PLUTOCODER: SUMMER CAMP CODING COURSE STRUCTURE

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Schedule: Junior				
Batch	Start Date	End Date	Days	Timing
Batch 1	2 July	8 August	TFS	8.30-9.30 PM IST

Schedule: Senior				
Batch	Start Date	End Date	Days	Timing
Batch 1	2 July	8 August	TFS	10.30-11.30 PM IST

Welcome to the Coding Course! This course is designed to provide you with a solid foundation in coding, enabling you to think logically and solve problems effectively. Over the span of 16 sessions, we will delve into the fundamental aspects of programming, covering both Python and Scratch coding. You will learn basic syntax, variables, control structures, functions, loops, debugging, algorithms, data structures, and create simple projects. So, get ready to embark on this coding journey, where you will enhance your computational skills, gain confidence in creating your own programs, and unlock the key to innovative problem-solving.

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Scratch (Age Group: 6-10 years)

Day 1-2: Introduction to Scratch

- Overview of Scratch interface
- Creating a simple sprite and backdrop

Day 3-4: Basic Movements and Events

- Using motion blocks
- Understanding events (e.g., when green flag clicked)

Day 5-6: Adding Interactivity

- Using sensing blocks
- Simple interactive project

Day 7-8: Loops and Animations

- Using repeat loops
- Creating animations

Day 9-10: Conditions and Variables

- If-else statements
- Introduction to variables

Day 11-12: Creating Simple Games

- Planning a basic game
- Implementing game logic

Day 13-14: Adding Complexity

- More complex game mechanics
- Using multiple sprites and backdrops

Day 15: Project Development

- Students create their own projects
- Instructor guidance and support

Day 16: Showcase and Feedback

- Presenting projects
- Peer and instructor feedback

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Python (Age Group: 10-16 years)

Day 1-2: Introduction to Python

- Installing Python and setting up
- Basic syntax and “Hello, World!”
- Numbers, strings, and Booleans and Basic operations

Day 3-4: Control Structures

- If-else statements & for and while loops

Day 5-6: Lists and Tuples

- Creating and accessing list & tuples

Day 7-8: Functions

- Defining and calling functions
- Parameters and return values

Day 9-10: Dictionaries and Sets

- Creating and using dictionaries
- Basic operations with sets

Day 11-12: Classes and Objects

- OOP Concepts, Abstraction, Encapsulation, Inheritance, Polymorphism

Day 13-14: Introduction to Modules

- Using built-in modules
- Creating simple projects

Day 15-16: Project Development

- Developing a small project with guidance
- Showcasing and discussing projects

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Benefits of this course:

- Digital Literacy: Learning to code enhances campers' digital literacy skills,
- preparing them for the increasingly technology-driven world.
- Job Opportunities: Coding proficiency opens up a wide range of career
- opportunities in fields such as software development, web development, data
- science, and cybersecurity.
- Entrepreneurial Skills: Programming skills empower campers to create their own
- tech startups and pursue entrepreneurial ventures.
- Mathematical Understanding: Coding often involves mathematical concepts
- such as algorithms, patterns, and logical operations, enhancing mathematical
- thinking.
- Computational Thinking: Campers develop computational thinking skills, which
- are essential for understanding how to process and analyse data efficiently.

By the end of this course, your child will have a strong grasp of basic coding principles, including problem-solving, logic, and programming languages. They will develop the skills to create their own simple programs and projects, fostering their analytical thinking and creativity. Join us on this coding adventure, where innovation meets imagination, and every line of code opens new possibilities.