INFORMATICS INSTITUTE OF TECHNOLOGY

Individual Coursework

Module Code	: DOC 333
Module Title	: Introduction to Programming Principles
Module Leader	: Ms. Tharushi Amarasinghe
Assessment Type	: Individual
Issued Date	: 4th November 2024
Hand-in Date	: 25th November 2024
Weight	: 30%

Student ID :

Student Name :

Centre :

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

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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 within 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 (25%).
   - If students submit coursework more than 24 hours 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

The Informatics Institute of Technology is a private higher education institute in Sri Lanka which offers specialized offshore British degree programmes in IT and Business. Foundation is one of the programs offered at the IIT business department. This program is offered at IIT Colombo, and two regional centres situated in Galle and Kurunegala.

IIT is planning to have an information system to maintain the attendance details of all the foundation students.

The system should be able to facilitate the following functionalities.

a) Register new students with the details given below.
   - Student ID (9-digit number)
   - NIC - National Identity Card Number (String, with 10 characters)
   - Student's First Name (String, maximum of 10 characters)
   - Student's Last Name (String, maximum of 15 characters)
   - Birth Date
   - Permanent Address (String, maximum of 15 characters)
   - Telephone Number (String, 10 characters)
   - Tutorial Group
   - Centre

b) Display student details of a given student.

c) Display student details of all the students.

d) Facility to change the details of a student already registered.

e) Enter attendance for a selected tutorial group.

f) View attendance details of a given student within a given date range.

IIT Campus

Main Menu

1) Enroll a new student
2) View details of a student
3) View details of all the students according to the branch
4) Update student details
5) Mark attendance
6) View attendance
7) Exit

Your Choice:

Figure 1

IIT Campus

Enroll a new student.

Student ID -

NIC -

First Name -

Last Name -

Birth Date -

Permanent Address -

Phone Number -

Tutorial Group -

Centre -

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

Figure 2

IIT Campus

View details of a student

Student ID	**–**	
NIC	-	xxxxxxxxx
Phone Number	-	xxxxxxxxx
First Name	-	xxxxxx
Last Name	-	xxxxxxxxxxx
Tutorial Group	-	x
Centre	-	xxxxxxx

Do you want to view another student's details (Yes/No)?

Figure 3

IIT Campus

View details of all the students

Branch Name:

NIC	Student ID	First Name	Last Name	Tutorial Group
xxx	xxxxxxx	xxxxxxx	xxxxxxx	x
xxx	xxxxxxx	xxxxxxx	xxxxxxx	x

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

Figure 4

IIT Campus

Update Student Details

Student ID -

NIC -

First Name -

Last Name -

Birth Date -

Permanent Address -

Phone Number -

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

Figure 5

IIT Campus

Mark Attendance

Centre -

Tutorial Group -

Date -

Student ID Present / Absent

20240201
20240202
20240203
20240204
.
.

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

Figure 6

IIT Campus

View Attendance

Student ID -

From -

To -

Date	Present / Absent
xxxxxxxx	x
xxxxxxxx	x
xxxxxxxx	x
xxxxxxxx	x

Do you want to direct to the main menu (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. Include ***minimum three*** test cases for each figure. (Screenshots which include positive and negative results)
- Since you are submitting .py file, no need to include the screen shots of the program in the report.

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
Compliable & executable project / program creation (0-10 marks)	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 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.
Using proper data structure (0 – 15 marks)	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.
Correct Solution/ Proper outputs (0 – 30 marks)	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
Proper Error Handling (0 -15)	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.
Project Report (0 – 30 marks)	25 - 30	The student has submitted a full report explaining the problem, an 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.