



UNIVERSITY OF LAGOS
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
B.Sc. (Hon.) Computer Engineering Degree Examinations
First Semester Examination 2021/2022 Session
CPE 311: Computer Programming Language II

Instructions:

- **Time Allowed: 1 Hour 30 Minutes Attempt all questions**
- **Create a new project with the format: MatricNo_CPE311_QNumber and save all your source and header files into the appropriate folders.**
- **When you complete a question, zip the project folder and upload it to the server.**
- **Use only Visual Studio 2010 unless otherwise stated.**
- **Use multi-file technique.**

QUESTION 1 [35 Marks]

Write a complete C++ program that implements the following data structure:

- **Product** structure (character array for ProductName, float for UnitPrice and integer for Quantity, float for TotalPrice). **TotalPrice** is a product of the UnitPrice and Quantity.
- **Shop** structure (character array for ShopName and Address).
- **Customer** structure (character for CustomerName and Phonenumner).
- **Person** structure (Create an instance of **Shop** structure, **Customer** structure, and **Product** structure).

The program should have a **FillShoppingInfo** function that **ask** the user to enter all information for a Person instance. The prototype for this function is:

void FillShoppingInfo (Person &);

You should have a **WriteReceipt** function that writes out the Person and TotalPrice information to a **text file**. The prototype for this function is:

void WriteReceipt (Person);

The output format is given below:

Yem Yem Ltd
University of Lagos, Akoka

Customer Ronke Ahmed
Phone Number 08067701544

Your Order

Product Name	UnitPrice	Quantity Ordered
Chocolate	50	5

Total Price	250	

Thanks for your patronage

QUESTION 2 [35 Marks]

Create a **Student** data structure with Name of character array data type; Score1, Score2, Score3 and Score4 of integer data type; and AvgScore of floating point data type. Create an array instance of Student with size of three (3). Reads student's information from a **StudentInfo.txt** file using the **ReadStudentInfo** function into the Student Array Instance. Calculate the average score of each student using the **CalcAverage** Function and assigned the result to the AvgScore variables. Write the Students name and average score to a **AvgScoreFile.txt** using a **WriteAvgScore** function.

StudentInfo.txt

Alao Adeniyi	70	85	75	60
Bakare Chukwu	80	72	67	65
Trey Song	55	49	85	77

AvgScoreFile.txt Output Format

Alao Adeniyi	XXX
Bakare Chukwu	XXX
Trey Song	XXX