Product Backlog

1) Initial Setup and Framework
As a developer, I need a basic project setup including a repository, development environment, and core architectural framework so that we can start implementing features.
Tasks:
- Set up version control with Git.
- Establish a React-based framework for the frontend.

2) User and Teacher Interface Creation
As a user/teacher, I need an interface to interact with the system so that I can access games and feedback mechanisms.
Tasks:
- Design and implement the basic UI for users.
- Design and implement the interface for teachers.

3) Coding Challenge Generator
As a user, I need a system that can generate coding challenges covering fundamental concepts so I can improve my coding skills.
Tasks:
- Develop a module to generate challenges based on loops, conditionals, functions, etc.
- Ensure challenges vary in difficulty and topics.

4) Database for User Data and Progress
As a teacher, I need to access and store user data + progress to monitor and support learners effectively.
Tasks:
- Set up a database for user data.
- Implement functionality to track and save user progress.

5) Detailed Feedback System
As a user, I want to receive detailed feedback on my errors during challenges to learn from my mistakes.
Tasks:
- Implement a feedback system that identifies errors and provides hints.
- Allow switching between languages to view feedback in different programming contexts.

6) Multiple Language Support

As a user, I want to switch between different programming languages while working on challenges to enhance my learning experience.
Tasks:
- Develop the infrastructure to support multiple programming languages (Java, Python, etc.).

7) Offline Functionality
As a user, I want the ability to use the application offline so I can practice coding without an internet connection.
Tasks:
- Implement data caching and local storage solutions.

8) Customizable Learning Plans
As an educator, I need to customize learning plans for students based on different teaching curriculum and student needs.
Tasks:
- Create a flexible system for educators to build and manage custom learning plans.

9) Beginner's Tutorial
As a new user, I need a beginner-friendly tutorial that helps me understand how to navigate the system and start learning effectively.
Tasks:
- Design and implement an interactive tutorial for first-time users.

10) Accessibility and Device Compatibility
As a user, I want to access the platform on various devices, including mobile, to practice coding anywhere.
Tasks:
- Ensure the UI is responsive and compatible across different devices.

11) Positive Reinforcement Messages
As a user, I want to receive positive messages upon successful completion of challenges to stay motivated and encouraged.
Tasks:
- Design a system to display entertaining and fun congratulatory messages after completing challenges.

12) Light/Dark Mode UI
As a user, I want to switch between light and dark modes in the UI to customize my visual experience according to my preferences.

Tasks:
 - Implement a toggleable UI theme feature.