Content of the First Session

1. **Introduction to Python**
    - Key Features of Python
    - Importance of Python
    - Important Libraries and Frameworks
    - Applications of Python

2. **Variables in Python**
    - print() Function / Built-in function
    - What is variable
    - Variables Names
    - Declaring Variables and Assigning Values
    - Object References
    - Object Identity
    - Multiple Assignments
    - Python Variables Types
    - Delete a variable
    - The maximum possible value of an integer in Python
    - Print single and multiple variables in Python

3. **Statements and Expressions**
    - Definition of statements and expressions
    - Types of statements (e.g., assignment, conditional)

4. **Operators in Python**
    - Arithmetic Operators
    - Comparison (Relational) Operators
    - Logical Operators
    - Bitwise Operators
    - Assignment Operators
    - Identity Operators
    - Membership Operators

5. **Python Indentation**
6. **Comments in Python**

7. **Python Data-Types**
    - Mutable vs Immutable

- ***String Data Structure***
    - Defining Strings in the Python
    - Accessing characters of a String (Indexing)
    - Strings are immutable(Reassigning String)
    - Strings Slicing
    - String Concatenation
    - Create large Strings
    - Operations on string Data structure
    - Strings method
    - String Deletion
    - String Membership test

- ***List Data Structure***
    - How to create lists?
    - Proof of concepts: Lists are heterogeneous, ordered, mutable, nested, and allow duplicate elements
    - Different ways to access list elements
    - Slicing Lists
    - List concatenation and repetition
    - Modifying/Adding elements to a List using append(), extend(), and insert() methods
    - Removing elements from a list using pop() and remove() methods
    - Converting string object to list and vice-versa (using type casting, split() and join())
    - Aliasing vs Shallow Copy vs Deep Copy
    - Sorting a list and Custom sorting

- ***Dictionary Data Structure***
    - How to create dictionaries?
    - Proof of concepts
    - Accessing elements of a dictionary
    - Adding/Modifying elements of a dictionary
    - Removing elements from a dictionary
    - Dictionary, tuple, and list conversions
    - Sorting Dictionary values
    - Aliasing vs Shallow Copy vs Deep Copy

- ***Tuple Data Structure***
    - How to create Tuples?

- Proof of concepts: Tuples are heterogeneous, ordered, nested, immutable, and allow duplicate elements
- What are the different ways to access elements of a Tuple?
- Slicing a Tuple
- Tuple concatenation and repetition
- Being immutable, you cannot add elements to a Tuple
- Being immutable, you cannot remove elements from a Tuple
- Converting string object to Tuple and vice-versa (using type casting, split() and join())
- Tuple methods
- Sorting a Tuple using the built-in sorted() function

8. **Type-casting in Python**
    - Implicit Type-casting
    - Explicit Type-Casting

9. **Resources**
    - Variables: https://realpython.com/python-variables/
    - Operators and Expressions: https://realpython.com/python-operators-expressions/
    - List: https://realpython.com/python-list/
    - Strings: https://realpython.com/python-strings/
    - Dictionary: https://realpython.com/python-dicts/
    - Tuple: https://realpython.com/python-tuple/