Hands-on Activity 3.1 Functions, Modules, and Packages Group #13	
Francisco, Lauper Xavier V. Buenafe, Dhafny Efa, Christian	4/1/2022
Course/Section – BSCPE12S1	Engr. Roman M. Richard

6. Supplementary Activity:

Tasks

Simple Word Filter

1. Create a function that would accept two inputs: a sentence(string), and a list containing bad words that the user would like to censor but not remove. The function should return the newly filtered sentence wherein the bad words are replaced with asterisks equal to the length of the censored word.

```
In [9]: # -*- coding: utf-8 -*-
"""
Created on Fri Apr  1 09:12:13 2022

@author: chris
"""
sentence1 = input("Please Enter the sentences.\n")
sentence = sentence1.split()
def censor(sentence):
    curse1 = input("Please Enter the words you wanted to censored.\n")
    curse = curse1.split()

    for index, word in enumerate(sentence):
        if any(curse in word for curse in curse):
            sentence[index] = "".join(['*' if x.isalpha() else x for x in word])

    return " ".join(sentence)
print(censor(sentence))
```

```
Please Enter the sentences.
HELLO BIG ASS DUMBASS
Please Enter the words you wanted to censored.
ASS DUMBASS
HELLO BIG *** *******
```

2. Given a certain Physics problem create a function(projectilemotion_solver) that would take in the following inputs below and return the needed information when the function is called. Name the program containing the function projectilemotion.py then create another program main_program.py and import projectilemotion.py “A long jumper leaves the ground at an angle of 20.0° above the horizontal and at a speed of 11.0 m/s. “

   (a) How far does he jump in the horizontal direction?

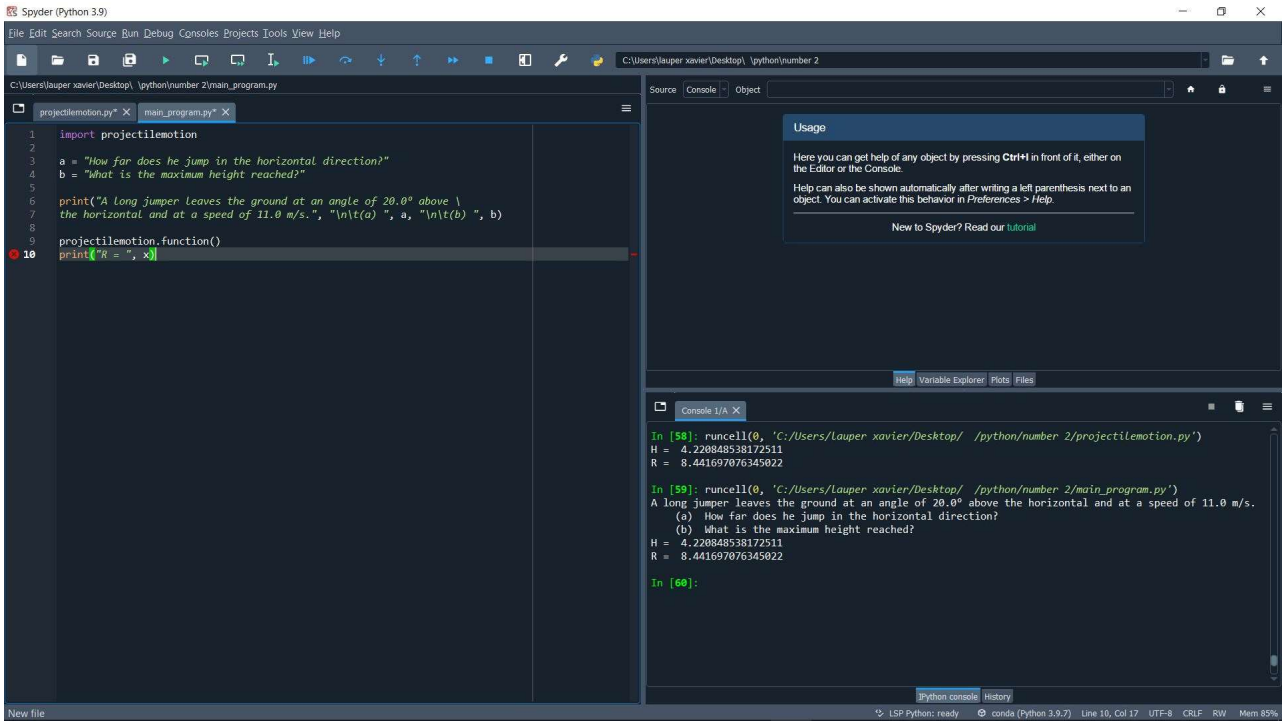
   (b) What is the maximum height reached?

   Given a projectile motion problem like this where the angle and speed are given, the range or distance travelled in
   the horizontal direction can be determined by using the formula:

$$R = \frac{v_i^2 sin2\theta_i}{g}$$

The maximum height can be determined using the formula:

$$h = \frac{v_i^2 sin2\theta_i}{2g}$$



3. Create a quadratic equation solver module that would write the inputs of the user and the corresponding output into
text files.

```
In [17]: import math
         a = float(input('Please Enter a: '))
         b = float(input('Please Enter b: '))
         c = float(input('Please Enter c: '))

         d = (b**2)
         f = (4*a)*c
         e = (d - f)

         first = (-b-cmath.sqrt(e))/(2*a)
         second = (-b+cmath.sqrt(e))/(2*a)
         print('The solution are \n{0} \n{1}'.format(first,second))
```

```
Please Enter a: 123
Please Enter b: 4345
Please Enter c: 234
The solution are
(-35.27126589037663+0j)
(-0.05393736165588717+0j)
```

Questions

1. **Why do built-in functions exist?**
   built-in functions are functions that the computer can easily read which means that every built in functions has its own job. For me, Built in functions exists to make programming work since they allows us to use basic properties of strings and numbers depending on what we want.

2. **What is the advantages/disadvantages of placing code inside functions vs sequential codes.**
   Placing code inside the function helps Reduced Coding Time, Reduced Debugging Time and Maintenance Effects
   Advantages. Sequential coding supports the reconciliation of a batch of transactions, such as sales orders, at the end of processing.
3. **What is the difference between a function and a module?**
   A function is a section of code that is used to execute a certain task in programming. A module is a section of a program or a software component that includes one or more procedures. All this is to state, functions are collections of codes, whereas modules are collections of classes and functions.

4. **What is the difference between a module and a package?**
   The module is a basic Python file with a.py suffix that includes collections of functions and global variables. While a package is a directory containing modules. In addition to containing Python modules, this directory also includes a Package init .py file. It's just a namespace. The package contains sub-packages.

Conclusion:

During this laboratory activity the group were able to determine the purpose of python functions and different built-in functions. As we solving the problems given, we are having a difficulty due to multiple tries and errors. We manage to accomplish this task by helping each other and giving resourceful information to fix the errors. In doing this activity we learned how to use the different kinds of functions and built-in functions such as the difference of global and local inside a function and the differences of a function and a module.