Variables and Functions

PYTHON PROGRAMMING COURSES

Including Python Compiler -Latvian

What is a Variable ?

- Variables are nothing but reserved memory locations to store values.
- Based on the data type of a variable, the python interpreter allocates memory and decides what can be stored in the reserved memory.

```
count = 500
marks = 85.5
name = " Peter "
```

Assigning Values to Variables

- This is how we create a variable called marks, which contains an integer value of 78.

  marks = 78 Answer for print(marks) is 78

- No need to specify the type of a variable when declaring one

```
Counter = 100        #An integer assignment
Miles      = 1000.0  # A floating point
Name     = “John”    # A string
Print (Counter)
Print (Miles)
Print (Name)
```

Naming Rules in Python Variables

- Python variables can only begin with a letter(A-Z/a-z) or an underscore(_).
- A variable name cannot contain spaces. python is case-sensitive, and so are Python identifiers.
- The rest of the identifier may contain letters(A-Z/a-z), underscores(_), and numbers(0-9).

```
name = "Amal ", Age = 25 , _marks = 50.8     # valid syntax
7abc =25 , $name = " abc ", mark s = 70      # invalid syntax
Name1 = " John "      # valid syntax
Name@ = " Peter “    # invalid syntax
```

What is a function?

- Function is a sequence of statements in a certain order, given a name.
- When called, those statements are executed.
- It provides code re-usability.

Function Types

- There are mainly four types of python functions.

1. User Defined Functions
2. Built –in Functions
3. Lamda Functions
4. Recursion Functions

- Let’s talk about Built-in and User Defined Functions.

Built- in Functions

- The Python interpreter has a number of functions and types built into it that are always available

abs()	delattr()	hash()	memoryview()	set()
all()	dict()	help()	min()	setattr()
any()	dir()	hex()	next()	slice()
ascii()	divmod()	id()	object()	sorted()
bin()	enumerate()	input()	oct()	staticmethod()
bool()	eval()	int()	open()	str()
breakpoint()	exec()	isinstance()	ord()	sum()
bytearray()	filter()	issubclass()	pow()	super()
bytes()	float()	iter()	print()	tuple()
callable()	format()	len()	property()	type()
chr()	frozenset()	list()	range()	vars()
classmethod()	getattr()	locals()	repr()	zip()
compile()	globals()	map()	reversed()	__import__()
complex()	hasattr()	max()	round()	

Print() Function

- The print() function prints the specified message to the screen, or other standard output device.

  print("hello !!!") – gives the output of hello !!!

```
print(1500)
print(3.5)
print("python programming")
print("Next function, please!")
```

Output

```
1500
3.5
python programming
Next function, please!
```

Input() Function

- The input() function allows user input and reads one line from standard input and returns it as a string.

```
a = input("Enter your name: ")
print(“Your name is: ", a)
```

- This would prompt you to enter any string and it would display same string on the screen.

```
Output
Enter your name: Kamal
Your name is: Kamal
```

User Defined Functions

- You can define functions to provide the required functionality.

```
def abc():
    "This prints hello and world string values"
    print("Hello")
    print("World")
    return;
```

The first statement of a function can be an optional statement

A Python function may optionally return a value

- Once you call the function you get the output results.

abc() → Hello World

Python Function with Parameters

- Parameters(Arguments) are specified after the function name, inside the parentheses “( )”.

```
# Function definition is here
def printme(abc):
"This prints a string value"
print(abc)
return;
# Now you can call printme function
printme("hello world")
printme("second call to the same
function")
```

Output
hello world
second call to the same function

Functions - Exercise

- Create two different functions for addition, Subtraction with two parameters for each function and call them to print the calculations.

```
def addition(num1,num2):
print("answer is: " ,num1+num2)
def subtraction(num1,num2):
print("answer is: " ,num1-num2)
addition(50,20)
addition(40,50)
addition(100,20)
subtraction(50,20)
subtraction(100,20)
subtraction(200,100)
```

Output

```
answer is: 70
answer is: 90
answer is: 120
answer is: 30
answer is: 80
answer is: 100
```

Lesson Summary

- Variable – Definition
- Assigning Values to Variables
- Function – Definition Input/Output Function
- User Defined Functions

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Thank You