K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

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Project Title

First Year Project Synopsis
Submitted by

ROLL	NAME
Virat Dagar	2501010356
Krishang	2501010277
Daksh	2501010293
Jasleen	2501010291
Aprajita Mishra	2501010313

Faculty Mentor:

K.R. MANGALAM UNIVERSITY
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Design and Development of a Behavioural Academic Integrity Checker

Team LUMIX

First Year Engineering Project | Faculty Mentor: Megha Sharma

Project Overview

What This System Does

- ***Monitors behavioral interaction metadata***
- ***Analyzes typing patterns and editing behavior***
- ***Logs paste activity and session timing***
- ***Generates explainable priority indicators***

What This System Does NOT Do

- ***Evaluate content quality***
- ***Detect AI-generated text***
- ***Label misconduct or assign penalties***

Decision-support tool for human review

Specific Objectives

Research Limitations

Study constraints of traditional plagiarism and AI-detection systems

Behavioral Analysis

Analyze how assignments are written rather than what is written

Capture Indicators

Record typing rhythm, paste actions, editing frequency, and duration

Generate Indicators

Create explainable integrity risk indicators with human-readable reasons

Ethical Framework

Maintain human-in-the-loop decision making for all evaluations

Key Features

01

Monitored Web Editor

Controlled assignment writing environment

02

Real-Time Logging

Continuous behavioral metadata capture

03

Rule-Based Engine

Weighted integrity risk scoring system

04

Explainable Indicators

Transparent, interpretable results

05

Faculty Dashboard

Centralized review interface

06

No Automated Penalties

Supports informed human decisions only

Project Use Cases & Scope

Primary Applications

- ***Faculty academic integrity review***
- ***Contextual insight into creation behavior***
- ***Digital written assignment evaluation***

Key Principles

- ***Fair and informed academic evaluation***
- ***Enhanced transparency and trust***
- ***Human oversight at all stages***

Important: Not intended for punishment or automated enforcement

System Architecture & Flow

Student Writes

Assignment in monitored web editor

Event Logging

Frontend captures typing, paste, editing, timing

Data Submission

Text, session timing, behavioral logs packaged

Feature Extraction

Backend processes raw events into metrics

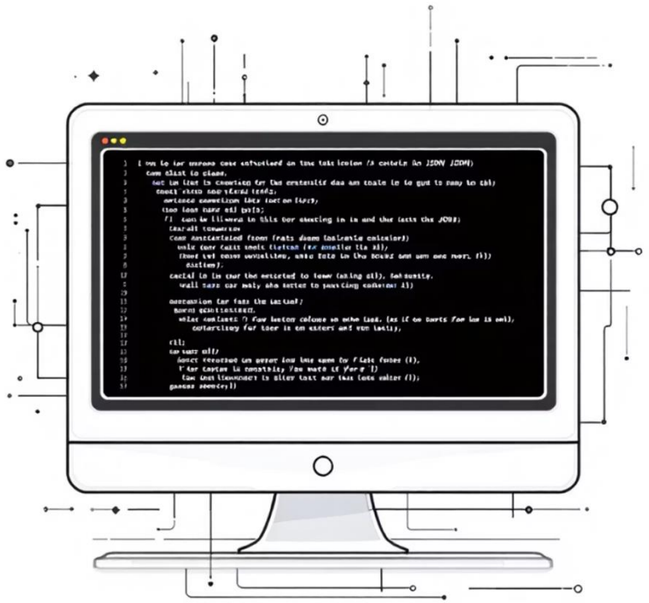
Pattern Evaluation

Rule-based engine identifies unusual behavior

Report Generation

Integrity indicators displayed to faculty

Data & Resources



Primary Data Sources

- ***Behavioral interaction metadata***
- ***Keystrokes, paste events, edits***
- ***Session timing: start, end, duration***
- ***Structured JSON payloads***

Implementation Environment

- ***No external content databases***
- ***Local development prototype***
- ***Web-based architecture***

Methodology

Frontend Implementation

Browser event listeners capture behavioral events

Backend Framework

FastAPI with Python for data processing

Feature Extraction

Convert raw events into behavioral metrics

Rule-Based Heuristics

Weighted integrity indicators with explanations

Faculty Interface

Results presented for human interpretation

Expected Results & Impact

Enhanced Transparency

Clear visibility into academic integrity evaluation processes

Reduced Opaque Systems

Move away from black-box plagiarism and AI-detection tools

Contextual Insight

Understanding writing behavior beyond content analysis

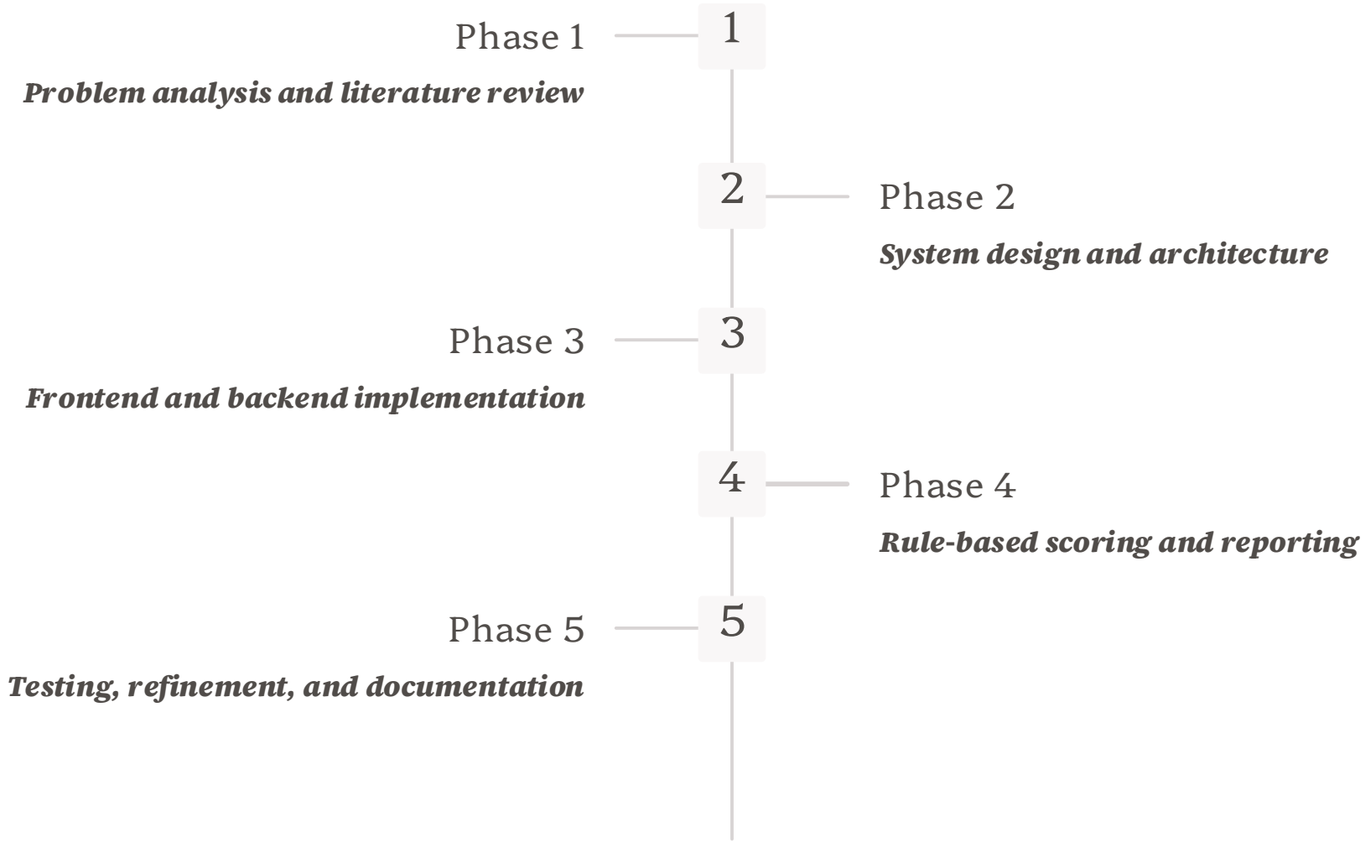
Ethical Support

Explainable integrity indicators for informed decisions

Strengthened Trust

Improved relationships between students and faculty

Project Timeline



THANK YOU