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

Ans - Keywords in Python are reserved words with predefined meanings. To print all Python keywords, use the `keyword` library: `import keyword` and `print(keyword.kwlist)`.

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

Ans - In Python, variables must start with a letter or underscore, can contain letters, numbers, and underscores, and are case-sensitive. They cannot start with a number or be a Python keyword.

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

Ans- In Python, variables are typically named using lowercase letters with words separated by underscores (snake\_case) to enhance readability and maintainability.

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

Ans - Using a keyword as a variable name in Python will result in a syntax error.

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

Ans - The "def" keyword in Python is used to define a function, indicating the start of a function's definition.

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

Ans - The backslash ('\') is an escape character in Python used to indicate special characters or sequences in strings, such as newline ('\n') or tab ('\t').

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

1. Homogeneous list
2. Heterogeneous set
3. Homogeneous tuple

Ans - (i) Homogeneous list:

A homogeneous list in Python is a list where all elements are of the same data type. Here's an example:

numbers = [1, 2, 3, 4, 5]

In this example, all elements in the list `numbers` are integers.

(ii) Heterogeneous set:

A heterogeneous set in Python is a set where elements can be of different data types. Here's an example:

my\_set = {1, 'apple', True, 3.14}

In this example, the set `my\_set` contains elements of different data types, including an integer, a string, a boolean value, and a float.

(iii) Homogeneous tuple:

A homogeneous tuple in Python is a tuple where all elements are of the same data type. Here's an example:

fruits = ('apple', 'banana', 'orange')

* 1. Explain the mutable and immutable data types with proper explanation & examples.
  2. Write a code to create the given structure using only for loop.

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Ans - rows = 5

for i in range(rows):

for j in range(i+1):

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

print()

* 1. Write a code to create the given structure using while loop.

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Ans - rows = 5

while rows > 0:

print('|' \* rows)

rows -= 1