

# PYTHON INTENSIVE COURSE



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TECHNOLOGIES

**TWEAK TALENT TECHNOLOGYS**  
TRANSFORM YOUR CAREER

1. Intro to Python
2. Installing Python
3. IDLE and Python Shell
4. Memory Management
5. Data Types and Variables
6. Numbers in Python
7. Operators in Python
8. Strings in Python
9. Containers
10. Conditional statements
11. Loops in Python
12. Break and continue statement in Python
13. Functions
14. Lambda Functions
15. OOPS
16. Modules
17. File Handling in Python
18. Exception Handling in Python
19. Advanced Concepts
20. Data Analytics



## INTRODUCTION TO PYTHON

- ✓ What is python - Scripting/Programming/Interactive/**Interpreter**
- ✓ Python use cases – **ML/DS, Easy to Deal with Data, Web Dev, Gaming**
- ✓ Python Timeline
- ✓ Features of Python – Readability ,Easy Debug, Free
- ✓ Versions of Python – Current Version 3.11

## GETTING STARTED

- ✓ Data Types, Keywords
- ✓ Static Data types and Dynamic Data types
- ✓ Fundamental Data Types
- ✓ Collection Types
- ✓ Number types
- ✓ Mutable Objects versus Immutable Objects
- ✓ Variables
- ✓ Naming Conventions
- ✓ Print(), Type(), Input() and Id() functions
- ✓ Type Casting

## STRING HANDLING

- ✓ What is String
- ✓ Single, double and triple quoted literals
- ✓ String indexing
- ✓ String Slicing
- ✓ Working with String Functions
- ✓ Working with String Methods
- ✓ Reversing a String
- ✓ String multiplication and concatenation

## OPERATORS

- ✓ Arithmetic Operators
- ✓ Relational Operators
- ✓ Logical Operators
- ✓ Assignment Operators
- ✓ Shorthand Assignment Operators
- ✓ Bitwise operators
- ✓ Membership Operators
- ✓ Identity Operators
- ✓ Precedence of operators
- ✓ Evaluating expressions

# COLLECTIONS

## LIST:

- ✓ What is list in python
- ✓ Traversing a list
- ✓ Accessing List Items Using Positive Indexing
- ✓ Accessing List Items Using Negative Indexing
- ✓ Unpacking List Items
- ✓ Slicing Items from a List
- ✓ Modifying Lists
- ✓ Checking Items in a List
- ✓ Adding Items to a List
- ✓ Inserting Items into a List
- ✓ Removing Items from a List, Pop, Del
- ✓ Clearing List Items
- ✓ Copying a List
- ✓ Joining Lists
- ✓ Counting Items in a List
- ✓ Finding Index of an Item
- ✓ Reversing a List
- ✓ Sorting List Items
- ✓ List Comprehension

## TUPLE:

- ✓ Creating a Tuple
- ✓ Tuple length
- ✓ Accessing Tuple Items
- ✓ Slicing tuples
- ✓ Changing Tuples to Lists
- ✓ Checking an Item in a Tuple
- ✓ Joining Tuples
- ✓ Deleting Tuples



## SETS:

- ✓ How to create a set
- ✓ Iteration over sets
- ✓ python set methods
- ✓ python set operations
- ✓ union of sets
- ✓ built-in functions with set

## DICTIONARY:

- ✓ How to create a dictionary
- ✓ Length of Dictionary
- ✓ Accessing Dictionary Items
- ✓ Adding Items to a Dictionary
- ✓ Modifying Items in a Dictionary
- ✓ Checking Keys in a Dictionary
- ✓ Removing Key and Value Pairs from a Dictionary
- ✓ Changing Dictionary to a List of Items -`dct.items()`
- ✓ Clearing a Dictionary
- ✓ Deleting a Dictionary
- ✓ Copy a Dictionary
- ✓ Getting Dictionary Keys as a List
- ✓ Getting Dictionary Values as a List

## Control Statements

- ✓ About Flow control
- ✓ Elements of flow control
- ✓ Block / Values
- ✓ Conditional Statements
- ✓ Simple if
- ✓ if... else
- ✓ If ... elif... Else
- ✓ Looping statements
- ✓ > While loop
- ✓ > while ...else
- ✓ > for ... Loop
- ✓ For... Else
- ✓ > using range () in for loop
- ✓ > working with infinite loops and nested loops
- ✓ Break Statement
- ✓ Continue Statement
- ✓ Pass statement

## Functions

- ✓ Defining a function
- ✓ Calling a function
- ✓ Function parameters
- ✓ Types of parameters
- ✓ Default, non-default, keyword, arbitrary, arbitrary-keyword (kwargs) arguments
- ✓ Recursion
- ✓ Return statement in functions
- ✓ Handling return values
- ✓ Global variables and local variables
- ✓ Scope of global variables and local variables
- ✓ Passing collections to a function

## LAMBDA functions

- ✓ lambda functions/anonymous functions
- ✓ filter(), map() and reduce()



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# OOPS CONCEPTS

## Introduction to OOPS programming

- ✓ OOPS principles
- ✓ Encapsulation
- ✓ Defining classes
- ✓ Creating objects
- ✓ Instance method
- ✓ Static method
- ✓ Class method
- ✓ Difference static and class methods
- ✓ Constructors
- ✓ Destructors
- ✓ Inheritance
- ✓ Types of inheritance
- ✓ Polymorphism (Overloading and overriding)
- ✓ Super () statement
- ✓ Built-in properties of class
- ✓ Inner classes

## Class variables

- ✓ Instance Variables
- ✓ Parameters
- ✓ Local variables
- ✓ Defining methods
- ✓ Diff between functions and method
- ✓ Compiling regular expressions
- ✓ Grouping
- ✓ Match Objects
- ✓ Match(), Search() and Sub() functions
- ✓ Matching versus searching
- ✓ Splitting a string
- ✓ Replacing text
- ✓ Flags

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## EXCEPTION HANDLING

- ✓ Syntax errors
- ✓ Runtime errors
- ✓ What is bug
- ✓ What is exception
- ✓ Need of exception handling
- ✓ Predefined exceptions
- ✓ Predefined exceptions hierarchy
- ✓ Try, except and finally clauses
- ✓ Named except block
- ✓ Default except block
- ✓ Handling multiple exceptions
- ✓ Nested try, except and finally blocks
- ✓ User defined exceptions
- ✓ Raise, assert statements

## ADVANCED CONCEPTS

- ✓ Python iterator
- ✓ Generator
- ✓ Decorators
- ✓ PIP
- ✓ Map
- ✓ Reduce
- ✓ Filter



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## FILE HANDLING:

- ✓ What is a file
- ✓ Opening a file
- ✓ Reading data from a file
- ✓ Writing data to a file
- ✓ Closing a file
- ✓ Working with the methods of file object
- ✓ Replacing the content of file
- ✓ Working with directories
- ✓ Handling io exceptions

## MODULES

- ✓ Math
- ✓ Json
- ✓ Date



## REGULAR EXPRESSIONS

- ✓ Introduction to regular expressions
- ✓ Simple Character matches
- ✓ Special Characters
- ✓ Character classes
- ✓ Quantifiers
- ✓ Forming regular expressions
- ✓ Matching at beginning or end
- ✓ Greedy matches

## DATA ANALYTICS

- ✓ Pandas
- ✓ NumPy
- ✓ Matplotlib



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