**WEEK 1: Presentation TOPIC: PYTHON VARIABLES, DATA TYPES, DATA STRUCTURES**

**1.WHAT ARE THE PYTHON DATA TYPES?**

* Numeric data types: int, float, complex.
* String data types: str.
* Sequence types: list, tuple, range.
* Binary types: bytes, byte array, memory view.
* Mapping data type: dict.
* Boolean type: bool.
* Set data types: set, frozen set. Python Numeric Data Type.

**2.WHAT ARE THE DIFFERENT TYPES OF DATA STRUCTURE? AND MENTION THE DIFFERENCES BETWEEN THEM WITH EXAMPLES?**

#**Lists** - Flexible -       Ordered, changeable (Mutable), Duplicates - 1st choice - []

#**Tuples** - Semi Flexible - Ordered, not changeable(immutable), Duplicates - ()

#**Sets** - Strict - not ordered, not changeable, No duplicates- {}

#**Dictionary** - Semi Flexible - Ordered, Changeable, no Duplicates - {key: value}

**3.HOW DOES MEMORY MANAGEMENT WORK IN PYTHON?**

Memory allocation can be defined as **allocating a block of space in the computer memory to a program**

 The function calls and the references are stored in the stack memory whereas all the value objects are stored in the heap memory.

**4.WHAT IS A DYNAMICALLY TYPED LANGUAGE?**

**5. HOW TO REVERSE A LIST?**

**6.DIFFERENCE BETWEEN LIST AND TUPLE?**

|  |  |
| --- | --- |
| **List** | **Tuple** |
| It is mutable | It is immutable |
| The implication of iterations is time-consuming in the list. | Implications of iterations are much faster in tuples. |
| Operations like insertion and deletion are better performed. | Elements can be accessed better. |
| Consumes more memory. | Consumes less memory. |
| Many built-in methods are available. | Does not have many built-in methods. |
| Unexpected errors and changes can easily occur in lists. | Unexpected errors and changes rarely occur in tuples. |

Unexpected errors and changes rarely occur in tuples. 

**7.HOW TO REVERSE A STRING?**

x="universe"

x[::-1]

'esrevinu'

8.HOW TO SHOW ALTERNATIVE IN A STRING?

9.WHAT IS VARIABLE?

10.**WHAT IS MEMORY MANAGEMENT? AND EXPLAIN THE PARTS OF MEMORY ALLOCATION**?

Memory management is **the process of controlling and coordinating a computer's main memory**. I