Title: Project Abstract: SmartCampus AI

Submission for: **NES** Innovation Awards 2025

1. Brief Overview of the Project

SmartCampus AI is an intelligent ERP solution that shifts educational management from Reactive to Proactive.

Current systems only record data (attendance, marks) after a student has already failed. SmartCampus AI utilizes **Logistic Regression** and machine learning on day-to-day data (quiz performance, attendance trends, subject-specific metrics) to generate a "Risk Probability Score" for every student in real-time.

- **Key Differentiator:** Instead of just digitization, we provide intelligence. If a student struggles in a specific topic (e.g., Calculus), the AI flags it immediately and alerts mentors *before* the final exam, allowing for timely intervention.
- **Scalability:** Designed to work for Colleges, Schools, and Local Tuitions.

2. Team Composition

- **Team Name: CodeBlooded**
- **Lead Developer:** Virendra Gadekar – Full Stack & AI Logic.

3. Prototype Readiness (TRL Level: High)

The project is not just a concept; we have a fully functional MVP (Minimum Viable Product) built on a Microservices Architecture.

- **Current Status:** The core modules (Student/Mentor Dashboards, AI Risk Analysis, Quiz System) are live and functional.
- **Tech Stack:**
  - **Backend:** Java Spring Boot (Microservices).
  - **Frontend:** React.js, HTML, CSS.
  - **AI/ML:** Python (Scikit-learn) using Logistic Regression for predictive analytics.
  - **Integration:** IPC (Inter-Process Communication) bridging Java backend with Python AI models.

4. Relevant Information & Repositories

We have successfully implemented the "Risk Profile Analysis" which visualizes student data into actionable insights (High/Medium/Low Risk).

- **Pitch Video:** https://www.youtube.com/watch?v=F9bwmqYnDzQ
- **Demo Live:** https://erp-frontend-dda9.onrender.com/

(Note: The Live Demo is hosted on a free server and may take 30-60 seconds to wake up on the first load)

- **Research Work:** https://github.com/viru0909-dev/ResearchWork
- **Codebase:**
  - Backend: https://github.com/viru0909-dev/ERP_Backend
  - ML Model: https://github.com/viru0909-dev/ERP_ML