QUES 1: How do you comment code in python?What are the different types of comments?

ANS : In python there are two types of comments:

1. Single Line Comment

   # this is an example of single line comment ,we use # symbol to write single line comment

2. Multiline comment

   ''' this is multiline comment
   we use triple apostrophe to write multiline comments'''

QUES2: What are variables in python ? How do you declare and assign values to the variables?

ANS: In Python ,Variables are used to store data values.They are like container that hold data . To create a variable ,just assign to its name the value of appropriate type.

FOE EXAMPLE: To create a variable namely STUDENT to hold student's name and variable AGE to hold student's age

```
Student = 'Arjun Singh'
Age = 19
```

QUES 3 : How do you convert one data type to another in python?

```python
In [6]: # we can covert one data type to another by using type conversion

        # variable = type()

        a = int(13.23)  # this will gives us inteager value
        a
Out[6]: 13
```

```python
In [8]: b = list((1,2,3)) #this will convert into list
        b
Out[8]: [1, 2, 3]
```

QUES 4: How do you write and execute a Python script from the command line?

To write and execute a Python script you can use the following steps:

1. Open a text editor of your choice (e.g., Notepad, Sublime Text, Visual Studio Code) and create a new file.

2. Write your Python code in the file. For example, let's say you want to create a script that prints "Hello, world!":

   python

   print("Hello, world!")

1. Save the file with a .py extension, such as script.py.

2. Open the command prompt (on Windows) or terminal (on macOS or Linux).

3. Navigate to the directory where you saved your Python script. Use the cd command followed by the path to the directory. For example, if your script is located on the desktop, you can use:

   bash cd Desktop

1. when you are in the right directory, you can execute the Python script using the python command followed by the script's filename. For example:

   bash python script.py

This will run the Python script, and you should see the output printed in the command prompt or terminal like as :

Hello, world!

QUES 5: Given a list my_list = [1, 2, 3, 4, 5], write the code to slice the list and obtain the sub-list [2, 3].

```python
In [2]: #Answer
        my_list = [1,2,3,4,5]
        print(my_list[1:3])

        [2, 3]
```

QUES 6 : What is a complex number in mathematics, and how is it represented in Python?

ANS: In terms of maths , complex numbers contain both real and imaginary part in it. for e.g. ---> 4+2i # here 4 is the real part and 2i is imaginary part in which i has a value of underoot of -1 .

In python , the imaginary number is represented as the same as in maths but the major difference is i is replaced by j for e.g. ----> 4 + 2j

QUES 7: What is the correct way to declare a variable named age and assign the value 25 to it?

```python
In [3]: Age = 25
        Age
Out[3]: 25
```

QUES 8: Declare a variable named price and assign the value 9.99 to it. What data type does this variable belong to?

```python
In [5]: price = 9.99
        # this data type type belongs to float (decimal numbers in python)
        # to further chech any variable data type you can use the type function:
        type(price)
Out[5]: float
```

QUES 9: Create a variable named name and assign your full name to it as a string. How would you print the value of this variable?

```python
In [6]: name = "Arjun Singh"
        print(name)

        Arjun Singh
```

QUES: Given the string "Hello, World!", extract the substring "World".

```python
In [13]: my_string = "Hello World"
         # we can pull out its substring by using string slicing method
         print(my_string[6:12])

         World
```

QUES 11: Create a variable named "is_student" and assign it a boolean value indicating whether you are currently a student or not.

```python
In [14]: is_student = True
```

```python
In [ ]:
```