Assignment 1 – Practical Programming Project

Due date: Refer to Assignment Submission Box on VU Collaborate

Weighting: 20% of total assessment

Coverage: This assessment item is based on course content in weeks 1- 4

Objectives

This assessment is designed to assess your understanding of variables, constants, types, operators, input/output, loops, if statements, classes, objects and functions.

Task

Victory Roses is a wholesale rose plant nursery selling rose plants to retail nurseries and garden centers. Mainly they grow and produce 2 types of rose plants. The two types are 'standard' and 'bush'. Standard rose plants are generally more expensive than bush varieties, since they need to be treated and trained to form the long stem plant. If the quantity of rose plants purchased are higher, then the price is lower.

Table below shows bush type rose plant prices. Standard type plants are 20% more than a bush plant.

Number of Plants	Price of a bush plant (including tax)
20 or more up to 50 plants	$15.0 per plant
50 or more up to 100 plants	$12.50 per plant
100 or more plants	$10.00 per plant

Create a C# application that calculate and displays rose plant sales for N customers who registered for online plant purchases.
Note: Set N as a constant variable, which you can easily change. Initially set it to a value to be equal to the largest digit of your student id number (e.g. if your student id is s3025423 then N should be equal to 5). Assume N=4, if the largest digit of your student id number is less than 4.

Specific Requirements

- The application should ask the user to enter the customer name, the type of the rose plant, and the number of plants to order. If the rose plant type is standard, then the price is 20% more irrespective of the number of plants.
- The minimum order should be at least 20 plants, and the largest order is 200. An error message should be issued if a user enters a value beyond this range and re-entering the plant quantity is required.
- The program makes a calculation of the order and displays the result as shown in the figure below. The program should kept on running with entering next set of input data.

```
WELCOME TO VICTORY ROSES ONLINE!

Enter customer name placing the order: Garden Galore

Enter type of the rose to order Standard (S) or Bush (B)?) b

Enter number of plants:  45

        Order total for Garden Galore is $675.0
---------------------------------------------------------------

Enter customer name placing the order: Plant Store

Enter type of the rose to order Standard (S) or Bush (B)?) S

Enter number of plants:  45

        Order total for Plant Store is $810.00
---------------------------------------------------------------
```

- After all N sets of input data are entered from the keyboard, your program will also display the information that includes the customer spending most, the customer spending least as well as a simple bar chart to display how many customers place small orders and how many placed large orders with the number. Small order is less than 35 plants. The output should look as shown in the figure below.

```
        Summary of Rose Orders
---------------------------------------------------------------------------


        Name              Number of Plants      Bush or Standard      Order Total

        Garden Galore            45                    B              $675.00
        Plant Store              45                    S              $810.00
        Cynthya Hue              22                    B              $330.00
        Peter Max                20                    S              $360.00
        Flower Mart             120                    S            $1,440.00


    ---------------------------------------------------------------------------

Rose order with highest order cost by customer Flower Mart for $1,440.00

Rose order with lowest order cost by customer Cynthya Hue for $330.00

 Orders with number of plants < 35: xx
 Orders with number of plants >= 35: xxx
```

- The application should be user-friendly by displaying appropriate welcome, exit and error messages. Your program should run as normal without changing any source code except setting N with a different value.

Submission Requirements

You are required to submit two files:

1. Your application project packed as a single zip file.
2. A user manual document to show how your program works, provide screenshot and test cases. Assignment Cover Sheet with your name and student ID should be added at the beginning as a cover page. Document should be submitted in Word format.

(*The document and the project should be submitted separately. **DO NOT** zip the document*)

Assessment Criteria

Your assignment will be marked based on the specified functionalities, use of loops and If statements, the use of classes and objects, input and output functionality, user-friendly features and report presentation.

For late submission is -5% each day.

Marking Criteria	Weight	Marks	Comments
Declaring and using variables appropriately	5		
Creating and using constructors, objects and classes	10		
Using Loops and conditions	5		
Using if statements and conditions	5		
Declaring and using main method	5		
Declaring and using other methods	10		
Read input and display outputs	5		
Validate input (e.g. number of days)	5		
Cacluate Rental for each customer	5		
Summary of Rental Table	20		
Program Logic	5		
Spacing and Indentation	5		
Comments in program	5		
Report and Test Cases	10		
Total Mark	100	0	
Late Penalty (5% per day)		0	
Final Mark		0	

Note: The mark will be scaled to 20% for the final grade.