Hello, World!

EMT1111: Logic and Problem Solving | Fall 2016 | Dr. Mendoza

LESSON 6 (Labs): Python Functions

FUNCTION DEFINITION AND CALLS

Functions

Terminology

Function— A piece of code that can be called over and over

Function Call— The piece of a program that sends the computer to a function

Parameters—Extra information that you can give to a function to customize it

Functions: Lab Example #2 in Python

SONG

CHORUS1

CHORUS2

CHORUS1

CHORUS2

CHORUS1

Down by the station
Early in the morning
See the little pufferbellies
All in a row

CHORUS2

See the station master
Turn the little handle
Puff, puff, toot, toot
Off we go!

Python code:

```
def CHORUS1():
    print("Down by the station")
    print("Early in the morning")
    print("See the little pufferbellies")
    print("All in a row")
    print()

def CHORUS2():
    print("See the station master")
    print("Turn the little handle ")
    print("Puff, puff, toot, toot ")
    print("Off we go! ")
    print()

CHORUS1 ()
CHORUS2 ()
CHORUS1 ()
CHORUS2 ()
```

Functions with parameters

Functions

A piece of code that can be called over and over

Parameter

An extra piece of information that you pass to the function to customize it for a specific need

Parameters

In programming, parameters are passed as to functions like this:

chorus(parameter1, parameter2)

Notice the difference with the previous example that used no parameters:

chorus()

Functions with Parameters Example in Python

CHORUS

Parameters: P1, P2

Old MacDonald had a farm
e-i-e-i-o
And on his farm he had a **P1**
e-i-e-i-o
With a **P2** here
And a **P2** there
Here a **P2**, there a **P2**
Everywhere a **P2 P2**

SONG:

Chorus (cow, moo)
Chorus (pig, oink)
Chorus (horse, neigh)
Old MacDonald had a farm
eeeeeee-iiiiiii
eeeeeee-iiiiiii
ohhhhhhh

Python code:

```
def chorus(P1, P2):
    print("Old MacDonald had a farm")
    print("e-i-e-i-o")
    print("And on his farm he had a", P1)
    print("e-i-e-i-o")
    print("With a", P2, "here")
    print("And a", P2, "there")
    print("Here a", P2, "there a", P2)
    print("Everywhere a", P2, P2)
    print()


chorus("cow", "moo")
chorus("pig", "oink")
chorus("horse", "neigh")
```

Lab 1: my bonnie (bonnie.py)

My Bonnie lies over the ocean
My Bonnie lies over the sea
My Bonnie lies over the ocean
Oh bring back my Bonnie to me

Bring back, bring back
Bring back my Bonnie to me, to me
Bring back, bring back
Bring back my Bonnie to me

Last night as I lay on my pillow
Last night as I lay on my bed
Last night as I lay on my pillow
I dreamed that my Bonnie was dead

Bring back, bring back
Bring back my Bonnie to me, to me
Bring back, bring back
Bring back my Bonnie to me

Oh blow ye the winds o'er the ocean
And blow ye the winds o'er the sea
Oh blow ye the winds o'er the ocean
And bring back my Bonnie to me

Bring back, bring back
Bring back my Bonnie to me, to me
Bring back, bring back
Bring back my Bonnie to me

The winds have blown over the ocean
The winds have blown over the sea
The winds have blown over the ocean
And brought back my Bonnie to me

Bring back, bring back
Bring back my Bonnie to me, to me
Bring back, bring back
Bring back my Bonnie to me

Create a program the prints out the lyrics of this song, using a function to print the chorus.

Lab 2: The triangle function (triangle.py)

Write a program that ask the user for the base and the high of a triangle. The program should define a function called area that receives two parameters b and h and prints out the area of the triangle.

Example:

```
>>> What is the base of the triangle? 20
>>> What is the high of the triangle? 3
>>> The area of the triangle is ==> 30
```

Lab3: Adding numbers (add.py)

Write a program that ask the user for two numbers. The program should define a function called addNumber that receives two parameters x and y and prints out the sum of these two numbers.

Examples

```
>>> Enter the first number -> 2
>>> Enter the second number -> 5
>>> The sum of 2 and 5 is 7
```

Lab4: The big one (bigone.py)

Write a program that ask the user for two numbers. The program should define a function called getBiggerNumber that receives two parameters a and b and prints out the biggest number between the two numbers passed as parameters.

Examples

```
>>> Enter the first number -> 2
>>> Enter the second number -> 5
>>> The biggest number is 5
```