

Assignment - 2

Qn-1- Discuss the Python data Variables and operators.

- Variables:- Variables is a name of memory location where we store program's data during execution of program.

- Variable name is any combination of alphabets (a to z or A to Z), digits (0 to 9) and underscore (-)
- No other symbol is allowed
- Valid variable name cannot start from a digit.
- Variable Name cannot be a keyword.
- In python we do not need to write data type. Python automatically store detect which type of data to be store

Ex. $n = 5$

`str = "Ritik"`

operators:- Which Operator is a symbols that can be used to perform mathematical, relational, conditional or logical manipulations.

following are some common operators in python.

- Arithmetic operators :- +, -, *, / etc
- Assignment operators :- =, +=, *= etc
- Comparison operators :- ==, >, >=, <, <= etc
- Logical operators :- and, or, not.

Qn-2

Qn-3-

Qn-4-

Qn-2 Discuss the slicing with different examples.

String Slicing :- A string in python can be sliced for getting a part of the string.

Consider the following string.

name = `"R I T I K"` \Rightarrow length = 5

$0 \ 1 \ 2 \ 3 \ 4$

$-5 \ -4 \ -3 \ -2 \ -1$

The index in a string starts from 0 to (length-1) in Python.

In order to slice a string, we use the following syntax

`s1 = name [int start : int end]`

\rightarrow first index included and last index is not included.

name = "R I T I K" \rightarrow index of space is omitted

`print(name[0 : 3])` # output = "R I T"

`print(name[1 : 3])` # output = "I T"

Qn-3. Example for copying a List to another

`l1 = ["sidik", 5, "ad"]`

`l2 = []`

`l2 = l1` \rightarrow it is equal to copy out one object

`print(l1)`

`print(l2)`

Qn-4. `l1 = ["apple", "banana", "Orange", "mango", "grapes", "Litchi", "kiwi"]`

`print("The first three items in the list are", l1[0 : 3])`

`print("Three Items from the middle of the list are", l1[2 : 5])`

print ("Last Three items in the list are", L1 [4:7])

Qn-5- alien_color = "green"

a) if alien_color == "green":

 print ("You just earned 5 points!")

~~else~~

b) alien_color = "red"

if alien_color == "green":

 print ("You just earned 5 points!")

Qn-6 Discuss the Iteration control instructions, Break, continue & Pass with examples.

Ans - Iteration control Instructions :- Or Simply Loops

Sometime we want to repeat a set of statements in our program for instance : (Print 1 to 100 times)

Loops make it easy for a programmer to tell the computer , which set of instructions to repeat and how

Types of Loops in Python

i) ~~For~~ These are two types of loops in Python

ii) while loop

iii) for loop

While loop:-

Syntax :- while condition :

 # Body of the Loop

Ex- *i = 1*
 $\text{while}(i <= 50)$
 print (*i*)
 $i = i + 1$

for Loop:- A for Loop is used to iterate through a sequence list, tuple or string

Ex- $l = [1, 7, 8]$

break :- break is used to come out of the loop when encountered. It instructs the program to

Exit the loop now.

Ex for *i* in range (0, 80):
 print (*i*)
 if (*i* == 3)

The continue statement is used to stop the

current iteration of the loop

and continue with the next one. It instructs the program to "skip the iteration."

Ex for *i* in range (4):

print ("Hello")

if *i* == 2:

continue

print (*i*)

pass statement :- pass is a null statement in python
It instructs to "Do nothing"

Ex - `l = [1, 7, 8]`
for item in l:

Ques-7 What do you mean by concatenation in python?

Ans. Concatenation means joining strings together end-to-end to create a new string. To concatenate strings we use the + operator.

Ex `name = ("Ritik")`
`print("Hello Good Morning" + name)`

Ques-8 Discuss the whitespace in brief.

In computer programming, whitespace is any character or series of characters that represent horizontal or vertical space in typography. When rendered a whitespace character does not correspond to a visible mark, but typically does occupy an area on a page.

In the context of python, it means tabs and spaces and most important indentation.

Ex `def main():`

...
...
`print("Hello")`

Whitespace
or
indentation

Ques- What is type error?

Ans- In Python a "Typeerror" occurs when you use different data types in an operation.

Ex `n = int ("End")`

`m = int(input("Enter a number \n"))`

`r = m / 2`

`print(r)`

Output:-

Enter a number

Ritik

TypeError: 'String' object is not callable

Ques- How to define comment in python?

Ans- Comments are used to write something which the programmer does not want to execute.

Types of Comments:-

1- Single Line Comments:- Write using #

Ex- `# This is the program of Addition of two Numbers`

`a = 5`

`b = 6`

`print(a+b)`

2- Multi Line Comments:- Called DocString. Write using
''' comment '''

Ex. " This is the program that is used to print Table of 2 "

$a = 2$

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for i in range(1, 11):
    print(f" {a} X {i} = {a * i}")
```