**CodePi Innovation Challenge**

**Project Idea & Report**

**Name:** **“MathQuest: An Interactive Adventure in Math”**

**Division:** Hackathon

**Concept:**

Create a fun, interactive web-based game where high school students solve math puzzles to advance through different levels in a storyline. Each level focuses on a different STEM concept (e.g., fractions, geometry, basic algebra, and calculus).

**Key Features**

1. **Interactive Story Mode:** Players solve progressively harder problems to unlock new levels and characters, five questions per level and each question is difficult than the previous one.
2. **STEM-Themed Challenges:**

* Level 1: Solve fractions and decimals puzzles.
* Level 2: Explore geometry by identifying shapes and solving area/perimeter problems.
* Level 3: Use basic algebra to solve equations.
* Level 4: Use basic calculus to solve equations.

1. **Progress Tracking:** Players can see how far they’ve progressed and review past challenges, and which level are they on.
2. **Hints and Fun Facts:** Provide hints, formular and interesting STEM facts throughout the game.
3. **Report:** after you finish all the levels, player should have a report on his math ability and remarks.

**Tech Stack 1**

* **Frontend:** HTML, CSS, JavaScript
* **Backend:** Node.js (optional, if we need to store progress)
* **Game Logic:** JavaScript

**Tech Stack 2**

* **Frontend:** python code
* **Backend:** (we need to store progress)
* **Game Logic:** python

**AI Enhancements:**

* **Dynamic Question Generation:** Instead of hardcoding questions, use AI to generate random math questions based on the current level.
* **Hints with Explanations:** Use AI to provide hints when the player gets stuck, explaining how to approach the problem.
* **Feedback System:** After each answer, AI provides personalized feedback, helping the player learn from mistakes.

**REQUIREMENTS**

**WHAT TO BUILD**

1. Designed for experienced coders and developers!
2. Build fully functional apps, games, or websites that explore STEM concepts using coding.
3. Use programming languages (Python, JavaScript, HTML/CSS)
4. Ensure the project demonstrates how coding enhances STEM learning or solves STEM-related problems.

**WHAT TO SUBMIT**

**Project Description:**

1. A brief write-up explaining what your project does and how it works.
2. Clearly specify whether your project is for the Ideathon or Hackathon division.
3. Include a link to your source code (e.g., GitHub repository).
4. Submit a video no longer than 5 minutes.
5. Your video should explain:

* What your project is about.
* How it works.
* How it connects coding with STEM concepts.
* Any unique or creative features you’ve added.