Assignment-1AsAssignment Questions

Q1. Create one variable containing following type of data:

(i) string —

# String

my\_string = "Hello, World!"

(ii) list

# List

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

(iii) float

# Float

my\_float = 3.14

(iv) tuple

# Tuple

my\_tuple = (50, 40, 30)

Q2. Given are some following variables containing data:

(i) var1 = ‘ ‘

A string with no character.

(ii) var2 = ‘[ DS , ML , Python]’ –The words are not enclosed in quotes ,so they are not considered as string literals.

(iii) var3 = [ ‘DS’ , ’ML’ , ‘Python’ ] —The variable contains a list with three elements,where each element is a string.

(iv) var4 = 1— The variable appears to contain a float number.

What will be the data type of the above given variable.

Q3. Explain the use of the following operators using an example:

(i) /

DIVISION OPERATOR

result = 10 / 3

print(result) # Output: 3.3333333333333335

(ii) %  (MODULO OPERATOR)

(Remainder)

remainder = 16 % 3

print(remainder) # Output: 1

(iii) // (FLOOR DIVISION OPERATOR)

result = 10 // 3

print(result) # Output: 3

(iv) \*\* (EXPONENTIAL OPERATOR)

result = 2 \*\* 3

print(result) # Output: 8

Q4. Create a list of length 10 of your choice containing multiple types of data. Using for loop print the element and its data type.

# Create a list of length 10 with multiple data types

my\_list = [1, 3.14, "Hello", True, [1, 2, 3], (10, 20), {"name": "John", "age": 30}, None, False, 5]

for element in my\_list:

print(f"Element: {element}, Data Type: {type(element).\_\_name\_\_}")

Q5. Using a while loop, verify if the number A is purely divisible by number B and if so then how many times it can be divisible.

def verify\_divisibility(a, b):

count = 0

# Verify if A is divisible by B

while a >= b and a % b == 0:

a = a // b

count += 1

return count

number\_A = 100

number\_B = 10

# Verify and get the count

result = verify\_divisibility(number\_A, number\_B)

if result > 0:

print(f"{number\_A} is purely divisible by {number\_B}.")

print(f"It can be divided {result} times.")

else:

print(f"{number\_A} is not purely divisible by {number\_B}.")

Q6. Create a list containing 25 int type data. Using for loop and if-else condition print if the element is divisible by 3 or not.

# Create a list containing 25 integer-type data

my\_list = [12, 7, 18, 25, 30, 9, 16, 21, 6, 13, 27, 14, 33, 22, 4, 10, 36, 15, 28, 17, 3, 20, 8, 31, 24]

# Using a for loop and if-else condition to check divisibility by 3

for num in my\_list:

if num % 3 == 0:

print(f"{num} is divisible by 3.")

else:

print(f"{num} is not divisible by 3.")

Q7. What do you understand about mutable and immutable data types? Give examples for both showing this property.

An immutable data type is a type of data that cannot be changed or modified after it created.

Examples-int,float,str,tuple etc.

A mutable data type is a type of data that can be changed or modified after it is created.

Example:

List

dict

set

Note:  Create your assignment in Jupyter notebook and upload it to GitHub & share that github repository link through your dashboard. Make sure the repository is public.

Data Science Masters 2.0