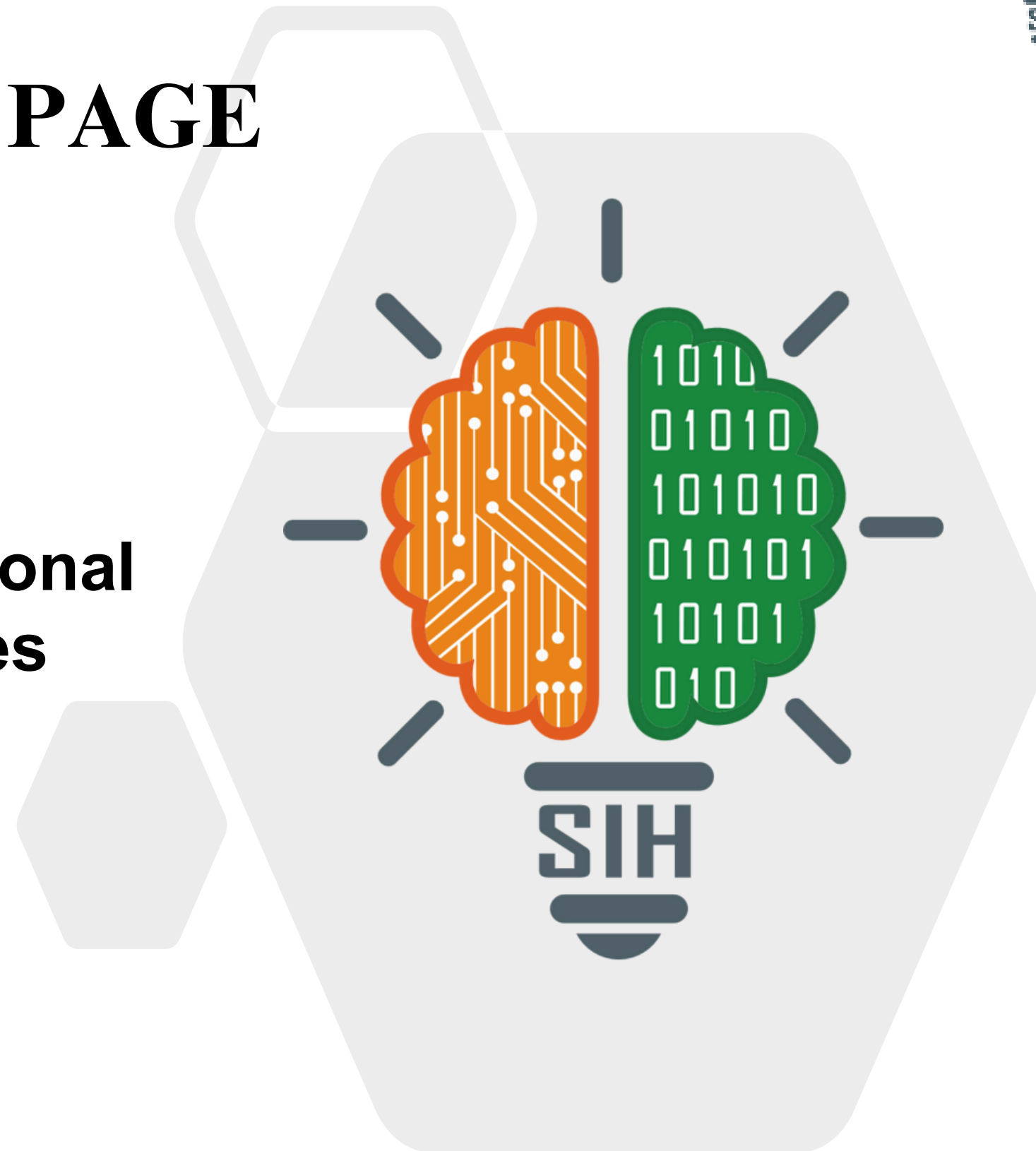


## TITLE PAGE

- **Problem Statement ID –25009**
- **Gamified Environmental Educational Platform for Schools and Colleges**
- **Education & Skill Development**
- **PS Category- Software**
- **Team ID-**
- **Team Name -Team Spark**



# IDEA TITLE

- **Proposed Solution**

- **Integrates curriculum-based learning with interactive, game-like experiences**
- **Maximizes student participation & real-world environmental action**
- **Gamification features: points, badges, levels, leaderboards, rewards**
- **Modules cover: climate change, waste management, biodiversity, sustainability.**
- **Each module includes: brief lessons, quizzes, mini-games for engaging learning**
- **Real-life tasks: tree planting, recycling campaigns, energy-saving challenges**
- **Students earn points for completing verified real-world activities**

# TECHNICAL APPROACH

## Technologies to be Used

**Frontend: React / Flutter (cross-platform UI)**

**Backend: Node.js / Express**

**Database & Cloud: Firebase (auth, storage, real-time updates)**

**Gamification: Points, badges, levels, leaderboards APIs**

**Hardware: PCs, tablets, smartphones (students & teachers)**

## Methodology / Process

### Flow:

**Needs Assessment → Design → Gamification → Content →  
Development → Testing → Deployment**

## **Feasibility / Practicality:**

**Low-cost cloud hosting → reduces infrastructure expenses**  
**Works on web & mobile → accessible to schools & colleges**  
**Scalable → can expand to multiple institutions**

## **Potential Challenges / Risks:**

**Internet connectivity issues in remote areas**  
**Student & teacher adoption / engagement**  
**Limited tech proficiency among users**

## **Strategies / Mitigation:**

**Offline mode & caching for low-connectivity areas**  
**Interactive tutorials & guided onboarding for users**  
**Gamified rewards & engaging content to boost participation**  
**Teacher training & support for smooth implementation**

## Potential Impact on Target Audience

Increases environmental awareness 🌱 among students

Encourages participation in real-world eco-actions ♻️

Enhances learning engagement & retention 🎯

Empowers teachers to monitor student progress effectively 📊

## Benefits of the Solution

**Social:** Promotes community involvement & teamwork

**Economic:** Cost-effective digital platform, reduces need for physical materials

**Environmental:** Fosters sustainable habits, supports UN SDGs 🌍

**Educational:** Interactive & gamified modules improve knowledge retention.

 **UN Sustainable Development Goals (SDG) Reports**  
<https://sdgs.un.org/goals>

 **Articles on Gamification in Education**  
**Journal of Educational Technology & Society**  
**Research papers on interactive learning platforms**

 **Government Environmental Campaigns**  
**Swachh Bharat Mission**  
**National Green Corps initiatives**

 **Pilot Studies / Case Studies**  
**Eco-education programs in schools & colleges**

 **Curriculum Guidelines**  
**NCERT / State Board Environmental Education syllabus**