University of Technology, Jamaica

School of Computing and Information Technology

Faculty of Engineering and Computing

Programming 1 Final Project-based Assessment (CMP1024)

Semester 1 – AY: 2023/2024

DUE DATE: DECEMBER 7, 2023

INSTRUCTION:

1. **Using the IPO solution from Part A develop the Pseudocode solution for the problem below.**

2. **If necessary, you may update your IPO chart. If no changes are necessary, please state it clearly**

3. **At the end of your assignment kindly submit information as to the contribution of each group member.**

4. **The RUBRIC is at the end of the document, kindly reference it while developing your solution.**

5. **Plagiarized solution will be automatically given zero (0).**

Part 1B

Mr. Phillips is a small business owner who owns a barbershop called "Phillip's Barbershop". The barbershop contains three (3) stations for cutting hair which he sub-contracts to three (3) barbers.

Customers are required to give the following information when requesting a service: customer name, service needed, and station number. Mr. Phillips collects 5% of the daily sales amount plus a fixed amount of $500.00 (per day) from each station as rent. He wants a digital system to help manage his daily operations so he can closely monitor the revenue generated from the Barbershop.

The barbershop opens at 9:00 AM each day. Assume that each station takes a total of 30 minutes to complete a customer's requested service and all appointments are kept, design a simulation of Mr. Phillip's Barbershop that accepts the above stated information as input and continues accepting inputs until the total minutes of 720 or exactly 9:00 PM is reached. The table below shows the services Phillip's Barbershop offers:

Table Showing Phillip's Barbershop Services

Service	*Cost ($)*
Men's Haircut	*1000.00*
Men's Head Shave	*1300.00*
Children's Haircut	*600.00*
Children Head Shave	*900.00*
Beard/Mustache Lineup	*650.00*
Eyebrow Shave	*400.00*

Note: barber's commission = station earnings - (5% of station's earnings + 500)

Ensure proper validation and appropriate error messages for the following:

1. Customer name (at least three characters long)
2. Service selected (from table above)
3. Station number

Show as output for each customer an attractive user-friendly display of:

a. Customer name
b. Service selected
c. Station number
d. Cost

Once the system reaches 720 minutes (about 12 hours) it is assumed that the barbershop is closed for business. At this point display the following in a neatly formatted order:

1. Total sales per station for the day
2. Total customers per station for the day
3. Commission per station for the day (station's earnings - rent amount)
4. Total day's sales
5. Total customers for the day
6. Total revenue for the day (commission plus total rent for the day)

RUBRIC

Deliverable	**Marks**
Updated IPO Chart	5
Pseudocode	
· All variables/constants correctly declared/defined	6
· Use of user-friendly prompts	5
· All variables inputted	5
· Inputs correctly validated	8
· Correct use of control structure based on problem specification	8
· Correct use of assignment statements	4
· Correct use of print statements	4
· Efficiency of pseudocode	5
· Use of proper indentation techniques	5
Total	**55**