UNIVERSITY
OF WOLLONGONG
IN DUBAI

CSCI251
Assessment 03 (20%)

Assessment 03 (20%) – Individual

Assessment 03 is a programming project. Total grade for assessment 03 is 20% of CSCI251 – Advanced Programming.

C++ Programming Project Information: Point of Sales (POS) Express for Supermart App.

You are employed by Dubai Software Limited. Your company has won the contract to supply Dubai Supermart a Point of Sales (POS) app. The programming team is responsible to design, implement and deliver this POS app. You have been appointed as the lead programmer to work on the POS express. This is a POS Express for Supermart express counter unmanned checkout. An express checkout will only allow 10 items to be checked out. Your app must allow up to any 10 items to be checked out. The app will display the items checked out, its unit cost and its total cost in the form of a display shown in Figure 1. The final line shows the total cost of the purchases. **As the express checkout is unmanned, your program must read the test data from a file and will not be asking for any user input**. In the final implementation, a scanner will be attached to the POS point and will allow a user to scan in the individual item. However, for design and test purposes, your program must read in the test data from a test file (note: there are 3 different set of test data) and display the test data as shown in Figure 1. Output to Console.

The POS app - Express will allow three types of currencies to be used for payment:

(a) Dirhams (Dhs)
(b) US Dollar ($)
(c) Euro Dollar (€)

Note: The primary currency is Dhs. The cost of all items will be in Dhs and the display of the final charges will show the equivalent cost in Dhs, $ and €.

You will design and develop the POS Express for Supermart App based on C++ object-oriented programming. The app will have two main features:

(a) A display of purchased items and a computed final cost.
(b) Options to pay in Dhs, $ or €. Once a payment is made, the app must compute the money to be returned (if any). All money to be returned will be in Dhs. If payment was made in $ or €, the app must compute the equivalent amount of money in Dhs to be returned. No $ or € will be returned by the app.

Figure 1: Output to Console.

Item Descriptions	Unit Cost	Quantity	Total Item Cost
1			
2			
3			
4			
…			
…			
10			

Total purchase: XXX Dhs
YYY $
ZZZ €.

Payment made: AAA Dhs or BBB USD $ or CCC €

Amount returned: DDD Dhs.

Test Data1:

Sardines	4:25 Dhs/can	5 cans
Vegetable	0.57 Dhs/kg	2 kg
Apples	15.35 Dhs/kg	1.2 kg
Towel	45 Dhs/pcs	3 pcs

Exact payment made in Dhs

Test Data2:

Sardines	4:25 Dhs/can	5 cans
Vegetable	0.50 Dhs/kg	2 kg
Apples	15.35 Dhs/kg	1.2 kg
Towel	45.00 Dhs/pcs	3 pcs

Payment made in USD $100.00

Test Data3:

Sardines	4:25 Dhs/can	5 cans
Vegetable	0.57 Dhs/kg	2 kg
Apples	15.35 Dhs/kg	1.2 kg
Towel	45 Dhs/pcs	3 pcs

Payment made in Euro € 50.00

Note on Advanced Task:

1. Item (b), Options to pay in Dhs, $ or € is considered advanced task. Students who do not do this advanced task can only **obtain maximum grades of up to 75% of the total grades**.
2. Student who chose to skip the advanced task will code the program using Dhs as the main currency.

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Students will code the solution for this program using OOP. Use of generic programming approach is optional under advanced task.

Note: For OOP solution, you should not need to use any 3rd party libraries or tools. If you wish to use, please seek approval from course Professor.

Plagiarism and Copying.

Plagiarism will not be tolerated and copying of codes are not allowed. Students are not allowed to share codes. Any students found with similar codes will be awarded ***zero (0) grades for the entire Assessment 03***. Other actions may follow.

Submission Guide.

Your project must be coded in C++ using MS Visual Studio 2022 community edition IDE. You will submit the entire MS VS 2022 solution/project files as required. The program can be built in debug or release mode. Either mode is fine for submission. The program must build and run without any errors or warnings. All warnings must be fixed before submission. Note: Those students who wish to submit in other IDEs etc must seek approval from course professor.

The program must have following basic features as part of basic task:

a. Menu-driven interface
b. Program must read from the test data set and must not ask user to input any data. Assume that the scanner for the POS app has scan the data into the test data format.
c. Program must have a start, a display menu and options to change test set data etc. The display option will display information as shown in Figure 1. Output to Console.

For advanced tasks, the program must provide a display of currency to be returned as required.

Students must submit an implementation report that clearly explains their design considerations and flow/algorithms etc. Students should also include reflections of lesson learnt. If attempting the Advanced Task, student should include a separate section of Advanced Task – design and consideration in the report.

You should submit the required report, maximum of 5-8 pages. Make sure you put the solution/project in a folder that has your firstNameStudentID so that it is easy to know which student's work the submission belongs to. You can zip up the file and submit the zipped file to Moodle or to the URL given in class. Be prepared to show your work to the lecturer/class if called. All students must attach the assignment cover sheet to show that the assignment is their own effort, and no plagiarism is involved.

Due Date

This assessment is due on the 10th week.