

CSF101- Programming Methodology

Assignment 3 (15 Marks)

Github Submission Requirements:

This assignment has two parts. You are required to submit your work in a GitHub repository with the following naming structure (folder name): `StudentName_studentNumber_A3`

Eg: DarshanSubedi_02190108_A3

Additionally, you are required to submit your work in a GitHub repository with the following naming structure (folder name): `StudentName_studentNumber_A3`

Eg: DarshanSubedi_02190108_A3

Your Python file submissions must be inside the above-mentioned repository. For each part, you must have **two separate Python files**, their names must be as follows:

`StudentName_studentNumber_A3.py` (for Part A)

`StudentName_studentNumber_A3_test.py` (for Part B)

Eg:

DarshanSubedi_02190108_A3.py

DarshanSubedi_02190108_A3_test.py

Report Submission Requirements

1. Please submit a report in .doc format for assignment grading on VLE.
2. Include by pasting your Github Link in your report
3. Include your python code pasted as text in your report (in addition to submitting on Github)
4. Include screenshots of resulting outputs or user interface for each functionality part described in the assignment.
5. Explain the steps used in running your code and testing your code
6. Include explanations of your choices of the chosen structure of your code

Code Documentation Guidelines

1. Include docstring documentation in your code
2. Add comments explaining the functionality of the methods
3. Include comments on error handling
4. Include comments on the basic explanation of the logic and algorithms used

Your report assignment will be subject to Turnitin plagiarism checker, and your GitHub code submissions will be checked for functionality.

Assignment 3 Description

Part A: Banking Application (10 Marks)

Code up the worksheet 2 app from github on a banking application. <https://k4y0x13.github.io/CSF101-Programming-Methodology/OOP/Worksheet2.html>

Then make the following improvements

- 1) Separate the main loop of the code to have user input being passed to a separate method for processing of the user's menu input. For example by implementing this method:
`def processUserInput(choice):`
- 2) Add ability to top up the pre-paid balance of a user's mobile phone number
- 3) Implement subclasses of the Exception class, for handling exceptions to erroneous user input and invalid transfers requests situations.
- 4) Ensure there are docstring documentation for the various functions in your banking application, and show that python interpreter can display the documentation using the help command keyword from the python interpreter command prompt.
- 5) Implement a separate class for handling the provision of a basic graphical user interface using the tkinter library with buttons for the user commands and appropriate boxes for entering user input and displaying data.

Part B: Unit Tests (5 Marks)

Write a separate python file using the unittest library for sample testing of code to test for edge cases for

1. Unusual user input
2. Invalid usage of application functions
3. Testing of the individual main methods in the program (deposit, withdraw, transfer, delete, phone top-up)