

# HACKXTREME'26



PROPEL SOFT

## **Problem Statement: Obtain North Star for a Software Engineers on their activity & Performance**

**Objective:** Develop an AI-powered framework that integrates software development and monitoring tools to track engineer performance metrics. The system should analyze work patterns, code quality, project contributions, and skill development to generate a performance score. Based on these scores and historical career data, the AI should predict and recommend the next appropriate career level (e.g., from Junior Engineer to Senior Engineer) and required skill upgrades for the employee.

### **Main Criteria to Validate:**

- o **Multi-Factor Performance Scoring:** Create an algorithm that calculates a holistic score based on:
  - Work completion rate and deadline adherence
  - Code quality (bugs, reviews, maintainability)
  - Time management and efficiency across multiple projects
  - Skill acquisition and learning progress (new technologies, certifications)
- o **Bias Mitigation:** Ensure the AI model is trained to recognize different working styles and does not penalize engineers unfairly.
- o **Career Path Mapping:** Develop a model that maps performance score trends to a predefined company career ladder (e.g., Fresher → Team Lead → Architect).
- o **Predictive Recommendations:** The system should not just report scores but suggest actionable steps (e.g., "Complete a course on System Design to qualify for Senior Engineer").

**Description:** Organizations struggle to objectively measure the performance of software engineers, especially freshers, and map that performance to structured career growth. Traditional performance reviews are often subjective and infrequent. There is a need for a continuous, data-driven system that monitors engineering activities, quantifies contributions, and uses that data to recommend personalized career advancement paths.