Assignment_2

May 22, 2023

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Q1. How do you comment code in Python? What are the different types of comments?
Ans :-
In Python, you can comment code using the "#" symbol. Anything following the␣
 ↪"#" on a line is considered a comment and is
ignored by the Python interpreter. There are two types of comments in Python:

1. Single-line comments: These comments are used to explain code on a single␣
 ↪line.
   They start with "#" and continue until the end of the line.

    Example : # This is a single-line comment

2. Multi-line comments: These comments span multiple lines and are enclosed␣
 ↪between triple quotes (''' or """).

    Example :
    """
    This is a multi-line comment.
    It can span across multiple lines.
    """
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Q2. What are variables in Python? How do you declare and assign values to␣
 ↪variables?
Ans :-
Variables in Python are used to store data values. You can declare a variable␣
 ↪in Python by assigning a value to it using
the "=" operator. Python is dynamically typed, so you don't need to specify the␣
 ↪type of the variable explicitly.

Example : count = 10
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Q3. How do you convert one data type to another in Python?
Ans :-
In Python, you can convert one data type to another using type conversion␣
 ↪functions or constructors.
Here are some commonly used type conversion functions:
int(): Converts a value to an integer.
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float(): Converts a value to a floating-point number.
str(): Converts a value to a string.
list(): Converts a value to a list.
tuple(): Converts a value to a tuple.
bool(): Converts a value to a boolean.

Example:
# Converting a string to an integer
num_str = "10"
num_int = int(num_str)
print(num_int)  # Output: 10

# Converting a float to an integer
num_float = 3.14
num_int = int(num_float)
print(num_int)  # Output: 3
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Q4. How do you write and execute a Python script from the command line?
Ans :-
To write and execute a Python script from the command line, follow these steps:
1.        Open a text editor and write your Python code.
2.        Save the file with a ".py" extension, for example, "script.py".
3.        Open a command prompt or terminal.
4.        Navigate to the directory where the Python script is saved using the␣
 ↪cd command.
5.        Run the script using the command python script.py (replace "script.
 ↪py" with the actual filename).
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Q5. Given a list my_list = [1, 2, 3, 4, 5], write the code to slice the list␣
 ↪and obtain the sub-list [2, 3].
Ans :-
To slice the list [1, 2, 3, 4, 5] and obtain the sub-list [2, 3], you can use␣
 ↪the following code:

Program :
my_list = [1, 2, 3, 4, 5]
sub_list = my_list[1:3]
print(sub_list)  # Output: [2, 3]
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Q6. What is a complex number in mathematics, and how is it represented in␣
 ↪Python?
Ans :-
In mathematics, a complex number is a number of the form a + bi, where a and b␣
 ↪are real numbers, and i is the imaginary
unit (√-1). In Python, complex numbers are represented using the complex data␣
 ↪type.
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Example:
# Creating a complex number
z = 3 + 4j
print(z)  # Output: (3+4j)
# Accessing the real and imaginary parts
print(z.real)  # Output: 3.0
print(z.imag)  # Output: 4.0
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Q7. What is the correct way to declare a variable named age and assign the␣
 ↪value 25 to it?
Ans :-
The correct way to declare a variable named "age" and assign the value 25 to it␣
 ↪in Python is as follows:
age = 25
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Q8. Declare a variable named price and assign the value 9.99 to it. What data␣
 ↪type does this variable belong to?
Ans :-
Declare a variable named price and assign the value 9.99 to it.
Program :
price = 9.99
print("The data type of 'price' is:", type(price))

# Output : The data type of 'price' is: <class 'float'>
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Q9. Create a variable named name and assign your full name to it as a string.␣
 ↪How would you print the value of this
variable?
Ans :-

Program :
name = "Sanket Rathod"
print("My name is :", name)

# Output : My name is : Sanket Rathod
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Q10. Given the string "Hello, World!", extract the substring "World".
Ans :-
Program :
text = "Hello, World!"
substring = text[7:12]
print("The extracted substring is:", substring)

# Output : The extracted substring is: World
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Q11. Create a variable named "is_student" and assign it a boolean value␣
  ↪indicating whether you are currently a student or
not.
Ans :
Program :
is_student = True
print("I am currently student : ", is_student)

# Output : I am currently student : True
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