

# PYTHON CLASS SCHEDULE

FOR WEEKDAYS

TRAINER NAME: ABHISHEK GUPTA

CLASS TIMING - 8.00 AM TO 10.00 AM



python

## CLASS 0

- Induction class
- Explaining course
- Where contents will be shared
- Introduction to google classroom
- Introduction to Jupyter Notebook

## CLASS 1

- Git & Git hub
- What is VCS?
- What is Git and Github?
- What is DVCS?
- Why do we need Git and Git hub?
- Fork, clone, add, commit, push, pull
- Set up

## CLASS 2

- Why we use OS and Programming Language?
- High Level vs Low Level Programming Language
- Why are we Learning Python?
- Compiler vs Interpreter
- Compiled vs Interpreted Languages
- Different Types of Errors in Python
- Compile time vs Run time Errors in Python
- Source code, Byte code, Machine code
- How a Python Program runs on our system.
- Q&A Session

## CLASS 3

- Memory Management in Python
- Raw Memory Allocator, Object Specific Allocator
- Python Virtual Machine & Interpreter
- Memory deallocation in Python
- Automatic garbage collection in Python
- Memory management visualisation
- Input and Output functions in Python
- Python programming components
- Q&A Session

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## CLASS 4

- Literal, constant, variables, identifiers,
- Reserved Words, Expression Statements
- Blocks and Indentation in Python
- Comments in Python
- Data Types in Python
- Fundamental & Derived Data Types in Python
- Integers, Float, Complex, String, None, Boolean
- List, Tuple, Set, Froszenset, Dictionary, Bytes
- Bytarray, range
- Q&A Session
- Assignment on int, float, complex, boolean

## CLASS 5

- Mutability & Object Reusability in Python
- Operators in Python
- Arithmetic Operators
- Comparison Operator
- Equality Operator
- Logical Operator
- Bitwise Operators
- Assignment Operator
- Compound Assignment Operator
- Membership Operator
- Identity Operator
- Operator Precedence
- Q&A Session

## CLASS 6

- Conditional Statement in Python
- if, elif, else in Python
- Loop control in Python
- for and while in Python
- break and continue
- pass in Python
- 3-4 practice problem on loop
- Assignment on Flow Control

## CLASS 7

- String, string indexing, slicing and string methods
- count, split, strip, rstrip, lstrip, rsplit
- find, index, startswith, endswith, format
- upper, lower, swapcase, replace, rfind
- rindex, title, isalpha, isalnum, isupper
- islower, istitle, join, isspace, isprintable
- isdigit, isnumeric, isdecimal, etc.
- 3-4 practice problem on String
- Assignment on String

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## CLASS 8

- List Introduction
- Properties of List
- List Indexing and slicing
- Nested List
- List Methods
- Tuple and Tuple Methods
- 3-4 Practice problem on List
- Assignment on List

## CLASS 9

- Dictionary Introduction
- Properties of Dictionary
- Accessing elements in dictionary
- Nested Dictionary
- Shallow copy and deep copy
- Dictionary Methods
- 3-4 Practice problems on dictionary
- Assignment on Dictionary

## CLASS 10

- Function in Python - Introduction
- Why we need functions?
- How to define functions?
- Calling function
- return statements in Python
- Types of arguments in Python
- Scope vs Namespace

## CLASS 11

- Anonymous function - lambda
- filter, map and reduce function
- Iterators & Generators
- Modules in Python
- Importing module in Python
- Built-in Modules vs User defined modules
- Use of if \_\_name\_\_ == '\_\_main\_\_'
- Assignment on function

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## CLASS 12

- File Handling in Python
- Types of files in Python
- Why file handling is required in Python?
- open() & close() function
- Different modes in File Handling
- seek() and tell() methods
- Functions to read and write

## CLASS 13

- Exception Handling in Python
- Types of errors in Python
- Why do we need exception handling?
- try, except, else and finally block
- user defined Exceptions
- Regular Expression in Python
- Methods in regular expression
- Significance of special characters, quantifiers & symbols
- 5-6 examples on regular Expression
- **Assignment on Regular Expression**

## CLASS 14

- Introduction to Numpy in Python
- Array Creation, printing arrays
- Changing shape of an array
- Basic Operations, Universal function
- Indexing and slicing in Numpy array

## CLASS 15

- Array with structure data
- Array Broadcasting, Iterating over array
- Splitting array, stacking and concatenating array
- View and copy of array
- Case study on numpy array (Image analysis)
- **Assignment on Numpy array**

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## CLASS 16

- Introduction to pandas
- Pandas Series
- Pandas Dataframe
- Creating dataframe
- Addition and deletion
- Selection and indexing

## CLASS 17

- Iterate over dataframe
- Reshaping using pivot
- Concat and merge
- Groupby
- Handling missing data
- Sorting a dataframe
- stacking and unstacking
- Connecting to database
- Assignment on Pandas

## CLASS 18

- Introduction to Matplotlib
- Plotting using functional methods
- Plotting using object oriented method
- Creating multiple plots on same canvas
- Figsize, aspect ratio and DPI
- Saving figures
- Legends, labels & titles
- setting colors, linewidth and linetypes
- Line and marker style
- Plot range
- Special plot types
- Introduction to seaborn

## CLASS 19

- Distribution plots
- Categorical plots
- Regression plots
- Style and color
- Visualising linear relationship

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## CLASS 20

- 2 Case study on Data science modules

## CLASS 21

- Study Break

## CLASS 22

- Python Test

