

Python Workshop Course Content

Techfest is the annual science and technology festival of IIT Bombay.

Following is the basic outline of the **in-person** workshop that would be happening at
Techfest in IIT Bombay

The new IIT Bombay Techfest Python Workshop will take you through Python Programming through hands-on coding and interesting Projects, you will learn the fundamental concepts and develop multiple Projects to master programming syntax and thinking. This workshop will help you jump start your Programming journey and open paths for new Learning.

PREREQUISITES

Before Attending the workshop

Workshop will start from the basics, You need not know any programming beforehand. Its good to have basic Computer knowledge

During the Workshop

A laptop, knowledge of how to use a laptop, A code editor (SubLime Text 3 or any other that you are comfortable with), interest in learning Programming.

Day One

- Introduction to Programming
- Introduction to Python
- Installing Python in Local or using Google Colab Sheets
- Basic Python syntax and understanding Python terminal
- Python Variables and best practices
- Different Data Types
- How to Decide Which Data Type to use?
- Strings & Numbers
 - Sub strings
 - Searching in strings
 - Strings and number different functionalities
- Guess the number Game Project
- Booleans
- User Input
- If Elif Else conditions
 - If else
 - Elif

- And condition
- Or condition
- Joining multiple conditions
- One line conditions

BUFFER 10 mins

- For and While Loop
- While
- Do while
- Continue
- Break
- Infinite loops
- Expense Tracker (Project)
- User inputs expense and expense category
- user can request to check total expense and expense for a category

LUNCH BREAK 2 – 3

- Python Packages or Libraries
- Lists
- Why list
- How and when list
- List properties
- Python Quiz (Project)

Day Two

- Guess the Word Game (Hangman Game)
- Dictionaries or Hashmap
- Functions
 - How to define functions
 - args
 - kwargs
 - Why the need of Functions
 - Internal variables
- Create your own ToDo List on Python terminal (Project)
 - Error Handling using Try... .. Except
- Thought of the Day (Involves File reading) (Project)
 - Datetime library
 - Reading and writing Files using Python
- Tic Tac Toe Game (Project)

LUNCH BREAK 2 – 3

- Introduction to openAI Python Package. Openai
- Classes
 - How to define classes
 - Private variables and functions
 - Difference between classes and objects
 - Basic use cases