### Assignment 1.1- Interview Questions

### 1.What are the common built-in data types in Python?

### There are several built-in data types in Python.  These data types can be grouped into the following categories-

|  |  |
| --- | --- |
| Text Type: | str |
| Numeric Types: | int, float, complex |
| Sequence Types: | list, tuple, range |
| Mapping Type: | dict |
| Set Types: | set, frozen set |
| Boolean Type: | bool |
| Binary Types: | bytes, byte array, memory view |

**2. What is the meaning of mutability? Examples of mutable data types?**

Mutability means data types can be modified, appended or sliced. List, set, and dict are mutable data types.

**3. What is the meaning of immutability? Examples of immutable data types?**

Immutability means data types remain constant and cannot be modified in any manner.

Tuple, int, float, str, None, bool etc are immutable data types

**4.What are lists and tuples? What is the key difference between the two?**

**Lists**and **Tuples** are both s**equence data types** that can store a collection of objects in Python. The objects stored in both sequences can have **different data types**. Lists are represented with **square brackets**, while tuples are represented with **parentheses**.

The key difference between the two is that while **lists are mutable**, **tuples** on the other hand are **immutable** objects. This means that lists can be modified, appended or sliced on the go but tuples remain constant and cannot be modified in any manner.

**5. What are the Python operators? What are the different types of operators?**

Operators are used to perform operations on variables and values. The different types of operators are as follows:

* Arithmetic operators
* Assignment operators
* Comparison operators
* Logical operators
* Identity operators
* Membership operators
* Bitwise operators

**6. What are the basic rules of operator precedence in Python?**

The basic rule of operator precedence in Python is as follows:

1. Expressions must be evaluated from left to right.
2. Expressions of parenthesis are performed first.
3. In Python the operation precedence follows as per the acronym PEMDAS:

* Parenthesis
* Exponent
* Multiplication
* Division
* Addition
* Subtraction

**7. Is it possible to change the order of evaluation in an expression?**  
  
Yes, it is possible to change the order of evaluation of an expression. Suppose you want to perform addition before multiplication in an expression, then you can simply put the addition expression in parenthesis.

**8. What is an expression?**  
A logical line of code that we write while programming, is called expressions. An expression can be broken into operator and operands. It is therefore said that an expression is a combination of one or more operands and zero or more operators that are together used to compute a value.

### 9. What are the python conditional statements? What are the three main conditional statements in Python?

Conditional statements are the programming statements which alter the course of execution based on a condition.

if, elif, and else are the three main conditional statement. Conditional Statements are also called Control Statements.

**10. What does elif mean?**  
It means else if. It is used after an if statement, to do another comparison.

**11. How are if, elif, and else blocks defined?**  
All blocks in Python are defined by indenting. All lines of a particular code block must have the same level of indenting.

**12. What are the two major loop statements?**  
  
for and while. A for loop is used for iterating over a sequence (that is either a list, a tuple, a dictionary, a set, or a string). With the while loop we can execute a set of statements as long as a condition is true.

**13. How is the body of a loop defined?**  
The body of the loop is defined by indentation.

**14. Under what circumstances would you use a while statement rather than for?**  
The while statement is used for simple repetitive looping and the for statement is used when one wishes to iterate through a list of items, such as database records, characters in a string, etc.

**15. Explain the use of break and continue in Python looping.**  
The break statement stops the execution of the current loop, and transfers control to the next block. The continue statement ends the current block’s execution and jumps to the next iteration of the loop.

**16. What is the trade-off when using while loops for looping?**

While loops are more flexible since you explicitly set the start and end conditions, but they require more setup than for loops.

**17.What is the function in Python?**

A function is a block of code which only runs when it is called.

You can pass data, known as parameters, into a function.

A function can return data as a result.

**18.What are the function arguments?**

Information can be passed into functions as arguments.

Arguments are specified after the function name, inside the parentheses. You can add as many arguments as you want, just separate them with a comma.

**19.What are rules for local and global variables?**

Local variables: If a variable is assigned a new value anywhere within the function's body, it's assumed to be local.

Global variables: Those variables that are only referenced inside a function are implicitly global.

**20.Differenciate between lambda and def?**

Lambda Vs. Def.

1. Def can hold multiple expressions while lambda is a uni-expression function.
2. Def generates a function and designates a name to call it later. Lambda forms a function object and returns it.
3. Def can have a return statement. Lambda can’t have return statements.
4. Lambda supports to get used inside a list and dictionary.