Assignment : Assignment-2

Q1. How do you comment code in Python? What are the different types of comments?

Answer:
In Python, comments are used to explain code and are ignored by the interpreter.

- **Single-line comment**: Uses #

```python
CopyEdit
# This is a single-line comment
print("Hello")  # Inline comment
```

- **Multi-line comment**: Can be written using triple quotes ''' or """, though these are technically string literals, not true comments.

```python
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'''
This is a multi-line comment
used to describe multiple lines
'''
```

Q2. What are variables in Python? How do you declare and assign values to variables?

Answer:
Variables in Python are used to store data. You don't need to declare the type; Python assigns it automatically.

```python
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x = 10          # integer
name = "Alice"  # string
pi = 3.14       # float
```

Q3. How do you convert one data type to another in Python?

Answer:
Use type conversion functions:

```python
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```

```
int("5")          # Converts string to integer: 5
float("3.14")     # Converts string to float: 3.14
str(100)          # Converts int to string: '100'
list("abc")       # Converts string to list: ['a', 'b', 'c']
```

Q4. How do you write and execute a Python script from the command line?

Answer:

1. Write your code in a file with `.py` extension, e.g., `script.py`
2. Open command line and run:

```
bash
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python script.py
```

Make sure Python is installed and added to your system path.

Q5. Given `my_list = [1, 2, 3, 4, 5]`, slice to get `[2, 3]`:

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

Q6. What is a complex number in mathematics, and how is it represented in Python?

Answer:
A complex number has a real and imaginary part: `a + bj`

In Python:

```python
python
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z = 2 + 3j
print(z.real)    # Output: 2.0
print(z.imag)    # Output: 3.0
```

Q7. Correct way to declare `age` and assign `25`:

```python
python
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```

```
age = 25
```

Q8. Declare `price = 9.99`. What is its data type?

```python
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price = 9.99
print(type(price))  # Output: <class 'float'>
```

Q9. Declare `name` and assign full name. Print it:

```python
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name = "Umesh Kumar"
print(name)
```

Q10. Extract `"World"` from `"Hello, World!"`:

```python
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text = "Hello, World!"
substring = text[7:12]
print(substring)  # Output: World
```

Q11. Declare `is_student` and assign boolean value:

```python
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is_student = True  # or False depending on your status
```