



## »» Basic - 16 Sessions

Variables, Data Types, Strings  
Operators, Conditions, Loops  
Lists, Tuples, Functions

Software Used:

Google Colab Environment will be used in the browser

## »» Advanced - 32 Sessions

Turtle Graphics  
Python Game Development with Pygame Zero  
Critical Thinking Challenges

Software Used:

Visual Studio Code, Mu Editor

## »» Introduction to Python

To learn about print function. What is comment? How is it useful?

## »» Variables & Data Types

What are variables? How to initialise a variable?

To understand basics about data types. What is type conversion?

## »» Arithmetic operators & String Operations

Basic Math Operations. What is Modulo? Floor division versus division

How to apply arithmetic operations to non-numeric types?

## »» String length , Indexing & Comparison operators

How do you find the length of a string? What is indexing and how does it work? Comparison operators with examples.

## »» Input function

How to get input from user? Convert Miles to Kilometres. Temperature Converter.

## »» Conditions

What are conditional statements? How to Check Multiple Conditions in a Python if statement?

## »» Case conversion & Logical operators

Why is converting strings to lowercase or uppercase a helpful way to compare strings? Learn to work with logical operators.

## »» Module, Function, List

How to generate a random number to develop a quiz game?

How to store a sequence of numbers? How do we declare a list?

## »» List functions & Tuples

What are 7 key functions of a list? How to print a section of the list?

What is the difference between list & tuple?

## »» Loops ( for & while )

Why do we need loops?

For and while loops: understanding the differences.





➤➤ Basic Shapes & Spirals

➤➤ Polygons

➤➤ Star & Star Spiral

➤➤ Rosette

➤➤ Olympic Rings

➤➤ Spider Web, Concentric Circles

➤➤ Car , Traffic Lights

➤➤ Smiley , Rainbow

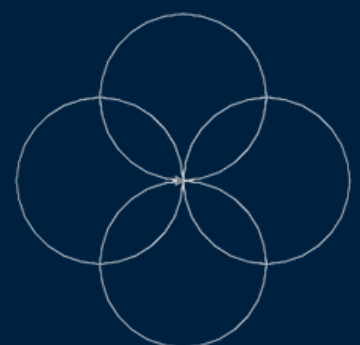
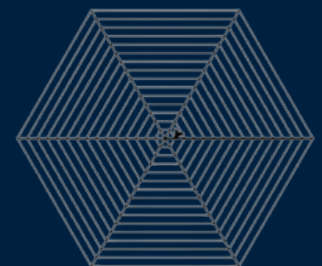
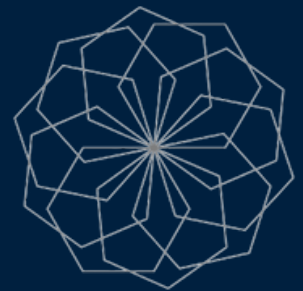
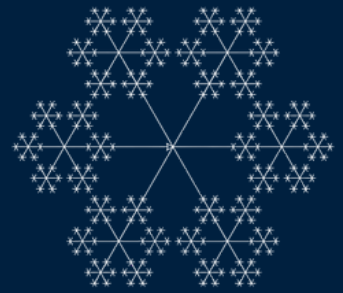
➤➤ Cube & Chessboard

➤➤ Pearl Necklace , Heart , Clock

➤➤ Write & Numinput

➤➤ Fractal Snowflake , Fractal Tree

➤➤ Functions in turtle programming





- Introduction - Backdrop & Sprite
- Move & Costume Animation
- Clicker Game
- Chase Game
- Rotate Animation & Hypnotising effect
- Scrolling Background
- Balloon Flight Game
- Space Invaders
- Enemy Chase
- Dynamic Sprite Creation
- Make a Sprite Jump
- Rainfall Animation
- Dot to Dot



»» Jumping Game

»» Running Animation

»» Pac-Man

»» Flappy Copter

»» Sleeping Dragons

»» Penguin Animation

»» Atari Breakout

»» Simon Says

