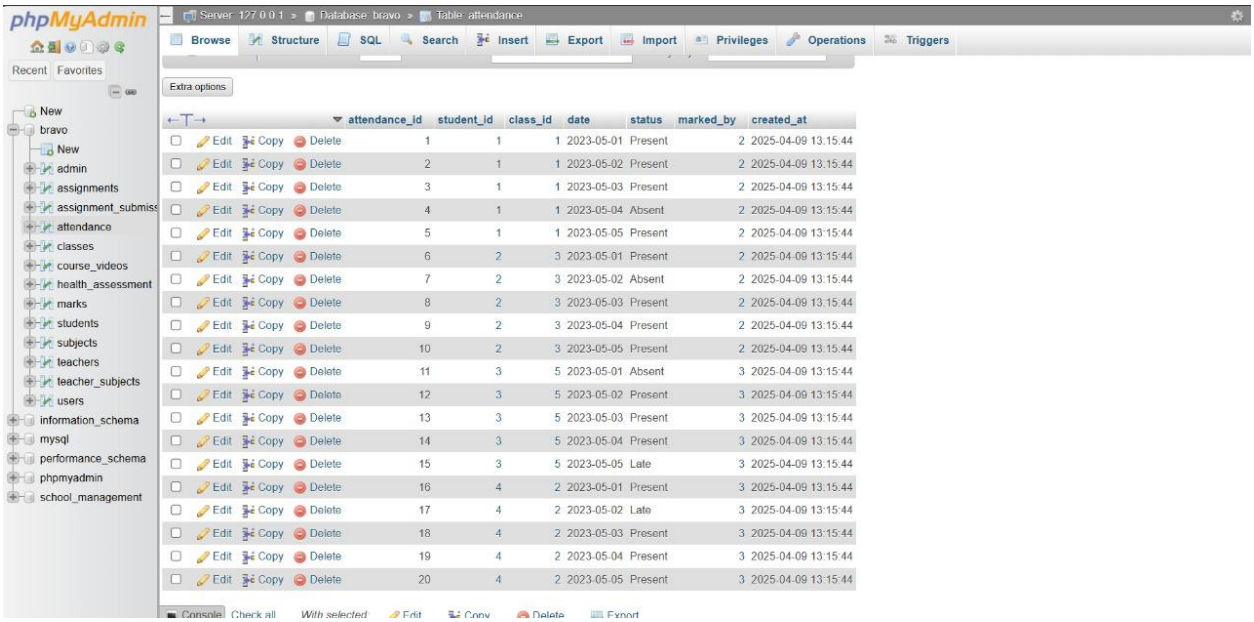


Figure 3.2

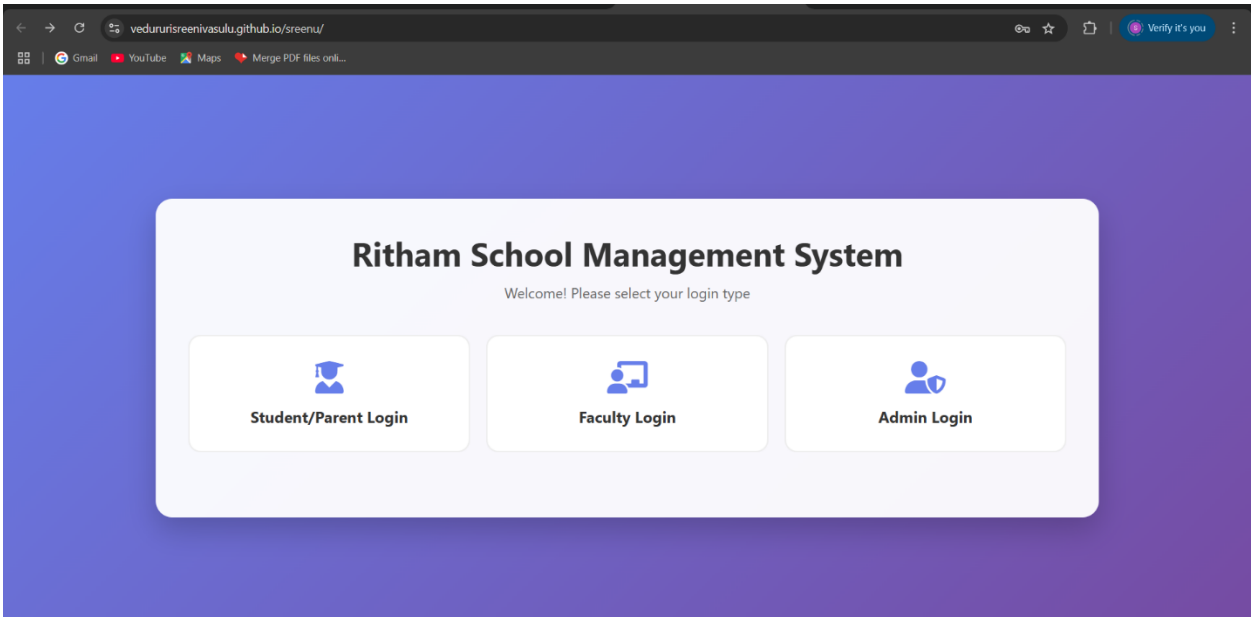


Figure 3.3

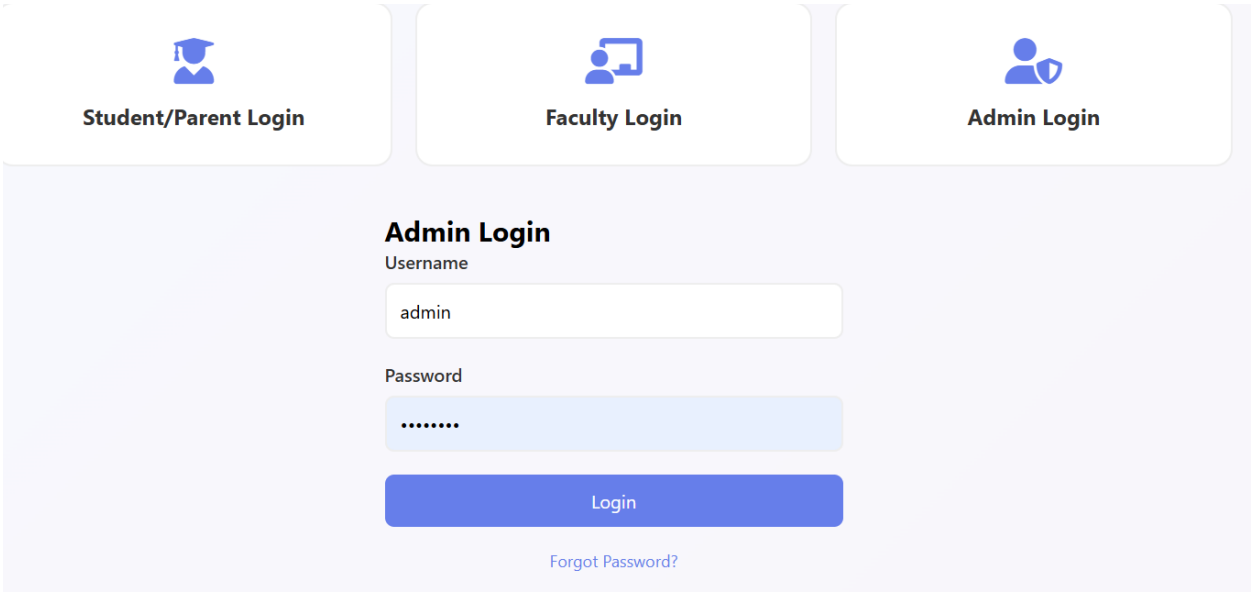


Figure 3.4

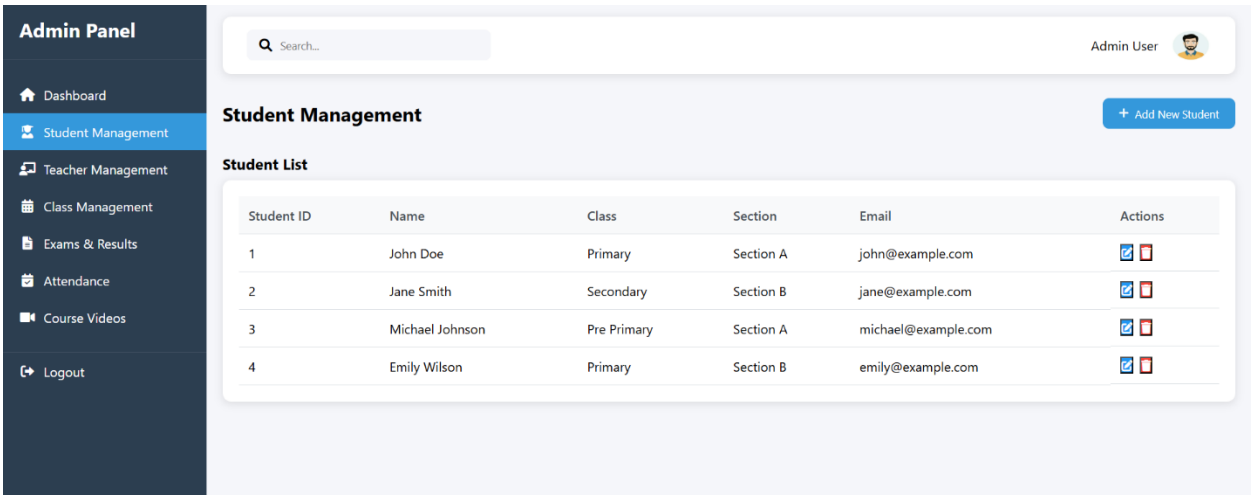


Figure 3.5

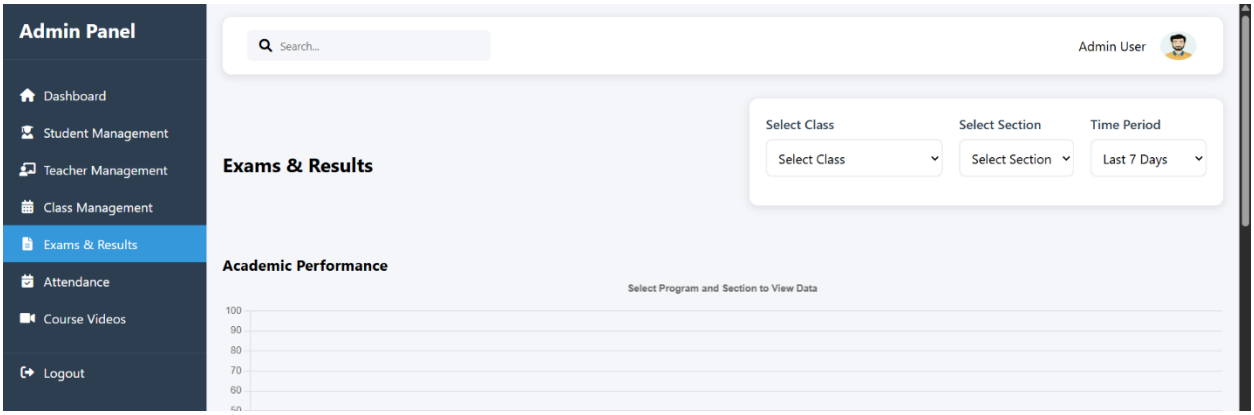


Figure 3.6

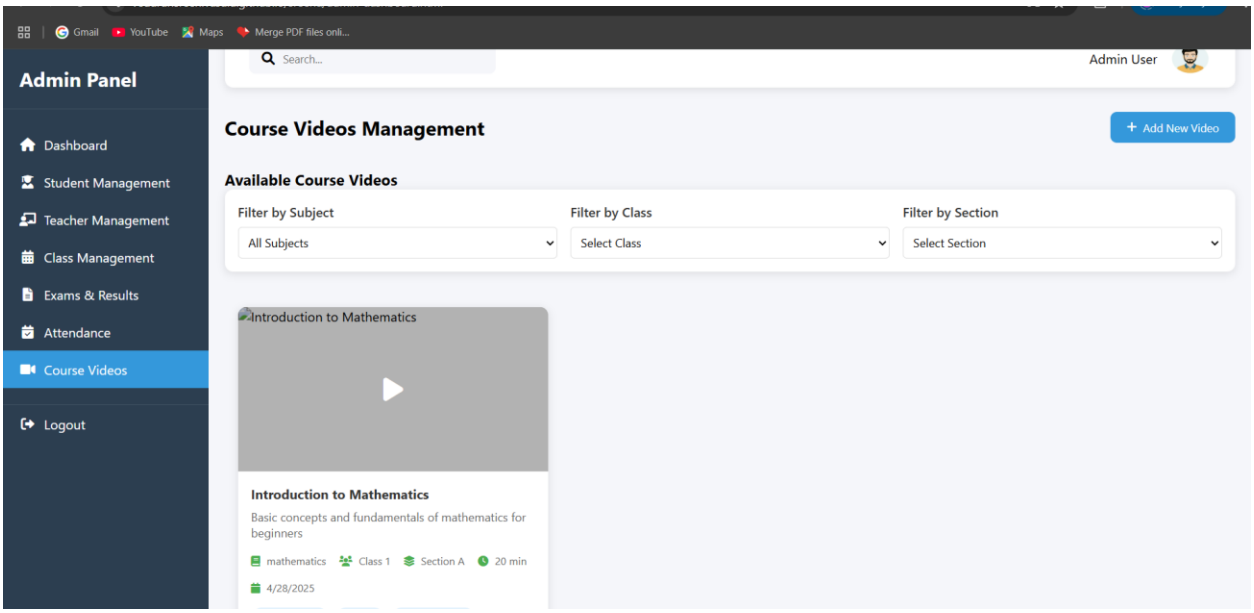


Figure 3.7

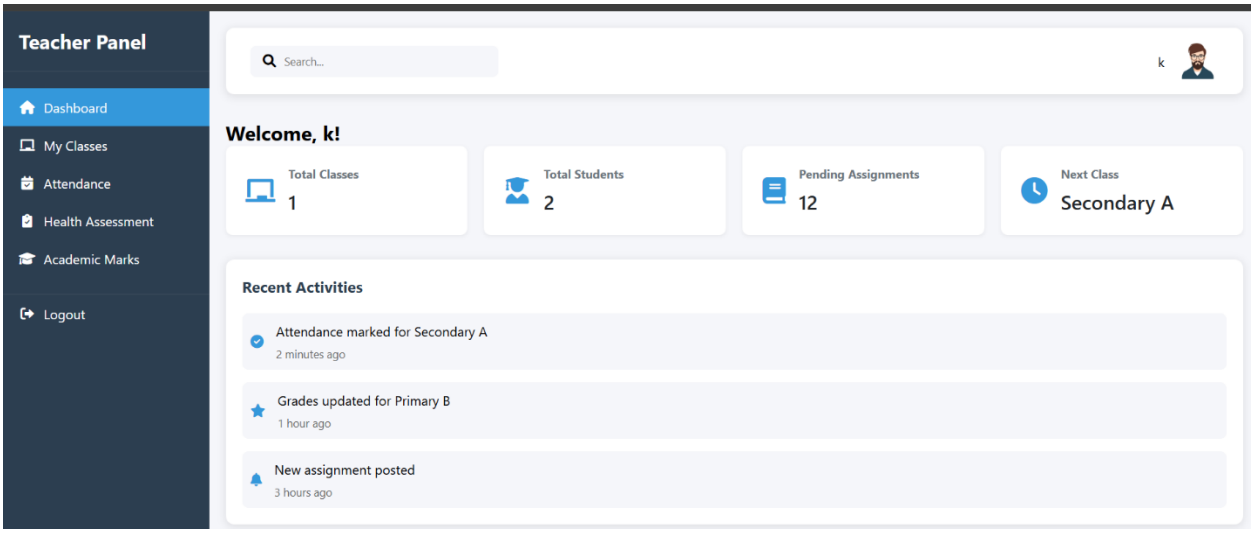


Figure 3.8

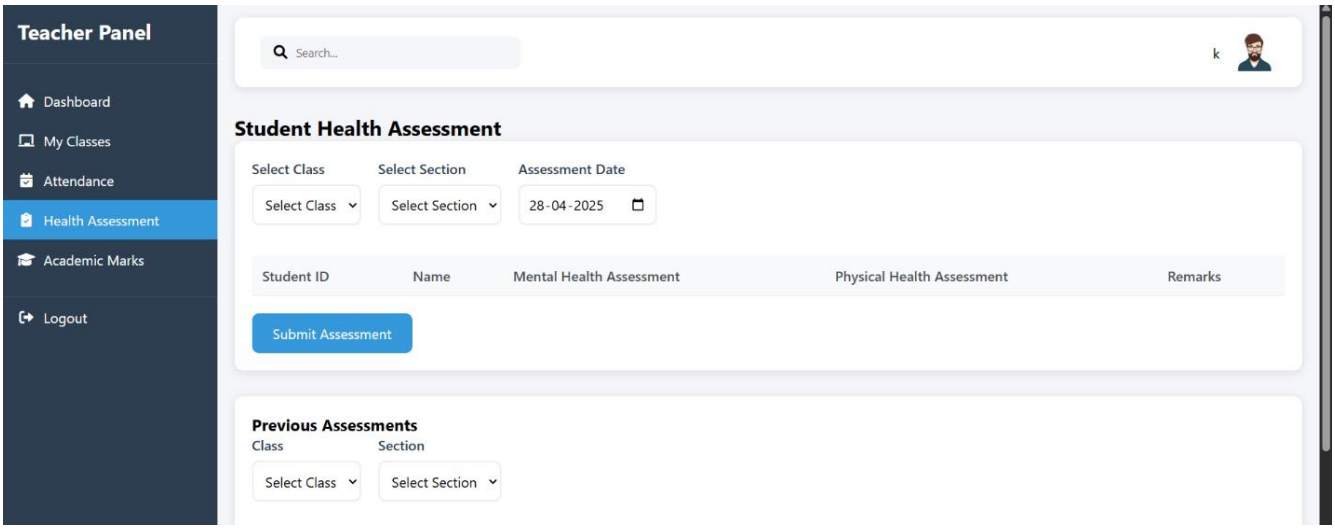


Figure 3.9

CHAPTER V

RESULTS AND DISCUSSION

RESULTS:

The developed student portal system provides a comprehensive and user-friendly platform for managing both academic and health information of students. The Academic Results module displays the student's overall academic performance, including the average grade, the highest mark achieved, and the overall average percentage. In the sample output, the average grade achieved is "A," with the highest score being 92 and an overall average of 85.8%. Additionally, subject-wise performance is shown clearly, listing marks obtained in individual subjects like History, English, Science, and Mathematics along with the class average and corresponding grade. This presentation of data allows both students and teachers to easily track academic progress and identify subjects that may need improvement.

In the Health Assessment module, the system evaluates and displays both mental and physical health scores. As shown in the outputs, the student's mental and physical health conditions are rated as "Excellent." The portal also maintains a history of health assessments, helping track changes over time. For instance, earlier assessments noted improvements in mental health from "Good" to "Excellent," demonstrating the portal's effectiveness in monitoring student well-being. The remarks section further provides valuable feedback about the student's overall health status and participation levels.

Overall, the system successfully integrates academic tracking with health monitoring, ensuring that both educational and personal development aspects of students are considered. By presenting data in a clear, organized, and accessible manner, the portal enhances communication between students, teachers, and parents, and provides a reliable platform for ongoing performance and health evaluation.

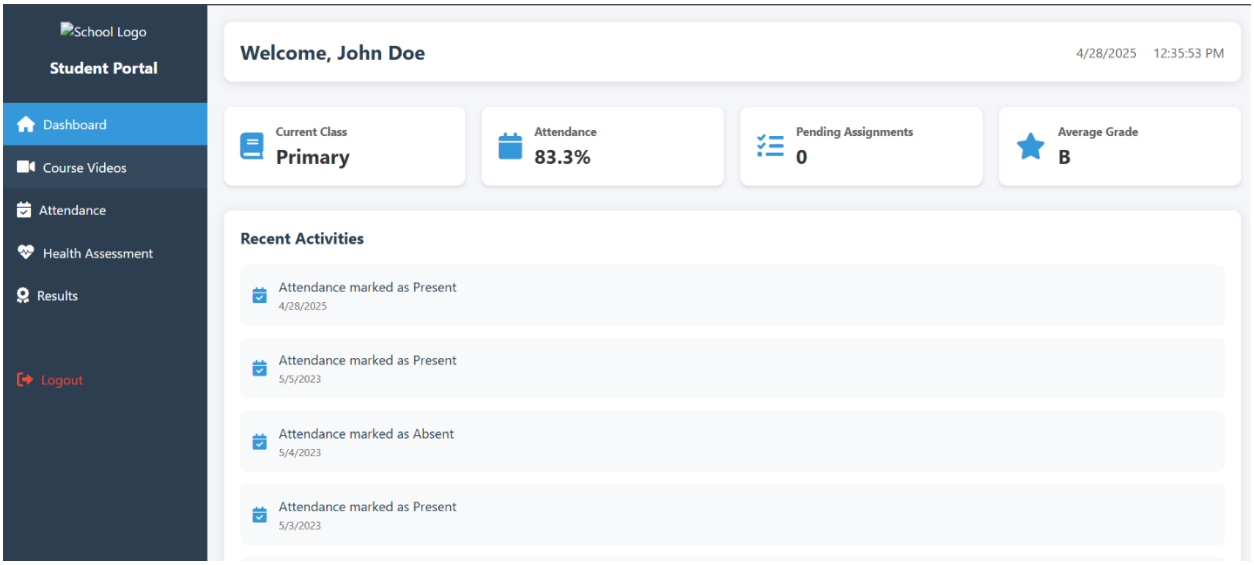


Figure 4.0

Result:

The Academic Results page shows the student's overall academic performance. The system automatically calculates and displays the Average Grade (A), the Highest Marks (92), and the Average Percentage (85.8%). It also provides a subject-wise breakdown where marks in different subjects like History, English, Science, and Mathematics are recorded. Each subject shows the student's marks, the class average, and the individual grade.

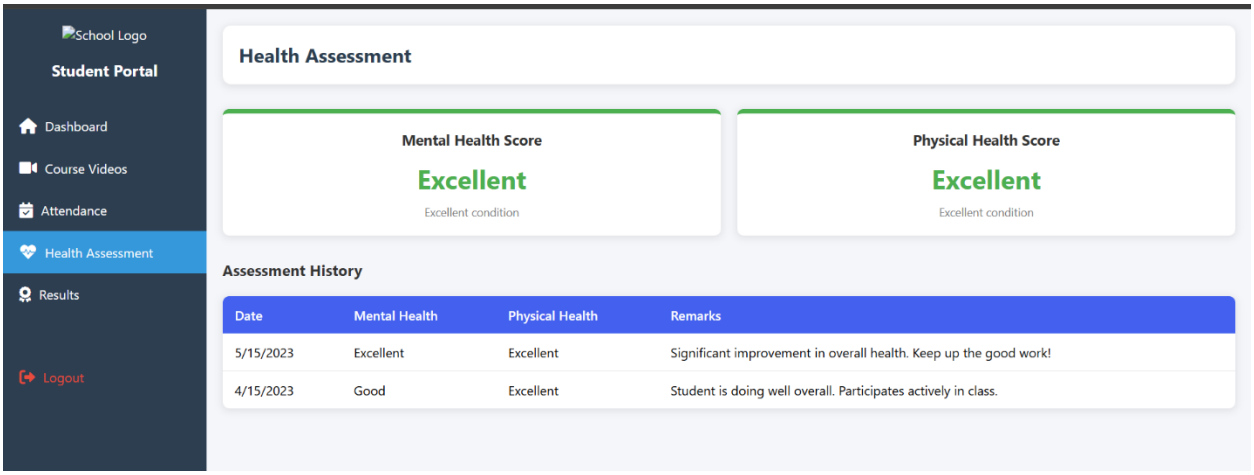


Figure 4.1

Result:

The Health Assessment page evaluates and displays the student's Mental Health Score and Physical Health Score. In the results shown, both mental and physical health are marked as Excellent.

The page also maintains a history of assessments that records earlier evaluations. It displays the health scores over time along with remarks such as "Significant improvement in overall health" and "Student is doing well overall".

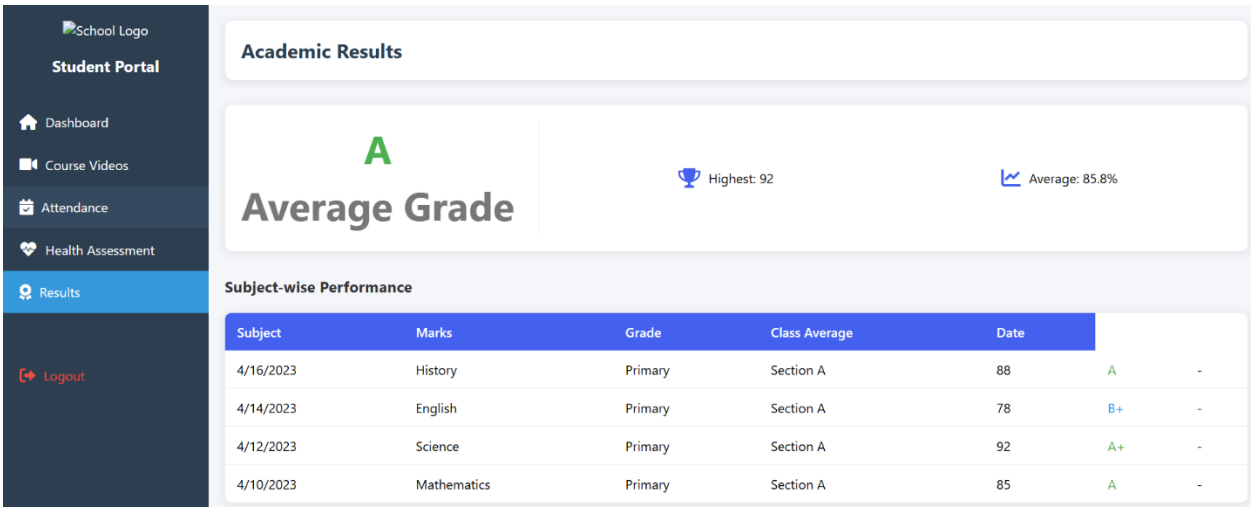


Figure 4.2

Result:

The Academic Results section shows that the student achieved an excellent average grade of "A", with the highest score being 92 and an overall average of 85.8%. The marks in individual subjects like History, English, Science, and Mathematics are displayed along with the grades and class averages. This organized presentation helps students easily track their academic performance and identify subjects where they excel or need improvement.

DISCUSSION:

The Academic Results page provides a clear overview of a student's performance across different subjects. By displaying important details such as subject name, marks scored, grade obtained, class average, and date, it helps both students and teachers to monitor progress effectively. The overall average grade "A" and the highest score of 92 indicate that the student is performing well academically. The color-coded grades (e.g., A, B+) make it easy to quickly assess strengths and areas needing attention. This type of dashboard supports continuous improvement by allowing timely feedback and guidance for better academic outcomes.

CONCLUSION

Conclusion:

The project successfully developed a secure and user-friendly school management system that tracks the academic performance and IQ levels of mentally ill children. Key achievements include a responsive interface, safe data handling, and personalized educational insights. The team learned full-stack development, database management, and the impact of technology on inclusive education. In the future, the system can be enhanced with AI-based learning suggestions, mobile app support, and gamified assessments. This platform lays the foundation for smarter, more inclusive, and data-driven special education.

KeyAchievements:

The project successfully developed a comprehensive School Management System with an Integrated Learning Platform aimed at supporting mentally ill children through academic tracking and IQ monitoring. By using a combination of HTML, CSS, JavaScript, Python (Django) for development and MySQL/MongoDB for secure data storage, the system achieved a user-friendly, scalable, and secure platform. Key functionalities like attendance tracking, academic performance monitoring, syllabus-based educational video hosting, and individual IQ evaluation were implemented efficiently. The project has positively impacted how educators can monitor students' intellectual growth over time, offering tailored interventions and fostering greater inclusivity within the school environment.

Learnings:

Throughout the course of the project, the team learned the importance of user-cantered design, especially when creating educational tools for special needs students and non-technical users like teachers. They gained practical experience in full-stack web development, cloud integration, secure database management, and designing accessible, responsive interfaces. Furthermore, they understood how academic performance can be systematically linked to IQ level estimation and how data-driven tools can support early educational interventions. Collaboration, problem-solving, and applying technology to real-world social issues like mental health education were significant learnings from this project.

Futurescope:

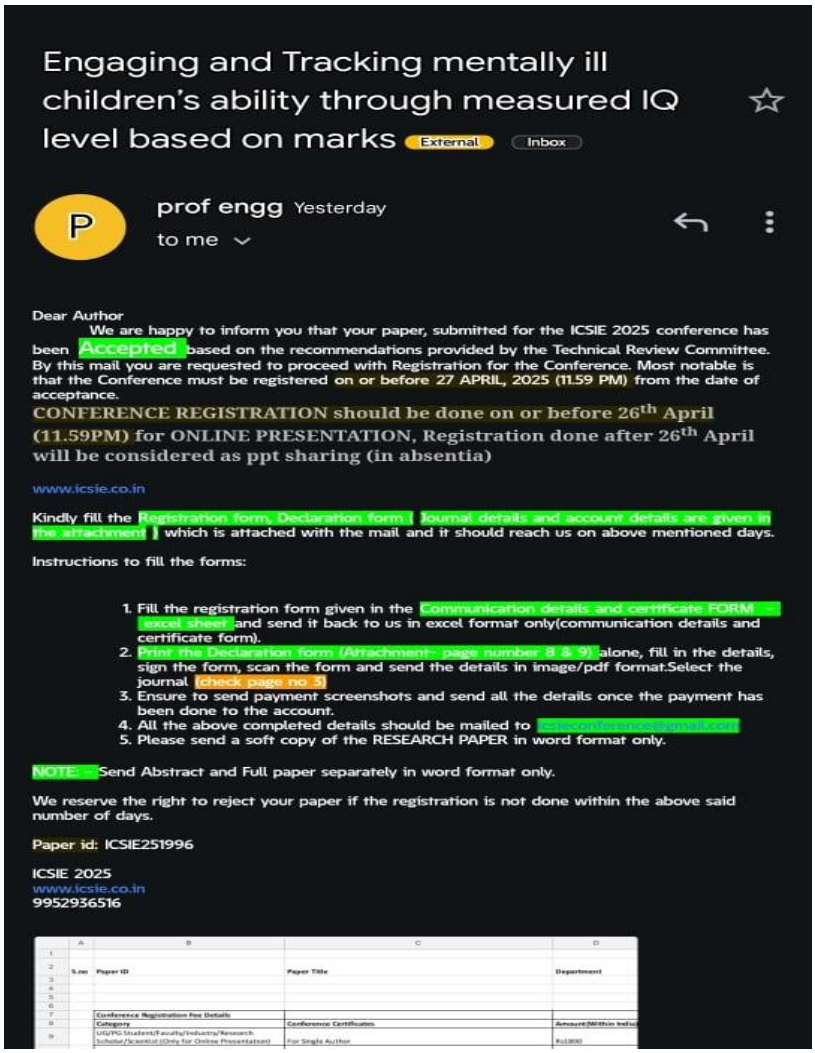
In the future, the system can be enhanced by integrating AI and Machine Learning algorithms to provide personalized learning recommendations and predictive analytics for student growth. Expanding the platform into a mobile application would improve accessibility for remote areas. Adding gamified learning modules, speech recognition, and visual aids can make the platform more engaging and inclusive for children with more severe disabilities. Partnering with schools, therapists, and healthcare providers could broaden the impact, creating a more holistic support ecosystem for mentally ill children. Long-term data collection will also allow for deeper trend analysis, leading to better educational planning and policy-making.

REFERENCES

1. Armstrong, L. L., & Watt, E. (2025). Meaning mindset theory: a transdiagnostic approach to mental health promotion and intervention for children. *Frontiers in Psychology*, 15, 1467332.(https://doi.org/10.3389/fpsyg.2024.1467332)
2. Mittal, M. M., Singh, A. (2025). Do Children With Accidental Gunshot-related Fractures Experience Greater Risk of Mental Illness and Psychiatric Disorders? *Clinical Orthopaedics and Related Research®*, *483*(2), 186–193. (https://doi.org/10.1097/CORR.0000000000002910)
3. Lin, K., & Mak, L. (2025). Urbanization and mental health in left-behind children: systematic review and meta-analysis. *Pediatric Research*. (https://doi.org/10.1038/s41390-024-03149-w)
4. Chiba, R., & Miyamoto, Y. (2025). Benefit Finding and Growth Among Family Caregivers of Individuals With Mental Illness: A Scoping Review. *Journal of Family Nursing*. (https://doi.org/10.1177/10748407241309138)
5. Mitiku, K. W., & Tegegne, E. (2024). Mental illness in children and its determinants in Ethiopia: a systematic review and meta-analysis.*Clinical Child Psychology and Psychiatry*, 29(1), 168–186. (https://doi.org/10.1177/13591045231182109)
6. Sheldon, F. H., & Barr, B. (2023). Maternal mental ill health and adolescent mental health: Millennium Cohort Study analysis. *Journal of Epidemiology and Community Health*, 77(8), 534–540. (https://doi.org/10.1136/jech-2022-219739)
7. Hilton, R. A., & Tozzi, L. (2024). Transdiagnostic neurocognitive dysfunction in children and adolescents with mental illness. *Nature Mental Health*, 2(3), 299–309. (https://doi.org/10.1038/s44220-024-00112-7)
8. Sharma, P., & Malhotra, N. (2024). Mental Illness Leading to Homelessness in Adolescents and Reintegration with Families: A Case Series. *Indian Journal of Social Psychiatry*, 40(3), 307–310. (https://doi.org/10.4103/ijsp.ijsp_45_24)
9. Qin, X., & Lu, J. G. (2024). Artificial Intelligence Quotient (AIQ). *SSRN Electronic Journal*. (https://doi.org/10.2139/ssrn.4787320)
10. Li, J., & Ju, S. Y. (2024). Development of a digital intelligence quotient scale for primary school students. *Heliyon*, 10(16), e17806. (https://doi.org/10.1016/j.heliyon.2024.e17806)

11. Shi, S., & Chen, Y. (2024). Evaluating the associations between intelligence quotient and multi-tissue proteome from the brain, CSF and plasma. *Brain Communications*, 6(4), fcae207. (https://doi.org/10.1093/braincomms/fcae207)
12. Bouzaher, M. H., & Wu, S. (2024). Intelligence quotient testing in children with hearing loss: a systematic review. *American Journal of Otolaryngology*, 45(3), 104219. (https://doi.org/10.1016/j.amjoto.2024.104219)
13. Huang, Y., & Luo, F. (2025). Maternal sleep disturbance during pregnancy and child intelligence quotient. *Journal of Child Psychology and Psychiatry*. (https://doi.org/10.1111/jcpp.13826)
14. Li, X., & Wei, W. (2025). Individualized prediction of multi-domain IQ in bipolar disorder patients.. (https://doi.org/10.1016/j.brainresbull.2024.111238)
15. Mangal, D., & Gupta, R. (2025). Effects of Different Genres of Electronic Games on Spatial Skills and Intelligence Quotient of Undergraduate Students. *Medical Journal of Dr. DY Patil Vidyapeeth*, 18(1), 58–63. (https://doi.org/10.4103/mjdrdypu.mjdrdypu_167_24)
16. Santosa, A., & Fajri, R. N. (2025). Impact of Anemia on Academic Indicators: IQ, Academic Potential, Study Concentration. *Proceedings Series on Health & Medical Sciences*, 6, 80–84. (https://doi.org/10.2991/ahsr.k.240408.017)
17. Suwiyanto, A. (2025). Correlation Between IQ and Student Listening Comprehension. *Doctoral Dissertation, UIN Sultan Maulana Hasanuddin Banten*. [No DOI available]
18. Huang, Y., & Luo, F. (2025). Maternal sleep disturbance during pregnancy and child intelligence quotient: a metabolome-wide association study. *Journal of Child Psychology and Psychiatry*. (https://doi.org/10.1111/jcpp.13826)

Paper Acceptance:



Engaging and Tracking mentally ill children's ability through measured IQ level based on marks External Inbox

prof engg Yesterday
to me

Dear Author

We are happy to inform you that your paper, submitted for the ICSIE 2025 conference has been Accepted based on the recommendations provided by the Technical Review Committee. By this mail you are requested to proceed with Registration for the Conference. Most notable is that the Conference must be registered on or before 27 APRIL, 2025 (11.59 PM) from the date of acceptance.

CONFERENCE REGISTRATION should be done on or before 26th April (11.59PM) for ONLINE PRESENTATION, Registration done after 26th April will be considered as ppt sharing (in absentia)

www.icsie.co.in

Kindly fill the Registration form, Declaration form (Journal details and account details are given in the attachment) which is attached with the mail and it should reach us on above mentioned days.

Instructions to fill the forms:

1. Fill the registration form given in the Communication details and certificate FORM - excel sheet and send it back to us in excel format only(communication details and certificate form).
2. Print the Declaration form (Attachment- page number 8 & 9) alone, fill in the details, sign the form, scan the form and send the details in image/pdf format.Select the journal (check page no 5)
3. Ensure to send payment screenshots and send all the details once the payment has been done to the account.
4. All the above completed details should be mailed to [redacted]
5. Please send a soft copy of the RESEARCH PAPER in word format only.

NOTE: - Send Abstract and Full paper separately in word format only.

We reserve the right to reject your paper if the registration is not done within the above said number of days.

Paper id: ICSIE251996

ICSIE 2025
www.icsie.co.in
9952936516

S.no	Paper ID	Paper Title	Department
Conference Registration Fee Details			
Category		Conference Certificates	Amount(Within India)
UG/PG Student/Faculty/Industry/Research Scholar/Scientist (Only for Online Presentation)		For Single Author	Rs1800

Paper id: ICSIE251996

The Research paper has been accepted for presentation at the International Conference on Sustainable Innovations in Engineering (ICSIE) 2025. The acceptance was based on the recommendations of the Technical Review Committee. ICSIE 2025 offers a platform for researchers to showcase innovations in engineering and technology

Plagiarism:

Plagiarism Detector .net

Apr 28, 2025

Plagiarism Scan Report

0% Plagiarized

100% Unique

Characters:4362

Words:634

Sentences:31

Speak Time: 6 Min

0% Exact Matched

0% Partial Matched

Excluded URL None

Content Checked for Plagiarism

Activity Engagement Platform - Create an engineering-based approach to engage residents, including old people and mentally ill children, in activities that are enjoyable and stimulating, accommodating their diverse ages and abilities. Children born with mental illnesses often face significant challenges in traditional educational systems that are not designed to support their unique learning needs. Without proper monitoring and personalized intervention, their intellectual abilities and academic potential may go unnoticed or underdeveloped. Existing methods lack structured systems that connect academic performance, such as test marks, with cognitive growth indicators like IQ levels. This gap makes it difficult for educators and caregivers to accurately assess the progress of mentally ill children, plan effective teaching strategies, and provide timely support. There is a strong

The plagiarism report shows that the research paper is 100% unique with 0% exact match and 0% partial match. No copied content was found, and the document is fully original.