Assignment2:

Q1. In Python, we can comment code using the hash symbol (#). There are two types of comments:

a)Single-line comments: These comments are used to provide a brief explanation or context for a single line of code. You can start a single-line comment with the hash symbol (#), and it will continue until the end of the line.

Example:

# This is a single-line comment

b)Multi-line comments: These comments are used to provide more detailed explanations or documentation for multiple lines of code. In Python, there is no specific syntax for multi-line comments like some other programming languages. However, you can use triple quotes (either single or double) to create a multi-line string, which can serve as a multi-line comment.

Example:

"""

This is a multi-line comment.

It can span across multiple lines.

"""

Q2. Variables in Python are used to store data values. You can declare a variable and assign a value to it using the following syntax:

variable\_name = value

Here's an example:

x = 10

In this example, the variable x is declared and assigned the value 10. Python is dynamically typed, so you don't need to explicitly declare the data type of the variable.

Q3. To convert one data type to another in Python, you can use type conversion functions or constructors. Here are some common type conversion functions:

int(): Converts a value to an integer.

float(): Converts a value to a floating-point number.

str(): Converts a value to a string.

bool(): Converts a value to a boolean.

Example:

x = 10

y = str(x) # Convert x to a string

z = float(y) # Convert y (which is a string) to a float

Q4. To write and execute a Python script from the command line, follow these steps:

a)Open a text editor and create a new file with a.py extension (e.g., script.py).

b)Write your Python code in the file.

Save the file.

c)Open a command prompt or terminal.

d)Navigate to the directory where the script is saved using the cd command.

e)Execute the script by typing python script.py and pressing Enter.

For example, if my script is named script.py, i would run it with the following command:

python script.py

Q5. To slice the list [1, 2, 3, 4, 5] and obtain the sub-list [2, 3], you can use the slicing syntax in Python. The slicing syntax is list[start:end], where start is the index to start slicing (inclusive), and end is the index to stop slicing (exclusive).

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

sub\_list = my\_list[1:3] # Slicing from index 1 (inclusive) to index 3 (exclusive)

print(sub\_list)

# Output: [2, 3]

Q6. In mathematics, a complex number is a number that comprises a real part and an imaginary part. In Python, complex numbers are represented by using the j to indicate the imaginary part.

Example:

z = 5 + 2j

In this example, z is a complex number with a real part of 5 and an imaginary part of 2. The j indicates the imaginary part.

Q7. The correct way to declare a variable named age and assign the value 25 to it is as follows:

age = 25

Q8. If you declare a variable named price and assign the value 9.99 to it, the data type of this variable is float. In Python, numbers with decimal points are considered as floating-point numbers.

price = 9.99

Q9. To create a variable named name and assign my full name to it as a string, I can write the following code:

name = "Subhajit Patra"

Replace "Subhajit Patra" with my actual full name.

To print the value of this variable, we can use the print() function:

print(name)

This will output my full name.

Q10. To extract the substring "World" from the string "Hello, World!", you can use string slicing. In this case, you can specify the start and end indices to extract the desired portion of the string.

string = "Hello, World!"

substring = string[7:12]

print(substring)

The output will be "World".

Q11. To create a variable named is\_student and assign it a boolean value indicating whether you are currently a student or not, you can write the following code:

is\_student = True

I Set True based on my student status.