20 May

**Python Basic - 1**

Q.1. What are keywords in python? Using the keyword library, print all the python keywords.

**Answer:**

Import keyword

print(keyword.kwlist)

Q.2. What are the rules to create variables in python?

**Answer:**

1. variable name must start with a letter or the underscore character
2. variable name cannot start with a number
3. variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and \_ )
4. Variable names are case-sensitive (age, Age and AGE are three different variables)
5. variable name cannot be any of the Python keywords.

Q.3. What are the standards and conventions followed for the nomenclature of variables in python to improve code readability and maintainability?

**Answer:**

We have to use lowercase with underscores for variable names, choose descriptive names, avoid single-character names (except for counters/iterators), be consistent in naming conventions, use type hints (PEP 484), and reserve single leading underscores for weak internal use.

Q.4. What will happen if a keyword is used as a variable name?

**Answer:**

SyntaxError: invalid syntax

Q.5. For what purpose def keyword is used?

**Answer:**

Use the def keyword to define functions in Python.

Q.6. What is the operation of this special character ‘\’?

**Answer:**

The backslash (\) character in Python is used as an escape character. It indicates that the character following it has a special meaning.

Q.7. Give an example of the following conditions:

(i) Homogeneous list

(ii) Heterogeneous set

(iii) Homogeneous tuple

**Answer:**

homogeneous\_list = [1, 2, 3, 4, 5]

heterogeneous\_set = {1, 'apple', 3.14, (1, 2, 3)}

homogeneous\_tuple = ('apple', 'banana', 'orange')

Q.8. Explain the mutable and immutable data types with proper explanation & examples.

**Answer:**

**Mutable data types:**

Mutable data types are those whose values or contents can be changed or modified after their creation.

Ex: list

**Immutable data types:**

Immutable data types are those whose values or contents cannot be changed or modified after their creation.

Ex: tuple,string.

Q.9. Write a code to create the given structure using only for loop.

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**Answer:**

def triangle(n):

k = n - 1

for i in range(0, n):

for j in range(0, k):

print(end=" ")

k = k - 1

for j in range(0, i + 1):

print("\* ", end="")

print("\r")

n = 5

triangle(n)

Q.10. Write a code to create the given structure using while loop.

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**Answer:**

rows = 5

for i in range(rows, 0, -1):

for j in range(rows - i):

print(" ", end="")

for k in range(2 \* i - 1):

print("|", end="")

print()