

Programming Education Web Game

1. Introduction

I'm going to build a coding education web site that provides abundant instructions and interesting games for students to learn programming online. Students will play games to solve coding puzzles from easy to complicated. The goal is to make learning programming attractive and accessible to every student.

Benefits include:

- More passionate to learn: Learn to program by playing games will make the learning process attractive for students
- Easy and convenient: Students can write and compile code online with different programming languages, instead of setting up environments on their own computer.

2. Expected List of Features

- User sign up / log in / log out: users can sign up their own account, and they can log in and log out using their account.
- Learning content and instructions: users can view instructions of learning code online
- Online code editor: users can write code using different programming languages on an online code editor. The editor will provide standard code styles and different themes.
- Online code compiler: users can compile their code online and get console results shown on screen.
- Discussion board: users can post their questions, communicate with others through a discussion board.

3. Market Survey

- **W3schools** is an educational website for learning web technologies online. It provides users with many examples of programming schema and usage. Users can run examples and test their own code through an online compiler.
- **Hackerrank** is the market-leading technical assessment and remote interview solution for hiring developers. It provides users to solve coding puzzles from easy to hard online.
- **Codecombat** provides a place where students can learn typed code through a programming game. The programming game is a WOW like RPG game which is very attractive.
- **Scratch** is a free programming language and online community where you can create your own interactive stories, games, and animations.

4. References

W3schools: <https://www.w3schools.com/>

HackerRank: <https://www.hackerrank.com/>

Leetcode: <https://leetcode.com/>

Codecombat: <https://codecombat.com/about>

Scratch: <https://scratch.mit.edu/>