Game Development with Scratch: Level II
Suitable for: G4 - G7

Prerequisite: Game Development with Scratch: Level I
Duration: 20 Weeks
Classes per Week: 1 class (45 minutes each)

Course Overview:

Building on concepts learned in Level I, this course dives deeper into game development using Scratch. Students will expand their skills in programming, focusing on more sophisticated game mechanics, animations, and interactivity. By the end of the course, students will be capable of creating polished games with enhanced functionality and visual appeal.

Covered Topics

Unit 1: Advanced Scratch Techniques
- Review of Sprites and Backgrounds
- Enhanced Sprite Creation
- Drawing complex sprites
- Utilizing various Scratch blocks for customization
- Exploring Dimensions and Positioning
- Fine-tuning sprite positioning

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Unit 2: Game Mechanics and Animation
- Advanced Animation Techniques
- Creating smooth transitions and animations
- Using loops for continuous movement
- Interactive Storytelling
- Combining animations with interactive elements

Unit 3: Game Interactivity and Logic
- Advanced Conditionals and Events
- Developing games with complex event-driven logic
- Using nested conditionals for dynamic interactions
- Utilizing Variables and Operators
- Applying variables to track game progress
- Using operators to create challenging gameplay mechanics

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Unit 4: Specialized Game Projects
- Developing games with distinct themes and objectives
- Creating character movements for specific games
- Adding attack, defense, and interaction mechanics

Unit 5: Multi-Level Game Design
- Creating Multi-Level Games
- Designing games with progressive difficulty levels
- Implementing checkpoints and scoring systems
- Advanced Cloning Techniques
- Utilizing cloning for additional game elements

Unit 6: Final Projects and Challenges
- Bringing together learned concepts in a final game
- Using Scratch to create an interactive, story-based game

Materials Needed:
- Access to a computer or tablet
- Internet connection
- Chrome browser

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Assessment

At the end of each lesson, learners will be assessed on their ability to apply concepts such as conditionals, cloning, sprite interactions, variables, and messaging within their game projects. Each assessment will focus on how effectively they integrate these advanced programming elements to create dynamic, functional, and engaging games using Scratch.

Certification

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