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PYTHON SYLLABUS



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Month 1st

Basic Python

Module 1: Introduction

Installation & Basic program –

- Applications/Installing Features
- Variable
- Data types
- Keywords
- Operators
- Comments

Decision Making Statement –

- If statement
- If-else statement
- For loop
- While loop
- Break
- Continue
- Pass

Python String –

- Creating
- Indexing
- Splitting
- Reassigning String
- Deleting
- Operators
- Escape

Module 2: Features

List & Tuples –

- Declaration & Characteristics
- List Checking, Indexing & Splitting
- Lists Update, Adding & Operations
- Tuples Features & Forming
- Tuples Accessing & Deleting
- Tuples Slicing & Repetition
- Tuples Methods

Sets & Dictionary –

- Sets Created, Add, Update & Remove
- Set Operations
- Set Built-in methods
- Dictionary Created, add & Deleting
- Iterating Dictionary, Keys
- Built-in functions Dictionary
- Dictionary Methods

Functions & Files –

- File Handling & IO Files
- Open, Read & Close Files
- Calling a Function
- Pass by Reference
- Pass by Value
- Function Arguments
- Return Statement



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Module 3: Functions

Built-in Functions –

- Library Functions
- List of Functions
- Def Functions
- Lambda functions
- Lambda function with filter
- Lambda function with if-else
- Lambda function with Multiple Statement

Revision –

- Revision

OOPs Introduction –

- Object
- Class
- Method

Module 4: OOPs

OOPs Pilar –

- Abstraction
- Encapsulation
- Inheritance
- Polymorphism

OOPs Features –

- Class & Object
- Data Member
- Member Function
- Access Mode
- Constructors

Exception Handling –

- Try
- Custom
- General use exception



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Month 2nd

DSA Python

Module 5: Introduction

Recursion –

- Applications of Recursion
- Writing Base Cases in Recursion
- Tail Recursion
- Subset of a given string
- Printing all Permutations

Algorithm –

- Analysis of Algorithms
- Asymptotic Analysis
- Order of Growth
- Best, Average and Worst Cases
- Asymptotic Notations

Pointer & Structure –

- Pointer Memory Management
- Data Type
- In-built structure

Module 6: Operations

Array –

- Access
- Lenth
- Looping
- Update
- Adding
- Methods

Linked List –

- Create
- Insert
- Update
- Delete
- Traversal
- Lenth

Stack –

- Functions
- Implementation
- Push
- Pop



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Month 2nd

Module 7: Operations

Queue –

- Operation
- Implemented
- FIFO
- LIFO

Revision –

- Revision

Tree –

- Binary Tree
- Binary Search Tree
- AVL Tree
- Red Black Tree
- Ternary Tree
- n-ary Tree
- B Tree

Module 8: Operations

Graph –

- Plotting a Line
- Plotting Two or More Lines on the Same Plot
- Customization of Plots
- Plotting Matplotlib Bar Chart

Graph –

- Plotting Matplotlib Histogram
- Plotting Matplotlib Scatter plot
- Plotting Matplotlib Pie-chart
- Plotting Curves of Given Equation

Revision –

- Revision



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Month 3rd

Data Base Python

Module 9: Functions

Searching –

- Linear Search
- Binary Search
- Interpolation Search
- Jump Search

Revision –

- Revision

Sorting –

- Bubble Sort
- Selection Sort
- Insertion Sort

Module 10: Revision

Revision –

- Revision

Module 11: Database Graph

Mongo DB –

- Install
- Create, Execute
- Data enter
- Check Database

Problem Solving –

- Revision

Module 12: Revisions

Problem Solving/Revision