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Foundations of Programming

Assignment 05

15 August, 2021

# Demonstrate the use of Functions LAB06\_A

Functions are group of statement in on program defined name. The help compartmentalize a particular task/action performed in a program, through the concept of abstraction and encapsulation.

The lab below demonstrates a use case

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Figure -LAB06\_A Demonstrating The Use of Functions

In the Script above the ln 14. Function “getSum” was define with 2 arguments of arbitrary values. (line 15-16). Sets the operation where intNumA and intnumB (global variables) are passed in the function to perform a simple math calculation with operator +. The same for all other function getDif(line 18), getPro(line22) and getQuo(lin26), with operators “-“: for subtraction, “\*” for product, and “/” for quotient operations respectively.

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Figure B-LAB06\_A. Result

# ﻿Further demonstrates the use of function with to return a tuple. LAB06\_B

This lab further demonstrates the use of function, however in a slightly different form tha what was done in part A. In this part, the script for performing all the arithmetic calculations in parts A are combined into one function “math\_calc”, here ins partB (line15-16). Likewise the result were returned in one line(19).-see fig 4B for result) Whereas, in part A these calculations were separated in to 4 different functions.

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Figure -Further Demonstrating The Use of Functions LAB06\_B

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Figure -LAB06\_B. Result

# Demonstrating The Use of Class with Docstring

Class are ways of grouping functions, variables, and constants.

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Figure -Using Class LAB06\_C

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The Screenshot above show and example where function with similar purpose are grouped together into one Class. “Simplemath” (line14). The functions that follow are defined within this class in lines 17-31:”getSum” function, line 33-47 : “getDif” function, line 48-63 for getPro and line 64-77: getQuo. All these function are same as defined in LAB06 Part. A and B. The font in green between each code represent documentation string “docstring” which summarized the purpose of each function, their expected input, output, variables and return values.

(See below for the result of the script )

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Figure -LAB06\_C Result

# Assignment

The assignment involes modifying code from Assignment06 to use classes , functions and docstring.

The figures below show the modified script with docstring (in light green font) embedded with each class and function to show the essence of each class and functions respectively .

The program execution phase, starting line 184 . start with “FileProcessor.read\_file” , which indicated class: file processor and function: “read\_file”. This dot naming convention pervades the entire script,where classname.function are used to call a particular function to use.

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Figure -Assigment 06-A

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Figure Assigment 06-B

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Figure -Assigment 06-C

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Figure -Assigment 06-D

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Figure -Assigment 06-E

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Figure -Assignment06 Result-A

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Figure 13-Assignment06 Result-A-1 Option to Load

A above; Show the [l] load option working at the start of the program. Here an empty file is loaded, since file it presumed empty at first

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Figure -Assignment06: Option to Add data

As seen in screenshot above option to save was selected by user and 2 rows of data were supplied with ID’s 1 and 2

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Figure Assignment06-Option to display [i]

The above represent the option to display current inventory [i]. which display the 2 rows supplied by the user in previous part.

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Figure -Assignmet 06- Option to [s] to save

The above show the option to save the collect 2 rows of data from user to the file, which was successfully executed.

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Figure -Assignment06-Option [d] to delete

The above show the option [d] to delete working. The user was prompted for ID of the row to delete: 2. ID 2 provided was deleted and the current inventory was display. Which show one row of data left

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Figure Assingment06. Run using Python IDLE

Graphical user interface, text

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Figure - Assingnment06. Run on Python IDLE contd

# Summary

In this module, we covered the use of class, function and docstrings. The labs demonstrated the use of function and two ways, in one we 4 functions performing 4 different task under individually set function names and in the second part, the same 4 task were combine under one function. This show variability of use and how function can help when coding.

Classes were also used to group functions of similar purpose to further make scripts compact and easier to read. Lastly we explore the use of docstring to annotate functions and improve function usability.