23-09-2024

Training Day- 6

Data Types: **Are used to save or represent different types of values**.

Single Element/Single Valued: In Python, **single element** or **single-valued** structures or variables refer to data that contains exactly one item or value

int: Whole number: 2000, -80

float: Decimal point numbers: 5.0, 2.35

complex: complex numbers: real + imaginary: 2+3j

bool: True, False

NoneType: None

Multi Element/Multi Valued/ Iterators: len function can work only on iterators

str: single, double or triple quotes

list

tuple

dict

set

frozenset

Variables: Whose value vary in the program. Variables are data

storing elements: Variables are stored in RAM: RAM is a volatile memory. We can store the values in variables

EXAMPLE

```
x=5     #x is a variable of int type
x=2+3j  #x is a variable of complex type
x=True  #x bool type
```

Possible arguments in print:

print(values, variables, expressions, conditions, functions, classes)

……..New Program……..

```
# print(2000)
# print(2.5)
# print("CETPA")
```

……..New Program……..

```
# x="x"
# print(x,"x")
```

How Variables Are Created In Python: By assigning the values

```
x=5     #x int type variable
x="cetpa"   #x str type variable
```

……..New Program……..

```
# x=y     #NameError: name 'y' is not defined
# print(x)
```

……..New Program……..

```
# true=5
# print(true)
```

……..New Program……..

```
# 7=5     #SyntaxError:
```

……..New Program……..

```
# True=5          #SyntaxError: cannot assign to True
# print(True)
```

……..New Program……..

```
# x=true
# print(x)
```

……..New Program……..

```
# name="tiger"
# print("Name:",name)
```

"""

Possible arguments in print:

print(values, variables, expressions, conditions, functions, classes)

"""

……..New Program……..

```
# a,b=3,4
# s="CETPA"
# print(23,True,a,s,a+b,a>b,len(s),type(s))
```

……..New Program……..

```
# s="Welcome to company"
# print(len(s))
```

……..New Program……..

```
# x=2+3j
# print(type(x))
# print(x)
```

……..New Program……..

```
# x="CETPA"
# print(type(x))
# print(x)
```

STRINGS:

Single Line String: Single quote, double quotes or triple quotes

Multi Line String: Only triple quotes are allowed to make the strings

```
# x='Welcome to CETPA'
# print(x)
# x="Welcome to CETPA"
# print(x)
```

```
# x="'Welcome to CETPA"'
# print(x)
# x="""Welcome to CETPA"""
# print(x)
```

How To Take The Data From The User Or From The Screen:

We have a Radymade function**: input ( )**

Syntax:

```
input("Message for user")
var=input("Message for user")
```

……..New Program……..

```
# x=input("Enter Your Name:")
# print(x)
```

……..New Program……..

```
# x=input("What are you doing?")
# print(x)

# #New Program: future concept
# x=input("Enter 5 numbers: ").split()
# print(x)
# print(len(x))
```

input function always returns str type data in our program

```
"""
# x="5"
# print(x)

# #New Program
# x=input("Enter Your Name:")
# print(x,type(x))
# x=input("Enter Any Number:")        #x="1000"
# print(x,type(x))
```

……..New Program……..

Incorrect addition

```
# a=input("Enter First No:")  #a=5
# b=input("Enter Second No:") #b=7
# s=a+b
# print(s)
```

……..New Program……..

Incorrect addition

```
# a=input("Enter First No:")  #a="5"
# b=input("Enter Second No:") #b="7"
# s=a+b       #s="57" # print(s)
```