

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

<b>Course:</b>	<b>Foundation Certificate Programme</b>
<b>Unit Code and Description:</b>	<b>Introduction to Programming Principles</b>
<b>Module Leader:</b>	<b>Mr. Sudharshan Welihinda</b>
<b>Assignment Number:</b>	<b>1</b>
<b>Assignment Type:</b>	<b>Individual</b>
<b>Issue Date:</b>	<b>13<sup>th</sup> November 2023</b>
<b>Hand – in – Date:</b>	<b>8<sup>th</sup> December 2023</b>
<b>Deadline:</b>	<b>on or before 9.00 AM</b>
<b>Weighting:</b>	
<b>Qualifying mark:</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**

XYZ Company is a leading construction company in Sri Lanka. They undertake large housing construction projects through their known clients. The company is planning to have an information system to maintain the details of the projects they undertake. The system should keep the details of all the ongoing projects, the details of completed projects and the number of workers available to assign to new projects. Before undertaking a new project, the company always checks whether the required number of workers are available to assign. If not, company do not undertake the project. Once a project is undertaken, it will be assigned to ongoing projects(with the relevant details) and when a project is completed, it will be taken out from the ongoing projects and it is assigned to completed projects. The workers who worked in the project are released and they are available to assign to a new project.

When the company gets a new project, the following details should be recorded and stored.

- Project Code
- Client's Name
- Start Date
- Expected end date.
- Number of workers working in the project
- Project status (ongoing, on hold or completed)

When a project is completed, the following details should be recorded and stored.

- Project Code
- Client's name
- Start Date
- Expected end date.
- Number of workers working in the project
- Actual end date

***XYZ Company***  
Main Menu

1. Add a new project to existing projects.
2. Remove a completed project from existing projects.
3. Add new workers to available workers group.
4. Update details on ongoing projects.
5. Project Statistics
6. Exit

Your Choice:

**Figure 1**

***XYZ Company***  
Add a new project.

Project Code            -            \*\* Enter '0' to Project Code to exit.

Clients Name           -

Start date               -

Expected end date   -

Number of workers -

Project status         -

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

**Figure 2**

***XYZ Company***  
Remove Completed Project

Project Code –

Do you want to remove the project (Yes/No)?

**Figure 3**

***XYZ Company***  
Update Project Details

Project Code            -            \*\* Enter '0' to Project Code to exit.

Clients Name           -

Start date               -

Expected end date   -

Number of workers -

Project status           -

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

**Figure 4**

***XYZ Company***  
Add new workers

Number workers to add -

Do you want to add (Yes/No)?

**Figure 5**

<i>XYZ Company</i> Project Statistics	
Number of ongoing projects	-
Number of completed projects	-
Number of on hold projects	-
Number of available workers to assign	-
Do you want to add the project (Yes/No)? ____	

**Figure 6**

## Tasks to be performed:

### Task 1:

- Set up a Python project by the above instructions and routine practiced 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 6)

### 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.

## 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 6 with proper formatting.
	4 – 7	A compliable and executable project has been created with visualizing partially the user interfaces shown as figures 1 to 6. 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.