**20 May**

**Python Basic - 1**

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

Ans 1) In Python, keywords are reserved words that have special meanings and cannot be used as identifiers in the code. These keywords are used to define the syntax and structure of the Python language.

Import keyword

#Get the list of python keyword

keywords = keyword.kwlist

#print the python keywords

for keyword in keywords:

print(keyword)

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

Ans 2: In Python, variables are used to store data values. Here are the rules for creating variables in Python:

**Variable Name:** The name of the variable must start with a letter (a-z, A-Z) or an underscore (**\_**). It can be followed by letters, digits (0-9), or underscores.

**Case Sensitivity:** Python is case-sensitive, so abc, Abc and ABC are all different variables.

**Reserved Words:** We cannot use reserved keywords as variable names. These are the words that Python has special meanings for.

**No Special Characters:** Variable names cannot contain special characters such as **!**, **@**, **#**, **$**, **%**, etc.

**No Space:** Variable names cannot contain spaces. We can use underscores to represent spaces if needed.

Q.3. What are the standards and conventions followed for the nomenclature of variables in

python to improve code readability and maintainability?

Ans 3: Here are some common conventions followed by Python developers:

**Use Descriptive Names:** Choose variable names that are descriptive and accurately represent the data or purpose of the variable.  
  
**Use lowercase with underscore (snake\_case):** Python conventionally uses lowercase letters with underscores to separate words in variable names.

**Avoid single letter name:** Single-letter variable names can be ambiguous and don't provide much context. However, they are commonly used for loop counters or iterators.

**Use meaningful abbreviation sparingly:** While descriptive names are preferred, it's acceptable to use common and easily understandable abbreviations when they improve readability without sacrificing clarity.

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

Ans 4: If we attempt to use a Python keyword as a variable name, we will encounter a syntax error. Python's interpreter will flag the keyword as an illegal identifier and raise an error indicating that the syntax is invalid.

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

Ans : ‘def’ keyword is used to define any function in python.

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

Ans 6: In Python, the backslash (\) is used as an escape character.

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

(i) Homogeneous list

Ans : Homogeneous list in the python is the list that contains elements of the same data type.

For eg :

List\_val = [1,2,3,5]

(ii) Heterogeneous set

Ans: Heterogeneous list in the python is the list that contains elements of the different data type. This includes ‘sets’ in python.

For eg:

hetero\_set = {1,’set’,0.5,(1,3,4)}

(iii) Homogeneous tuple

Ans : In Python, tuples are typically homogeneous, meaning they contain elements of the same or compatible types.

for eg:

hm\_tpl = (1,4,6,8,9)

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

Ans 8: In Python, data types can be categorized into two main groups based on whether their values can be changed after creation: mutable and immutable.

Immutable Data Type: Immutable data types are those whose values cannot be modified after creation. Any attempt to modify the value results in the creation of a new object. Immutable objects are generally safer to work with, as they are not subject to unintended changes.

For eg:

Int, float, str, tuple, bytes, bool

Mutable Data Type: Mutable data types, on the other hand, allow their values to be modified after creation. This means that the object itself can be changed without creating a new object.

For eg :

List, dict, set

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

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Ans 9: rows = 5

for I in range(1, rows+1):

for j in range(1,2\*i):

print(‘\*’,end=’’)

print()

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

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Ans 10: row = 5

count = row

while count >=1:

print(“|” \*(2 \* count -1))

count -=1