



Course Outline

For Scratch



Course Outline: Mastering Scratch: Game Development & AI for Kids

Course Title: Mastering Scratch: Game Development & AI for Kids

Course Description:

A perfect course for kids who want to master the art of coding using Scratch and create engaging games. This course also introduces young learners to the world of Artificial Intelligence using Scratch, fostering both creativity and analytical skills.

Course Length: 24 Weeks

Key Learnings

- Game Development using Scratch
- Complex Programming Topics
- Introduction to Artificial Intelligence
- Fundamental Programming Principles

Achievements

- Conceptual Clarity
- Enhanced Analytical Skills
- Increased Confidence
- Proficiency in Game Development

Featured Projects

Integer Game: Learn about integers using a number line through an engaging game.

Car Game: Create a car racing game where the car crashes upon touching obstacles, introducing functions and collision detection.



Module Descriptions

Module 1: Fun with Basic Animations

Discover the basics of Scratch programming by creating simple and fun animations. Students will learn to navigate the Scratch interface, control movements, and bring their stories to life with animated projects.

Projects: Run Around Field, Trivia Game, Pong Game, Dodgeball Game, Space War

Module 2: Introduction to Game Design

Start your journey into game design by creating interactive games. Learn the essentials of player movement, scoring, and game levels, building the foundation for more complex games.

Projects: Platform Ball Game, Shoot The Zombie, Car Race, Flying Cat

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Module 3: Intermediate Game Design Adventures

Enhance your game design skills with more advanced projects. Explore detailed player controls, game physics, and multi-level game creation, while learning to optimize game performance.

Projects: Maze Runner, Jumping Chick, Shoot The Parrot, Car Race 2

Module 4: Advanced Game Mastery

Take your game development to the next level by mastering advanced game mechanics and multi-character interactions. Create custom functions, refine game elements, and polish your games for a professional finish.

Projects: Advanced Animation Techniques, Multi-Character Interaction, Function-Based Game Elements, Advanced Game Elements



Unlock Advanced Animation and Game Developer Certificate

Module 5: AI for Young Coders

Dive into the basics of Artificial Intelligence with Scratch. Implement AI algorithms, create intelligent game elements, and develop AI-driven interactions to make your games smarter.

Projects: AI-Based Characters, Smart Game Objects, Basic AI Algorithms in Games, Advanced AI Behaviors, Interactive AI Elements

Module 6: Machine Learning Made Easy

Explore the exciting world of machine learning. Create predictive games, train AI models, and enhance your gameplay with AI-driven features. Learn to evaluate and refine your AI projects.

Projects: Basic Machine Learning Models, Predictive Game Design, Training and Implementing Models, AI-Enhanced Game Features, Evaluating and Improving AI

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Final Module: Create Your Own Game

In this capstone module, students will design and create their own unique game, applying all the concepts they have learned throughout the course. They will present their final projects to the class, demonstrating their skills and creativity.

Project: Final Project: Design and Create Your Own Game

Presentation: Presenting Final Project

Summary

By the end of this course, students will have a strong foundation in Scratch programming, game design, and an introduction to AI and machine learning, equipping them with the skills to create their own innovative projects.