EDU-PREDICT (BigData)

COMMITTED TO TRANSFORMING EDUCATION THROUGH DATA ANALYTICS

OUR TEAM

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INTRODUCTION TO EDU PREDICT

- The need for real-life project implementation in IT education.
- In today's IT education landscape, theoretical knowledge alone is no longer sufficient—real-life project implementation is essential to bridge the gap between learning and industry needs.
- EduPredict emerges as a solution-focused initiative designed to integrate data analytics concepts within a live, interactive learning environment.
- By guiding students through a step-by-step application of theory into practice, EduPredict enhances both technical competency and critical problem-solving skills.
- This hands-on approach not only deepens understanding but also prepares learners for real-world challenges in educational and analytical domains.
- Introducing EduPredict, a project aimed at applying concepts using live, synchronous learning environments.
- The importance of applying theoretical knowledge in a practical, step-by-step approach.

OBJECTIVES OF EDUPREDICT

The primary goal of EduPredict is to provide students with immersive, practical experience in developing robust applications by simulating real-world scenarios. This experiential approach encourages learners to revisit, refine, and apply the tools and techniques they've acquired in a meaningful, project-based context. By structuring the learning journey into clear, progressive phases, EduPredict fosters a deeper understanding of core IT concepts while building confidence and competence. Ultimately, it adds substantial value to students' education by promoting hands-on learning, critical thinking, and real-time problem-solving.

Bridge Theory and Practice	Enable students to apply data analytics and IT concepts in real-world educational scenarios through practical, hands-on projects.
Enhance Skill Development	Develop critical thinking, problem-solving, and technical skills by engaging learners in live, synchronous learning environments.
Promote Data-Driven Decision Making in Education	Equip students and educators with tools and insights to make informed decisions using predictive analytics in academic settings.

Problem Statement

- Education institutions worldwide face numerous challenges, such as declining student retention rates, inefficient resource allocation, and the need to personalize learning experiences.
- At the same time, advancements in technology and data availability present significant opportunities to address these challenges through data-driven approaches.
- By leveraging the capabilities of Hadoop and predictive analytics, EduPredict aims to overcome these challenges, capitalize on data-driven opportunities, and ultimately enhance the educational experience for the students.

SOLUTION OVERVIEW

GOAL 1

Predict student performance using data-driven methodologies to support early intervention and academic success.

GOAL 2

Optimize course design and delivery by analyzing learning patterns, engagement metrics, and academic outcomes.

GOAL 3

Empower educators and stakeholders with real-time insights through machine learning and data visualization tools to enhance decision-making.

SOFTWARE WE USE

Develop

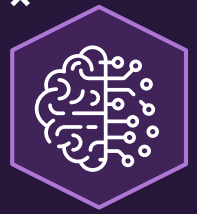
Jupyter: Analysis

Anaconda: Distribution

RStudio: Statistics

Visual Studio Code: Editing

PyCharm: Development



Query

Impala Server: for Querying

Data

MongoDB Compass: GUI

Hadoop: Storage

Tableau: Visualization

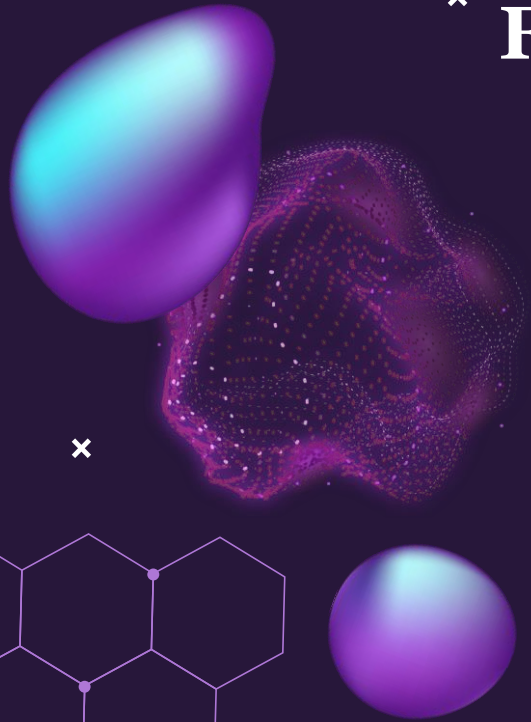
Tools

Spark: Fast Processing

Kafka:Real-time stream

Matplotlib/
Seaborn/
Ploty: Python Based work

FUNCTIONAL REQUIREMENT



- User Authentication and Authorization
- Data Ingestion
- Data Storage
- Data Processing
- Real-time Data Processing
- Machine Learning Models
- Data Visualization
- Notifications and Alerts
- Feedback and Support

NON-FUNCTIONAL REQUIREMENT

- Performance
- Data Security
- Data Integrity
- Reliability
- Scalability
- Performance Monitoring
- Compliance and Standards
- Documentation

OUR ASPIRATIONS

NOW

EDU-PREDICT harnesses real-time data streaming to process educational data—such as attendance, performance, and engagement—as it happens. This empowers educators and administrators with instant, actionable insights. By enabling immediate analysis, the system supports timely interventions, like identifying at-risk students early and addressing issues before they escalate.

FUTURE

Looking ahead, EDU-PREDICT aims to evolve into an AI-driven platform that not only analyzes performance but also personalizes learning pathways for each student. We envision expanding globally, integrating predictive career guidance, and partnering with institutions to transform education through data. By continuously innovating, we strive to shape a future where every student's potential is not just measured—but maximized.

REAL-TIME DATA PROCESSING

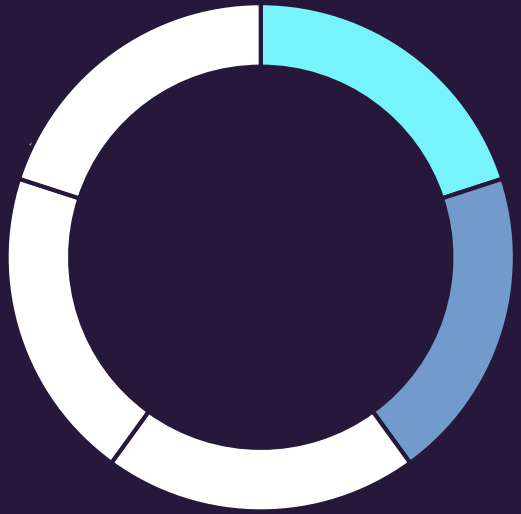
Integrate real-time data streaming capabilities

Real-time data processing empowers systems to handle and analyze information instantly as it is generated. By integrating real-time streaming, EDU-PREDICT can monitor student performance, attendance, and engagement live. This allows educators to make prompt, informed decisions and respond quickly to emerging issues. Real-time insights enable proactive interventions, improving academic outcomes and institutional efficiency.

Ensure seamless integration with batch processing for a comprehensive analysis

While real-time data provides immediate insights, batch processing ensures deeper, historical analysis of large datasets. Seamlessly combining both allows EDU-PREDICT to balance speed with depth—offering instant feedback alongside long-term trends. This hybrid approach supports strategic planning and day-to-day responsiveness. It ensures a complete, data-driven understanding of student and institutional performance.

Machine Learning Models



- Develop machine learning models for predictive analysis of student performance, dropout rates,
and course demand.
- Include algorithms for anomaly detection, trend prediction, and correlation analysis. Regularly update and refine models based on the latest available data.

20% MLME1
20% MLME2
20% MLME3
20% MLME4
20% MLME5

DATA VISUALIZATION

Dashboard

Interactive dashboards present complex educational data in clear, visual formats. Users can quickly view key metrics like student performance, trends, and patterns through charts, graphs, and heat maps.

Alerts

The system highlights anomalies such as sudden grade drops or increased absenteeism. Visual cues flag issues early, enabling proactive interventions by educators and administrators.

Customizations

Dashboards are fully customizable, allowing each stakeholder to filter, drill down, and interact with data based on their specific roles and objectives. This ensures meaningful, role-based insights.

Notifications

EduPredict sends instant alerts when academic anomalies—like grade drops or attendance issues—are detected. This ensures timely intervention by teachers and administrators, supporting early corrective action.

AWESOME WORDS

> Data is a precious thing and will last longer than the systems themselves.
>
> —Tim Berners-Lee

System Reliability and Uptime

- Aim for 99% uptime with scheduled maintenance.
- Regular automated data backups to prevent data loss.

MAJOR REQUIREMENTS

SKILLS

Proficiency in using digital tools, dashboards, and interpreting analytics to enhance educational outcomes.

INTELLIGENCE

Ability to understand and interpret data-driven insights for smarter decision-making in academic environments.

ADAPTABILITY

Willingness to embrace new technologies and adjust strategies based on real-time feedback and trends.

FOCUS

Clear vision and goal-oriented mindset to prioritize student success and institutional growth through data.

Compliance & Standards

EduPredict strictly follows major data protection laws such as FERPA, GDPR, and institutional privacy guidelines. We ensure that student data is handled securely, with full transparency and user consent at every step.

Our platform aligns with educational data governance best practices to maintain high integrity and accountability. This ensures that all analytics and features operate within ethical, legal, and professional standards—building trust across all stakeholders.

PROJECT STAGES

DESIGN SPECIFICATIONS

Include problem definition, flowcharts, and data diagrams.

SOURCE CODE

Documenting all source code used in the project

TEST DATA

Provide test data and project installation instructions.

VIDEO DEMONSTRATION

Showcasing the working of the project.

PROJECT STRATEGY

Goal-Oriented Approach

User-Centered Design

Agile Methodology

Security & Compliance

OUR NUMBERS

50%

MANPOWER

30%

DEVELOPMENT

20%

EXPANSION

CONCLUSION

- Revolutionizes education by leveraging powerful data analytics.
- Empowers institutions to make smart, data-driven decisions.
- Enhance student learning with personalized, targeted experiences

OUR LOCATION

Aptect Computer Learning

North Nazimabad, Block ‘A’,
Near Board Office, Beside Froza
Banquet

THANKS!

DO YOU HAVE ANY QUESTIONS?

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