Game Development Basics:
Scratch Junior Level II
Suitable for: G1 - G3

Prerequisite: Basics of block programming:
Scratch Junior Level I
Duration: 15 Weeks
Classes per Week: 1 class (45 minutes each)

Course Overview:
In this course, students advance their skills acquired from Scratch Junior Level I by developing intricate games using the Scratch Junior platform. Advanced programming principles such as conditionals, loops, and message broadcasting are heavily applied. The emphasis is on integrating diverse programming concepts to craft sophisticated games and animations.

Covered Topics

Unit 1: Introduction to Advanced Game Development

- Overview of game development in Scratch Junior.
- Review of key programming tools and blocks.
- Creating simple interactive games.
- Using basic control structures to start game design.

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Unit 2: Sprite Interactions and Challenges

- Programming sprite-to-object interactions.
- Adding touch mechanics for gameplay.
- Creating a battle-style interaction between characters.
- Programming challenges and victory conditions.
- Adding obstacles to the game.
- Using logic to create movement and avoidance mechanics.

Unit 3: Shooting and Action Games

- Programming sprite-based shooting mechanics.
- Introducing player objectives and scorekeeping.
- Developing shooting interactions and game win/lose conditions.
- Adding flying objects and target-hitting mechanics.

Unit 4: Advanced Movements and Loops

- Incorporating aiming mechanics into the game.
- Using loops for repetitive actions.
- Creating dodge mechanics and player movement logic.
- Building repetitive, action-based gameplay using loops.

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Unit 5: Final Game Mechanics and Challenges

- Combining various game elements for a complex challenge.
- Implementing a final boss challenge with shooting mechanics.
- Adding message blocks for sprite communication and action coordination.
- Designing a race game where multiple elements and mechanics come together.

Course Materials

- Tools Needed
  - A laptop or PC with a Chrome browser.

Assessment

At the end of each lesson, students will be assessed on the application of concepts such as motion, loops, conditionals, interactions, and messaging in their game projects.

Certification

A certificate of completion will be awarded upon the successful completion of the course.