9_may_Assignment

August 17, 2023

[ ]:
```
Q1. Create one variable containing following type of data:
(i) string
(ii) list
(iii) float
(iv) tuple

Ans:
1. string_a = "shubhangi"
2. list = list=l[1,2,"shlok",7.5]
3. float = var_b = 75.4
4. tuple = var_tuple = [5,10,15,20,25]

Q2. Given are some following variables containing data:
(i) var1 = ' '
(ii) var2 = '[ DS , ML , Python]'
(iii) var3 = [ 'DS' , 'ML' , 'Python' ]
(iv) var4 = 1.
What will be the data type of the above given variable.

Ans:
(i) var1 = ' '  -->string
(ii) var2 = '[ DS , ML , Python]'  --->string
(iii) var3 = [ 'DS' , 'ML' , 'Python' ]  --->lists
(iv) var4 = 1.  ---> float

Q3. Explain the use of the following operators using an example:
(i) /
(ii) %
(iii) //
(iv) **

Ans:
1. / -division operator -used to perform division between two numbers and␣
 ↪returns quotient as floating point number
    eg. a=10
                b=2
                c=a/b
```

```
                print(c)

2. % -modulus operator - used to calculate remainder of the division between␣
 ↪two numbers.
        eg. a=10
                b=2
                c=a%b
                print(c)

3. // -floor division operator -used to perform division and returns quotient␣
 ↪as integer.
        eg. a=10
                b=2
                c=a//b
                print(c)

4. ** -exponentian operator -used to raise a number to a certain power.
        eg. a=10
                b=2
                c=a**b
                print(c)

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.
Ans:
               s=[10,20,10.5,"shubhangi",4+7j]
               for i in s :
                       print(i)


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.

a = int(input("enter the dividend"))
b = int(input("enter the divisor"))

count = 0

if b != 0:
    while a >= b:
        a =a- b
        count =count+ 1

    if a == 0:
        print(f"dividend is divisible by {b}.")
```

```
        print(f"It can be divided {count} times.")
    else:
        print(f"{a} is not divisible by {b}.")
else:
    print("Divisor (b) cannot be zero.")

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.

a = list(range(1,26))

if a != 0:
    for i in a:
        if i % 3 == 0:
            print(f"{i} is divisible by 3.")
        else:
            print(f"{i} is not divisible by 3.")
else:
    print(f"{a} cannot be zero.")


Q7. What do you understand about mutable and immutable data types? Give␣
 ↪examples for both showing
this property.
Immutable data types are those whose values cannot be modified after creation.␣
 ↪When you perform an operation that appears to modify an immutable object, it␣
 ↪actually creates a new object with the modified value. This property ensures␣
 ↪that the original object remains unchanged.
eg. l[1,2,3,'xyz',4]
    cannot change y character of xyz string

Mutable data types are those whose values can be modified after creation. This␣
 ↪means you can change their internal state without creating a new object.
eg. l[1,2,3,'xyz',4]
    can replace 4 value with any other value
```