NIRMAAN

Solution Name: AI-Based System for Plagiarism Detection and Task Management for Students

Team Name: Tech Titans

By I2IC TPO VIIT

Team Member Details

TEAM NAME :	Tech Titans			
TEAM MEMBERS :	1(LEADER)	2	3	4
NAME :	Tejaswini Durge	Aniket Bansod	Akash Nachane	Soham Deshmukh

Problem statement

- **AI-Based System for Plagiarism Detection and Task Management for Students**

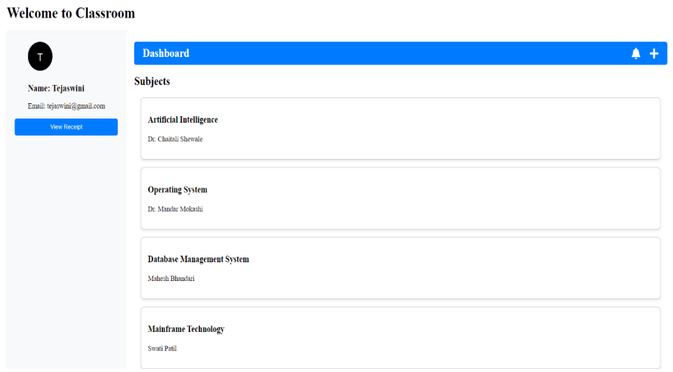
Overview of the Problem:

- Plagiarism Issues: Students increasingly submit copied assignments, undermining academic integrity.
- Time Constraints for Teachers. Originality checks done personally consume lot of time and are inefficient.
- Task Management Challenges: Lack of a streamlined system to track assignment submissions and handle defaulters effectively.
- It has administrative complexity due to the issuing of No Objection Certificates (NOC) for students whose assignments have been cleared.

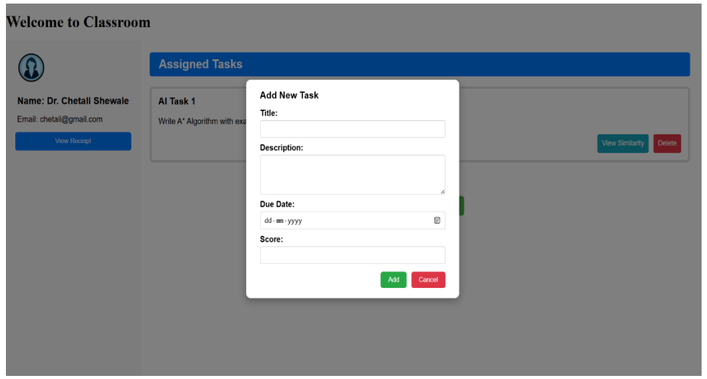
Proposed Solution

- A web-based platform where students upload their assignments.
- Create an AI plagiarism detection tool using algorithms like SentenceTransformer, all-MiniLM-L6-v2 and cosine similarity to pick up copied contents.
- Automatic NOC generation following plagiarism results eliminates administrative work loads.
- Implement a module for task management that will track submissions and ensure timely completion of assignments.

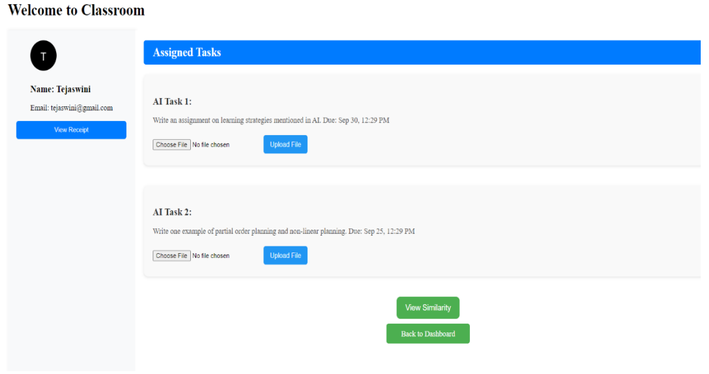
System Workflow



Dashboard

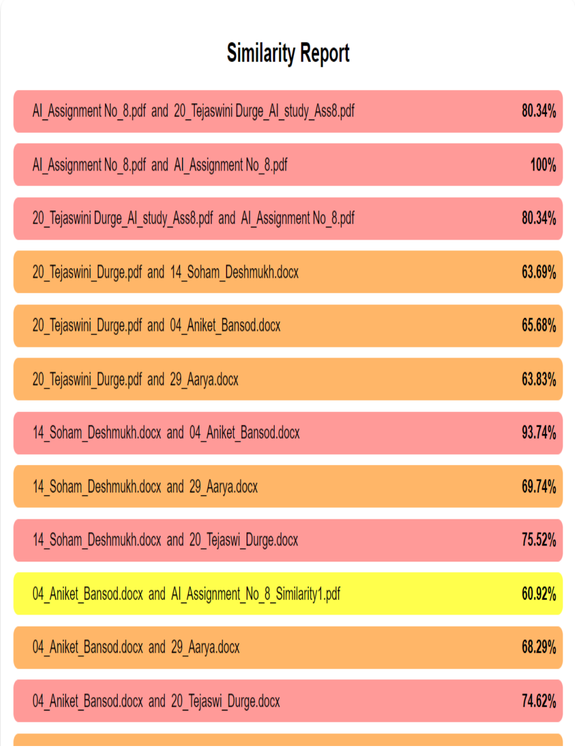


Add Task (view - Teacher)

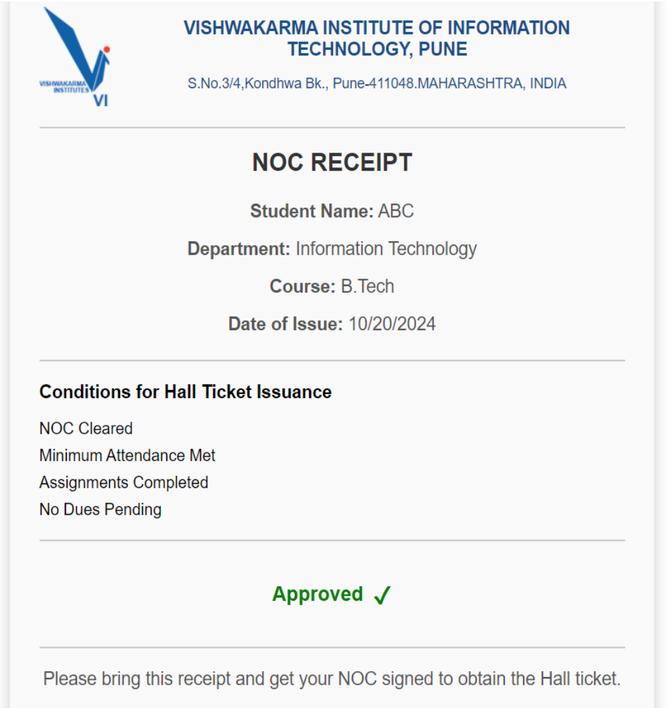


File Submission (view - Student)

System Workflow



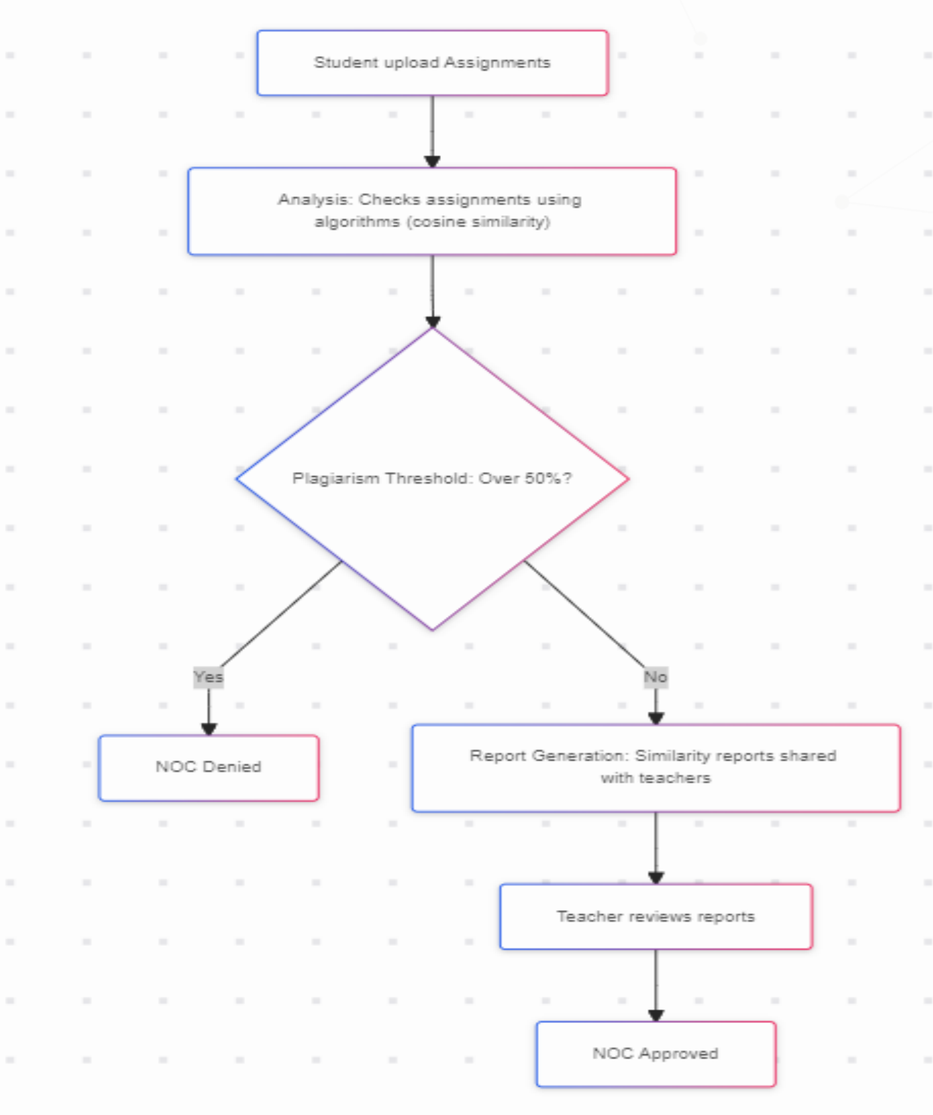
Similarity Report



Receipt Generation

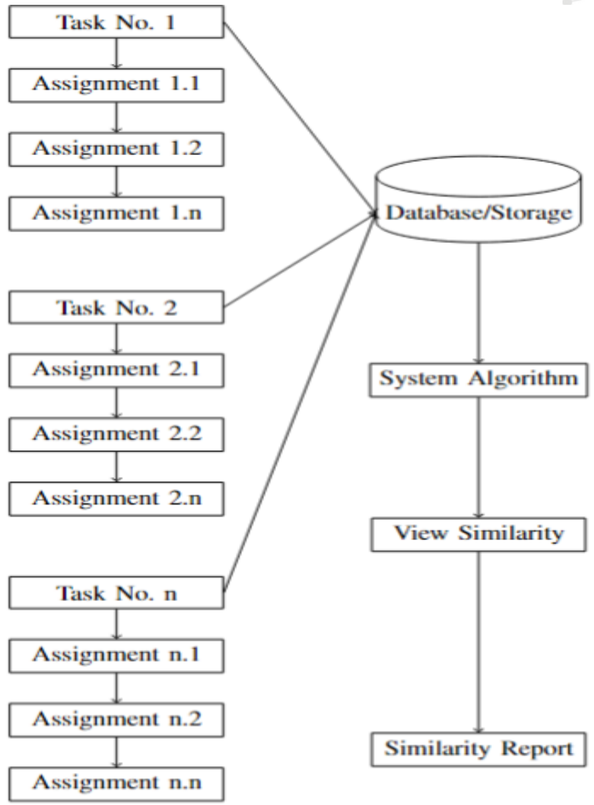
Architecture / Block Diagram

1. **Assignment Submission:** Students upload assignments directly to the app.
2. **Plagiarism Detection:** The system checks for plagiarism, highlighting content with over 50% similarity.
3. **Teacher Review:** Teachers review the plagiarized sections and decide whether to accept or request revisions.



Architecture

- **Task & Assignment Management:**
  Every task is comprised of a number of assignments, which are stored in a central
- **System Algorithm:**
  Processes assignments and detects similarities using machine learning.
- **Similarity Report:**
  Generates detailed similarity insights for assignments, viewable via the system interface.



Tech Stack

- Frontend: React.js (for student and teacher dashboards).
- Backend: Node.js, Express.js (for task and assignment management).
- Database: Mongot db Atlas (for task storage and NOC tracking).
- Plagiarism Detection: Machine learning Model

Impact And Feasibility

Impact:

- Improved Academic Integrity: The platform discourages unethical practices and promotes originality among students by accurately detecting plagiarism.
- Increased Efficiency: The automation of plagiarism detection and NOC creation helps avoid time and effort for educators and administrators.
- Streamlined Task Management: A centralized system ensures timely submissions and better tracking of student progress.
- Scalability: The application can be scaled up to accommodate different institutions of learning and extended to other industries that need task management.

Impact And Feasibility

Feasibility:

- Technology Readiness: The presence of established technologies such as React.js, Node.js, and machine learning models makes the system practical for implementation.
- Cost-Efficient Deployment: Using existing frameworks and cloud-based solutions like MongoDB Atlas reduces infrastructure costs.
- User Accessibility: The interface is modeled after Google Classroom, thus ensuring that students and teachers are familiar with it.
- Future Scalability: The architecture of the system allows for easy scalability and integration with Learning Management Systems and mobile platforms, thereby increasing its adoption potential.

THANK YOU !

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