eDUniQUe

TECHNOLOGY PROGRAM

Scratch Programming

12 Classes (Block Coding)

Learning coding is not only about understanding the programming language being used, but also developing important computational thinking skills, which are useful for problem-solving across many disciplinary areas. In this course, students will learn basic programming skills by creating interactive animations, which is a block-based visual programming language for anyone new to coding.

Requirement :

Software or App : Scratch editor

Required Laptop/Phone with internet connection

No prior knowledge in programming or electronics

Why Teach Students Programming

- The benefits students can gain from learning computer programming.
- The worldwide need for more computer programmers.
- How "blocky" programs allow people to create programs without memorization.
- The types of projects can be created with Scratch.
- Programs similar to Scratch or derived from it.

Learning Outcome:

Scratch is designed specifically for young people (ages 8 and up) to help them develop 21st century learning skills: thinking creatively, communicating clearly, analyzing systematically, using technologies fluently, collaborating effectively, designing iteratively, and learning continuously.

Scratch helps young people learn to think creatively, reason systematically, and work collaboratively — essential skills for life in the 21st century

The Basics of Scratch

- The history of Scratch.
- The difference between sprites and images.
- Using Scratch's built-in sprites.
- Creating your own sprites.
- How are "blocky" activities the same and/or different than coding?
- Scratch's block categories.

First Project Basics

- Adding movement to a sprite.
- Adding sound to a sprite.
- Changing the colors of a sprite.
- Making a sprite appear to speak.
- Making a sprite appear to think.

Logic

- The Stop block.
- The Wait block.
- The Forever block.
- Repeating actions.
- The Broadcast block.
- Conditional statements.
- Nested control statements.

Adding Sound

- Linking sounds to a sprite.
- Playing Scratch's sounds.
- Recording and playing your sounds.
- Adding narration to your story.

Costumes and Background Changes

- Adding and changing costumes.
- Adding and changing backgrounds.
- Graphic special effects.
- Changing the size of a sprite.
- Working with multiple sprites.

Classroom Management and Scratch Accounts

- Student accounts.
- Sharing.
- Collaborating.
- Remixing.
- Backing up files and standalone player.
- Appropriate content.
- Resources for help.

Mobile App Development

12 Classes (Block Coding)

Introduction & Development Process

Begin learning about the design process through an introduction to design and concept development.

Programming With App Inventor

Introduces App Inventor and what you can do with it, how to set it up and connect on your machine & device(s), how to build, edit, and share an app, and what Events based programming is.

Needfinding

Learn about the importance of needfinding.

Programming With App Inventor

Discover the programming concepts of conditionals, lists, iteration and how to use this information while building apps.

Prototyping

Learn about and begin to work with prototyping.

Programming With App Inventor

Introduces the programming concepts of procedures, variables, randomness, and basic algorithms as seen in apps. Additionally, covers different types and component properties.

Concept Selection

Go over the process of choosing a design and concept to use for your product.

Programming With App Inventor

Review and reinforce the programming concepts covered in the past two units, especially data and types. Also introduces the idea of persistence and how to use the TinyDB and TinyWebDB components.

Web Development

24 Classes (Coding)

Level -1 :

Unit 1 : Introduction & Basic html structure

Unit 2 : Html Elements

Unit 3 : Html Attributes

Unit 4 : Html Styles

Unit 5 : Html Formatting

Unit 6 : Html Images

Unit 7 : Html Colors

Unit 8 : Html Tables & List

Unit 9 : Html Links

Level - 2 :

Unit 10 : CSS Introduction

Unit 11 : CSS Colors

Unit 12 : CSS Background

Unit 13 : CSS Border, Margin & Padding

Unit 14 : CSS Box Model

Level -3 :

Unit 15 : Introduction to Javascript

Unit 16 : Javascript Variables

Unit 17 : Javascript Operators

Unit 18 : Javascript Data Types

Unit 19 : Javascript Functions

Unit 20 : Javascript Events

Unit 21: Javascript Condition Statement & Loops

C++

12 Classes (Coding)

Unit 1 : Introduction

Unit 2 : C++ Variables

Unit 3 : C++ User Input

Unit 4 : C++ Data Types

Unit 5 : C++ Operators

Unit 6 : C++ Strings

Unit 7 : C++ Conditions

Unit 8 : C++ Loops

Unit 9 : C++ Break/Continue

Unit 10 : C++ Arrays

Unit 11 : C++ Functions