

# SMART INDIA HACKATHON

## 2025

- **Problem Statement ID** – 25141
- **Problem Statement Title**- Student Innovation  
[Challenges your creative minds to conceptualize  
and develop unique toys & games].
- **Theme**- Toys and Games
- **Team Name**- Mind Canvas
- **PS Category**- Software

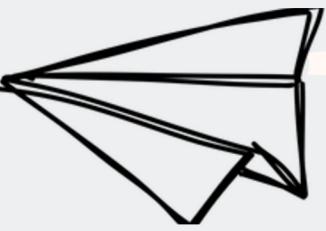




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# DoodleQuest

## LEARNING WITH DOODLING



### PROBLEMS

1.

Then he gets bored  
of these toys

Child buys many  
toys

Then he demands of more toys from  
his parents

A child sits  
to doodle

Yeah! I  
drew a SUN

2.

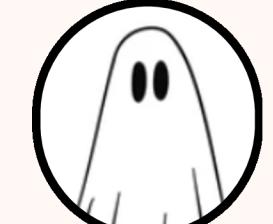
He ends up drawing a moon  
in place of sun. At the end, he is  
learning WRONG.

3.

Almost half of the children reported that they did not play Video Game, 18% of students are using video game with control, 20% students are excessively using video games and 17.5% of the students fall under addiction category. The study indicated that 19% of the children were spending more than 3 hours for game.

Source: Times Of India

### FEATURES



Smart Hints

Safe/Unsafe  
Doodle Detection

Multilingual  
Narration

Dual Dashboards  
(Parent and Child)

Adaptive  
Difficulty

Friendly  
reminder: safe  
doodles only!

### OBJECTIVE OF THE PROJECT

**AIM :** To build a platform where children can **learn** effectively through **Doodling**, by **Reducing Screen Time**.

**VISION:** Our mission is to design an **engaging learning platform** that integrates doodling into education, **encourages creativity**, reduces **reliance on screens**, and empowers children to **develop knowledge**, **imagination**, and **healthy study habits**.

### SOLUTION

An AI-powered play and learn platform

- Dual Mode:** Supports both **Screen and paper drawings** through camera + screen detection.
- Recognizes doodle drawn** by child using **Machine Learning** and present latest **Technologies**.
- Doodle-specific games** and customized puzzles are created to make learning fun, interactive, and creative
- Generates** and **narrates personalized stories** based on the doodle

### Promoting Sustainability

- A single platform offering multiple games that make learning **interactive**, creative, and healthy by **reducing screen time**



# TECHNICAL APPROACH



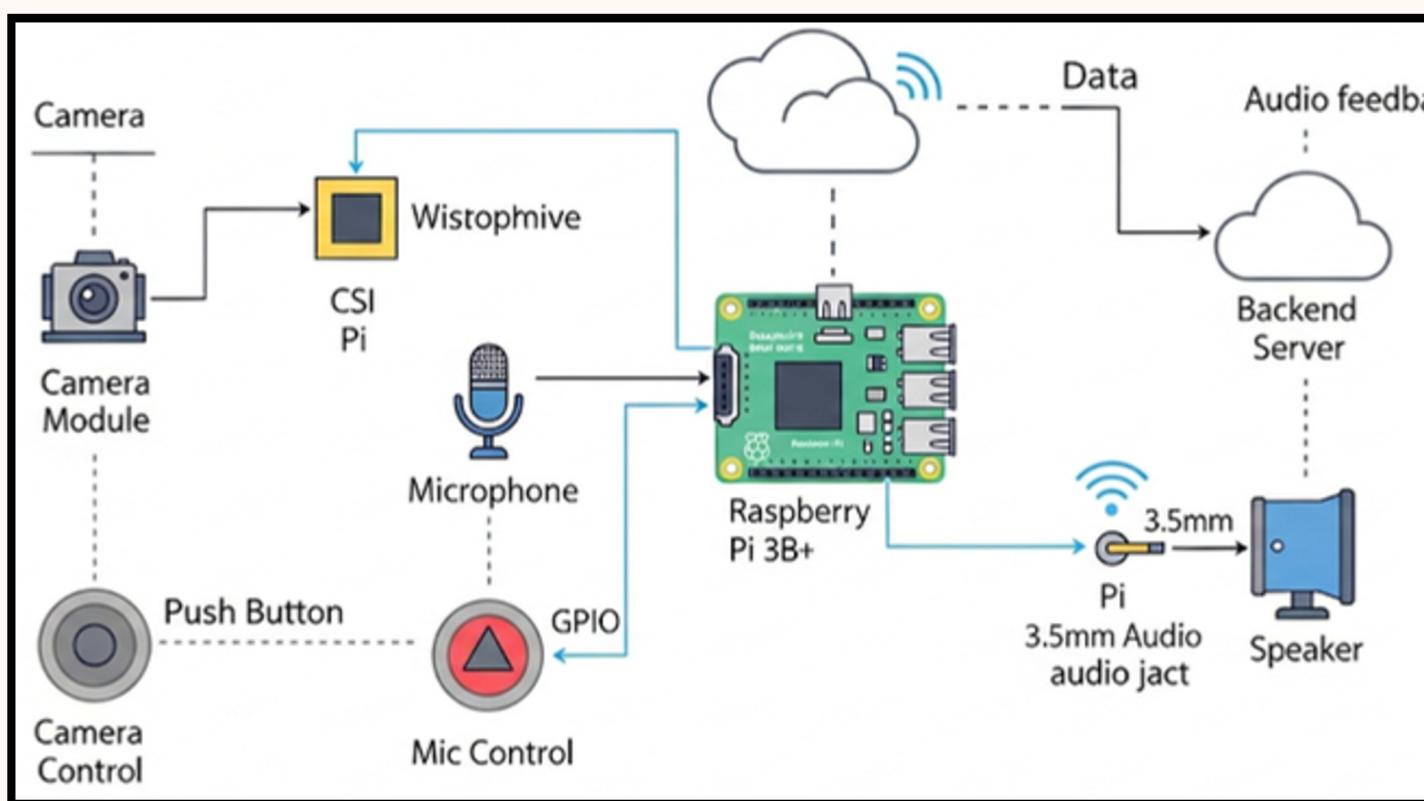
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## TECH- STACK

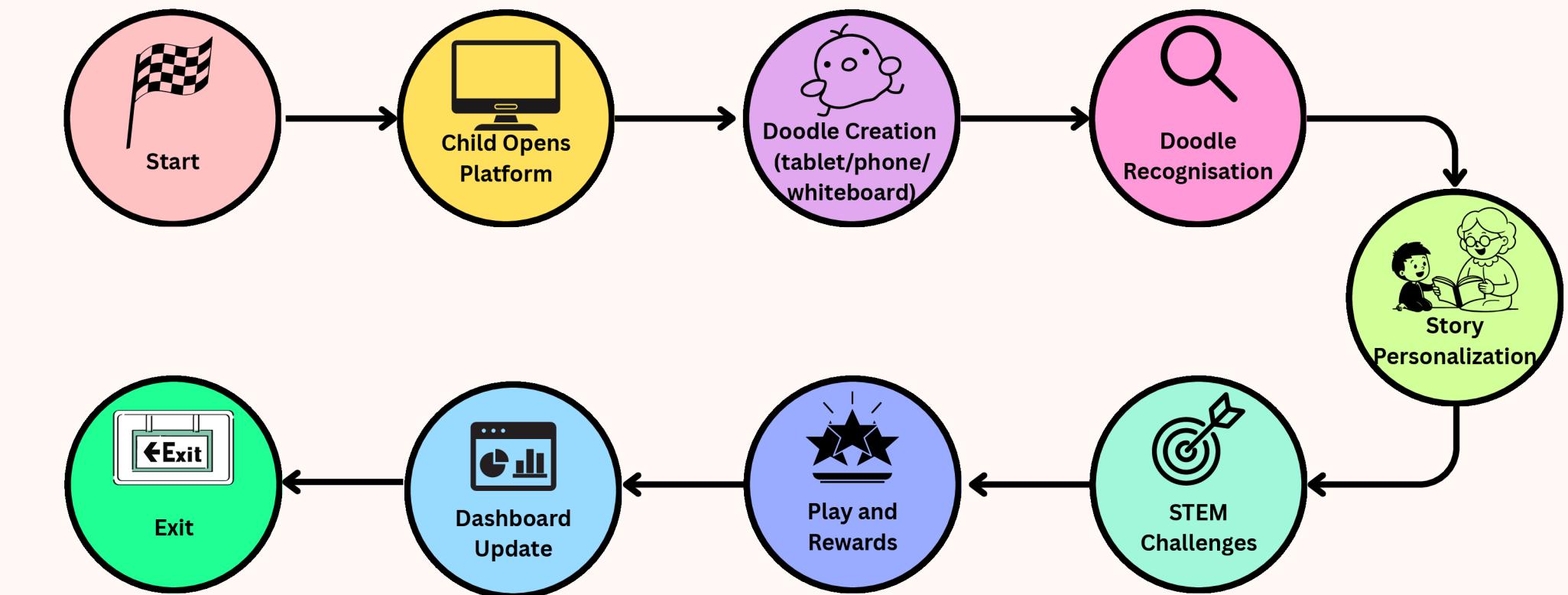


## HARDWARE & HARDWARE BEHAVIOUR:

- Smartphone/ Laptop
- Camera Sensor
- Simple Speaker
- Raspberry pi
- GPIO buttons



## Platform Process Flow



## Use Case Diagram

# FEASIBILITY AND VIABILITY



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## DEVELOPMENT FEASIBILITY

### • Team Expertise:

Our team's expertise in MERN, Python, Machine Learning[ML] and Artificial Intelligence[AI] equips us to build core features efficiently.

### • Minimalist Hardware:

(a standard camera and speaker).

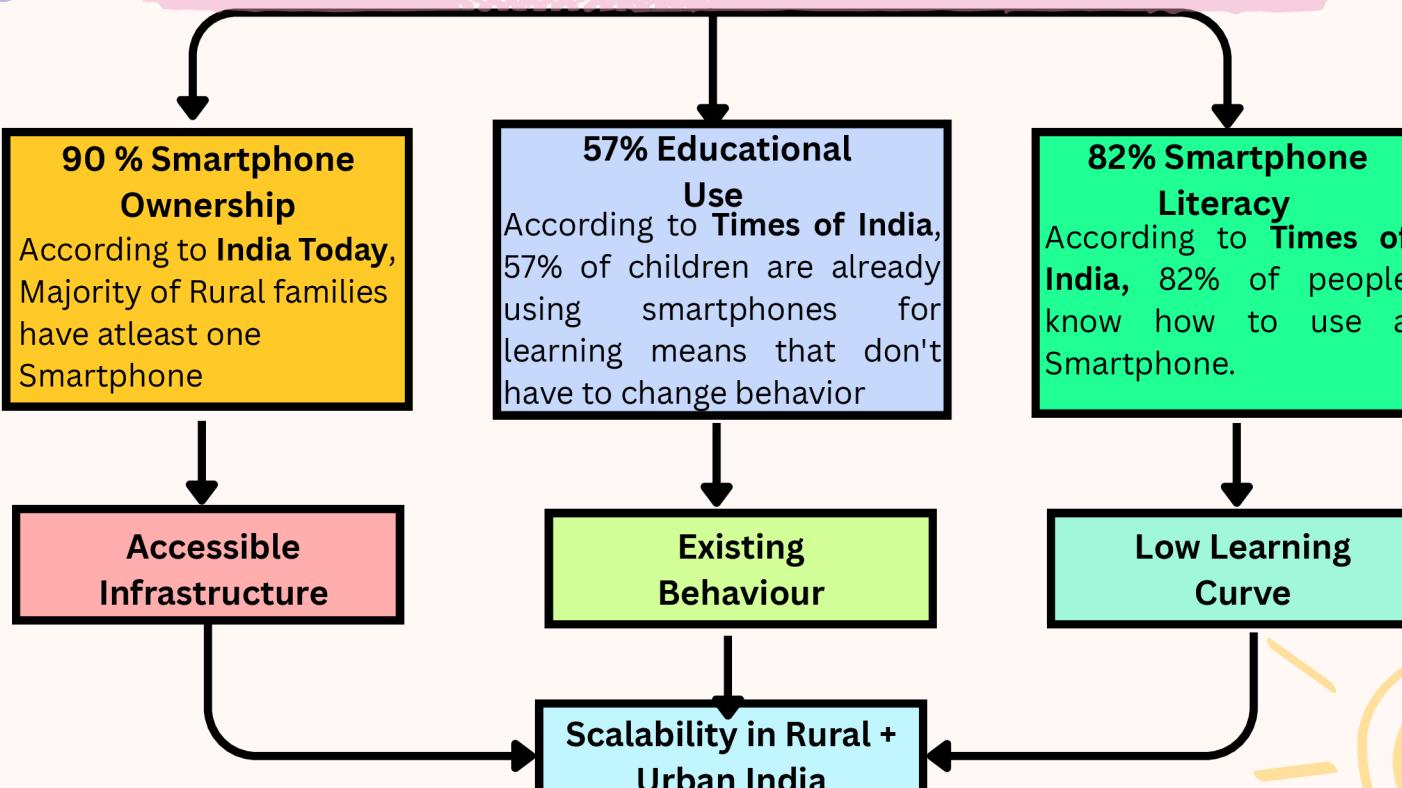
### • Pre-built Tools:

We use well-supported APIs and pre-trained models, avoiding complex AI built from scratch.

### • Scalability:

The modular architecture allows us to add new stories, challenges, and AI features in the future.

## IMPLEMENTATION FEASIBILITY



## MONETIZATION OF PROJECT

Work with NGOs and education groups to bring your doodle platform to children who need it most. With their support and sponsorship, you can make creative, low-screen learning fun and accessible for every child.

Access to parents is an easy way to let their kids learn while having fun. Through playful doodle games, children explore, create, and grow — and with a simple upgrade, families can unlock extra challenges, stories, and progress tracking to support learning together.

## CHALLENGES AND STRATEGY

### • CHALLENGE: Recognition Accuracy:

Child-like drawings can be abstract.

### • STRATEGY: Confirmation & Fallback:

When unsure, the AI asks for confirmation or switches to Free Draw mode.

### • CHALLENGE: Privacy:

Facial expression analysis is a sensitive topic.

• STRATEGY: Explicit Consent: All sensitive features are optional with **user consent**, offering non-intrusive alternatives like 'Are you having fun?'

### • CHALLENGE: API Dependency:

API reliability and internet connectivity.

• STRATEGY: Graceful Handling: Our app is designed with **offline fallback** modes for core features and API error handling.



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# IMPACT AND BENEFITS



## IMPACTS

### On Students:

- Feel more Creative and Confident
- Mind becomes more sharp

### On Parents :

- no wastage of money on buying new toys and games

### On Teachers:

- Easier to adjust to child's pace of learning

## BENIFITS

**Insightful Dashboards:** Provides a secure way to track a child's progress, interests and **Mental Health.**

**Safe & Trustworthy:** The privacy-first design ensures peace of mind.

**Engaging Learning:** A tool that can make learning a fun, collaborative activity.

## How we are Doing Different?

Products	<u>Osmo</u>	<u>Novel ai</u>	Our Project [doodleQuest]
Feature			
Story Personalization	no	No[Only Story Generation]	yes
STEM Challenges	yes	no	yes
dashboard	yes	no	yes
Inclusivity (For specially abled)	no	no	yes (dyslexia-friendly Fonts)
Multilingual & Voice Narration	no	no	yes

## INTERFACE PROTOTYPE



# RESEARCH AND REFERENCES



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## Google Quick, Draw! Dataset:

Used for our primary sketch recognition model.

<https://github.com/googlecreativelab/quickdraw-dataset>

## TensorFlow Lite & MediaPipe:

Core frameworks for on-device AI model deployment and analysis.

<https://www.tensorflow.org/lite>

<https://mediapipe.dev>

## Ethical AI & Privacy Guidelines:

We have consulted guidelines on building child-safe and privacy-compliant AI systems

<https://www.tensorflow.org/lite>

<https://mediapipe.dev>

[https://journals.lww.com/ijsp/fulltext/2018/34030/video\\_game\\_use\\_among\\_schoolchildren\\_and\\_its\\_impact.6.aspx?utm\\_source=chatgpt.com](https://journals.lww.com/ijsp/fulltext/2018/34030/video_game_use_among_schoolchildren_and_its_impact.6.aspx?utm_source=chatgpt.com)

## OpenAI API:

For generating personalized stories and dynamic content.

<https://openai.com/api>

## Google Cloud Text-to-Speech:

Provides high-quality, expressive narration.

<https://cloud.google.com/text-to-speech>

## Research Resource:

[https://journals.lww.com/ijsp/fulltext/2018/34030/video\\_game\\_use\\_among\\_schoolchildren\\_and\\_its\\_impact.6.aspx?utm\\_source=chatgpt.com](https://journals.lww.com/ijsp/fulltext/2018/34030/video_game_use_among_schoolchildren_and_its_impact.6.aspx?utm_source=chatgpt.com)

<https://cloud.google.com/text-to-speech>

<https://openai.com/api>

