



**Informatics Institute of  
Technology Business School  
Assignment Cover Sheet**

<b>Course:</b>	<b>Foundation Certificate Programme</b>
<b>Unit Code and Description:</b>	Introduction to Programming Principles
<b>Module Leader:</b>	Mr. Sudharshan Welihinda
<b>Assignment Number:</b>	1
<b>Assignment Type:</b>	<b>Individual</b>
<b>Issue Date:</b>	<b>24<sup>th</sup> June 2024</b>
<b>Hand – in – Date:</b>	<b>19<sup>th</sup> July 2024</b>
<b>Deadline:</b>	<b>on or before 9.00 AM</b>
<b>Weighting:</b>	<b>40%</b>

The department is not responsible if an assignment is lost. To cover this eventuality, you are advised to take a photocopy of the assignment OR to ensure you have the means of re-creating it.

## 1. Procedure for submission:

- Create a folder including your coursework report (In PDF format) and all the python codes. (**Python 3.x source codes**)  
**NOTE: Python codes with screen shots/.png files are not valid. ONLY (.py) files are valid.**
- Name the folder as “DOC 333 Coursework report – StudnetID”  
(E.g DOC 333 Coursework report – 20230155)
- Then convert your folder to a ZIP file and submit it to the link given in LMS before the deadline (Link will be available under Coursework section)
- Ensure you submit your ZIP folder on time as per the given deadline else, the submission will be considered as a late submission.
- Check if you are uploading the correct ZIP file as you will be given only one chance to submit/email. Changes cannot be made.

## 2. Penalties for Late Hand In:

- If students submit coursework late but within 24 hours (or one working day) of the specified deadline, the work will be marked and will then have 10% of the overall available marks deducted, to a minimum of the pass mark (40%).
- If students submit coursework more than 24 hours (or one working day) after the specified deadline, they will be given a mark of zero for the work in question.

## 3. Exceptional Factors Affecting your Performance:

- Students should submit written evidence to the Registrar’s Department with a copy to the Module Leader of exceptional circumstances, which they consider having caused them to submit assessments late and for which they do not wish to attract any penalty. These must be handed over/emailed to the Registrar within four working days of the hand-in-date.

## 4. Consequences of Plagiarism:

- By submitting the work through LMS, you are acknowledging that this is solely your own work. Any code which is not created by you **MUST** be clearly commented as such. Any code discovered to not have been created by you will mean that the work will be submitted to academic standards for a potential assessment offence, which may result in a zero mark in the component or whole module."

## **Assignment Brief**

ABC bank is a small bank in Sri Lanka to register their customers to serve them fast. The bank is planning to have an information system to maintain the details of their savings account holders.

The system must be able to facilitate opening accounts to new customers (maximum of 5 customers) and display all the customers in the bank with their account number, name and the bank balance when needed. Also, the system should have the facility to change details of the customers (except account number and the bank balance) already registered with the bank, and to deposit and withdraw money when required for a given account. The bank should also be able to view the details of a customer for a given account when required.

When the bank gets a new customer, the following details should be recorded and stored in the system.

- Bank Account Number (10-digit number)
- NIC - National Identity Card Number (String, with 10 characters)
- Account Holder's First Name (String, maximum of 10 characters)
- Account Holder's Last Name (String, maximum of 15 characters)
- Birth Date
- Permanent Address (String, maximum of 15 characters)
- Telephone Number (String, 10 characters)

***ABC Bank***  
Main Menu

- 1) Add a new customer
- 2) View details of a customer including his/her bank balance
- 3) View details of all the customers with their bank balances
- 4) Deposit money to a given account
- 5) Withdraw money from a given account
- 6) Update Customer Details
- 7) Exit

Your Choice:

**Figure 1**

***ABC Bank***  
Add a new customer.

Bank Account Number -

NIC -

First Name -

Last Name -

Birth Date -

Permanent Address -

Phone Number -

Do you want to save the account (Yes/No)?

**Figure 2**



***ABC Bank***  
View details of a customer

  

**Bank Account Number –**

  

NIC	-	XXXXXXXXXX
Phone Number	-	XXXXXXXXXX
First Name	-	XXXXXX
Last Name	-	XXXXXXXXXXXX
Bank Balance	-	99999.99

  

Do you want to view another account details (Yes/No)?

**Figure 3**

***ABC Bank***  
View details of all customers

  

NIC	Account NO	First Name	Last Name	Bank Balance
xxx	XXXXXXXX	XXXXXXXX	XXXXXXXX	99999.99
xxx	XXXXXXXX	XXXXXXXX	XXXXXXXX	99999.99

  

Do you want to update the account details (Yes/No)?

**Figure 4**



**ABC Bank**  
Deposit Money to a given account

**Bank Account Number** -

Deposit Amount -

Do you want to save (Yes/No)?

Figure 5

**ABC Bank**  
Withdraw money from a given account

**Bank Account Number** -

Withdraw Amount -

Do you want to save (Yes/No)?

Figure 6

**ABC Bank**  
Update Customer Details

**Bank Account Number** -

NIC -

First Name -

Last Name -

Birth Date -

Permanent Address -

Phone Number -

Do you want to save the new details (Yes/No)?

Figure 7

## Tasks to be performed:

### Task 1:

- Set up a Python project by the above instructions and routine practice in all lecture and tutorial exercises.
- Implement a human-computer interaction mode, where the following will be possible:
  - Visualize the user interface (for example as depicted by Figures 1 to 7)

### Task 2:

A brief report which gives the following.

- Cover page
- Table of contents
- Algorithm which you have taken to approach the solution.
- Any other vital information you wish to present (e.g any assumptions you made.)
- Test cases which are used to test the program and the results. (Screenshots which includes positive and negative results)

### Task 3: - If Requested

**Demonstrate** and **defend** the implemented solution at viva (on request) by

- a) Visualizing the menu options in the proposed solution.
- b) Justifying the results.

### **To Submit:**

Include the sources codes of the program solution and PDF version of the report in a folder, convert it to a zip file and submit to the given link in the LMS.

- Python source codes (.py files)
- PDF version of the original report

**NOTE:** All codes must be written in Python 3.x version. For best programming practices use meaningful variable names, indentation, comments etc.

END OF THE COURSE WORK

**Coursework marking scheme:**

Criterion and range	Indicative mark	Comments
<b>Compliable &amp; executable project / program creation (0-10 marks)</b>	8 - 10	A compliable and executable project has been created with clearly visualizing the user interfaces shown as figures 1 to 7 with proper formatting.
	4 – 7	A compliable and executable project has been created with visualizing partially the user interfaces shown as figures 1 to 7. No proper formatting.
	0 - 3	No project has been created, or it is prone to compilation or runtime errors.
<b>Using proper data structure (0 – 15 marks)</b>	10 – 15	A proper data structure (e.g. List or any other) has been used with proper methods and the solution has been built on top of this data structure.
	5 - 10	A working data structure has been used but is limited in functionality.
	0 – 4	A data structure has not been used or does not work properly.
<b>Correct Solution/ Proper outputs (0 – 30 marks)</b>	20 - 30	The correct answers and outputs can be obtained. The implementation outputs the steps of the solution in enough detail that it can be checked independently.
	5 - 20	The correct answer can be obtained, but the implementation does not work for all possible inputs or does not provide enough information to justify its result.
	0 - 4	Not done, or does not work properly
<b>Proper Error Handling (0 -15)</b>	10 - 15	All the necessary conditions have been considered and relevant/proper messages are displayed.
	5 - 10	Some of the conditions have been considered, error messages are also displayed but the messages do not give clear indication about the error.
	0 - 5	Not done. No error messages are displayed.
<b>Project Report (0 – 30 marks)</b>	25 - 30	The student has submitted a full report explaining the problem, explanation about the data structure, the solution and its algorithm. Proper test cases have been identified and sufficient test results are produced.





	6 - 24	The student has submitted a report, but some of the contents (explanation of the data structure, explanation of the algorithm, relevant test cases) are lacking.
	0 - 5	Not done or no relevant content.