Department of Social Statistics

Faculty of Humanities and Social Sciences

University of Sri Jayewardenepura

ITE/MIT 1213 Fundamentals of Programming

Tutorial – 05

Python Functions

A function is a block of code which only runs when it is called. You can pass data, known as parameters, into a function.

A function can return data as a result.

Creating a Function

In Python a function is defined using the def keyword:

Example

```
def my_function():
  print("Hello from a function")
```

Calling a Function

To call a function, use the function name followed by parenthesis:

Example

```
def my_function():
  print("Hello from a function")


my_function()
```

Arguments

Information can be passed into functions as arguments.

Arguments are specified after the function name, inside the parentheses. You can add as many arguments as you want, just separate them with a comma.

The following example has a function with one argument (fname). When the function is called, we pass along a first name, which is used inside the function to print the full name:

Example

```
def my_function(fname):
  print(fname + " Perera")


my_function("Lalani")
my_function("Thamali")
my_function("Lahiru")
```

Default Parameter Value

The following example shows how to use a default parameter value.

If we call the function without argument, it uses the default value:

Example

```
def my_function(country = "Norway"):
  print("I am from " + country)

my_function("Sweden")
my_function("India")
my_function()
my_function("Brazil")
```

Passing a List as an Argument

You can send any data types of argument to a function (string, number, list, dictionary etc.), and it will be treated as the same data type inside the function.

E.g. if you send a List as an argument, it will still be a List when it reaches the function:

Example

```
def my_function(food):
  for x in food:
    print(x)

fruits = ["apple", "banana", "cherry"]

my_function(fruits)
```

Return Values

To let a function return a value, use the return statement:

Example

```
def my_function(x):
  return 5 * x

print(my_function(3))
print(my_function(5))
print(my_function(9))
```

Exercise

1. Write a function to sum all the numbers in a list.
2. Write a function to find the maximum number in a list.
3. Write a function to check whether a number is even or odd.
4. Write a function to calculate the factorial of a number.
5. Write a function that takes two numbers and returns their product.
6. Write a function to count the number of vowels in a string.
7. Write a function to print all numbers divisible by 3 from 1 to 50.
8. Write a function that takes a list of numbers and returns a new list containing only the even numbers.
9. Write a Python function that takes the radius of a circle as input and returns both the area and perimeter of a circle.

   Area = πr^2
   Perimeter = $2\pi r$

10. Write a function input your age in years and display your age in days.
    Age in days = Age in years* 365