

Python Internship:

Week 1-2: Python Basics

1. Introduction to Python

- History and features of Python
- Setting up Python environment (installing Python, IDEs, etc.)
- Basic syntax and data types (strings, numbers, booleans, lists, tuples, dictionaries)

2. Control Structures

- Conditional statements (if-else, if-elif-else)
- Loops (for, while)
- List comprehensions

3. Functions

- Defining and calling functions
- Function arguments and return types
- Lambda functions

4. Practice exercises:

- Basic programming exercises (e.g., calculator program, quizzes)

Week 3-4: Data Structures and File Handling

1. Lists and Tuples

- Indexing and slicing
- List methods (append, insert, remove, sort, etc.)
- Tuple methods

2. Dictionaries and Sets

- Dictionary methods (keys, values, items, etc.)
- Set methods (add, remove, union, intersection, etc.)

3. File Handling

- Reading and writing text files
- Reading and writing CSV and JSON files
- Exception handling

4. Practice exercises:

- Data processing exercises (e.g., reading and writing CSV files, data cleaning)

Week 5-6: Object-Oriented Programming (OOP) and Modules

1. Classes and Objects

- Defining classes and objects
- Attributes and methods
- Constructors and destructors

2. Inheritance and Polymorphism

- Inheritance
- Method overriding and overloading
- Polymorphism

3. Modules and Packages

- Importing modules and packages
- Creating and using modules and packages

4. Practice exercises:

- OOP exercises (e.g., bank account system, game development)

Week 7-8: Data Analysis and Visualization

1. Introduction to Pandas

- DataFrames and Series
- Data manipulation and cleaning

2. Data Visualization

- Introduction to Matplotlib and Seaborn
- Plotting and visualizing data

3. Data Analysis

- GroupBy and pivot tables
- Data merging and joining

4. Practice exercises:

- Data analysis exercises (e.g., analyzing a dataset, creating visualizations)

Week 9-10: Web Development and Project Work

1. Introduction to Django

- Creating a simple web application
- Routing and templates

2. Project Work

- Work on a real-world project