

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

Create a C# application that calculate and displays membership fees for N customers who registered for membership from a sport center based in Victoria, Australia. Declared a constant variable M to be equal to the largest digit of your student id number (e.g. if your student id is s3025423 then M should be equal to 5). Assume M=4, if the largest digit of your student id number is less than 4. The standard charges of membership are shown below

Length of Membership	Rate (including tax)
1-6 months	\$30.0 per month
6-12 months	\$27.5 per month
More than 12 months	\$25.0 per month

Specific Requirements

- The application should ask the user to enter the customer name, the number of months for membership, and yes or no to indicate whether the customer receives a special offer or not. The special offer will give customers a 15% discount of the memship no matter how many months they register.
- Assume that the number of month to be entered is an integer type with the range between 1 and 60. An error message should be issued if a user enters a value beyond this range and the re-entering is required.
- The program makes a calculation of membership and displays the result as shown in the below figure. The program should be kept running with entering next set of input data.

```

Welcome to use Sport Membership calculator.

Enter customer name 1: Jack Li
Enter the number of months: 5
Enter yes or no to indicate a special offer: no
The membership of fee from Jack Li is $150
-----

Enter customer name 2: Tom Cornes
Enter the number of months: 10
Enter yes or no to indicate a special offer: yes
The membership of fee from Tom Cornes is $275
-----

```

- After all M 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 members with the number of months are less than 6 months and greater than/equal 6 months as shown in the below figure.

```

=====
Summary of Membership Fee
=====
Name           Months    SpecialOffer    Charge
-----
Jack Li        5         no              $150
Tom Cornes     10        yes             $275
Peter          22        no              $550
Kate           4         yes             $120
=====

The customer spending most is Peter $550
The customer spending least is Kate $120

The number of member with < 6 months: xx
The number of member with >= 6 months: xx

```

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

Submission Requirements

You are required to submit two files:

- Your application project packed as a single zip file.
- 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		
Calculate 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	
<i>Note: The mark will be scaled to 20% for the final grade.</i>			