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| **Programming II**  Diploma in IT / FI / ISF  Year 1 (2018/19) Semester 2 | Week **1** |
| **1.5** hour |
| **Practical 1: Writing C# Programs** | |

**OBJECTIVES**

At the end of this exercise, you should be able to implement:

* Methods using C#

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| **IMPORTANT**   * Create a folder, **week1**, in C: ( or D:) drive and save all your work in this folder. * At the end of the session, copy this folder (all your work) to PRG2 network folder so that your tutor may assess your work. * The path of PRG2 network folder is **\\ictspace.ict.np.edu.sg\PRG2** |

1. A person's BMI is calculated with the following formula:

BMI = Weight in Kilograms / ( Height in Meters x Height in Meters )

Write a C# program that prompts user for his weight and height, and display the calculated BMI value.

1. Write a C# program that display the main menu as shown below. When the user enters any value other than 0, the program will print out the user’s input, and display the main menu again. The program will end when the user enters a 0.

ADMIN MENU

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[1] Read bicycle info from file

[2] Display all bicycle info with servicing indication

[3] Display selected bicycle info

[4] Add a bicycle

[5] Perform bicycle maintenance

[0] Exit

Enter your option: 2

You have selected option 2

ADMIN MENU

==========

[1] Read bicycle info from file

[2] Display all bicycle info with servicing indication

[3] Display selected bicycle info

[4] Add a bicycle

[5] Perform bicycle maintenance

[0] Exit

Enter your option: a

You have selected option a

ADMIN MENU

==========

[1] Read bicycle info from file

[2] Display all bicycle info with servicing indication

[3] Display selected bicycle info

[4] Add a bicycle

[5] Perform bicycle maintenance

[0] Exit

Enter your option:

1. The last alphabet of a Singapore IC number serves as a means to check if an IC number provided is valid.

To validate a given IC starting with ‘T’, the first, second, third, fourth, fifth, sixth and seventh digit needs to be multiplied by 2, 7, 6, 5, 4, 3, and 2 respectively. The result of the multiplications will then be added together. 4 will then needed to be added to the total. This is followed by obtaining the remainder after division by 11.

An example is given below:

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| Given an IC ‘T1234567B’, the total is computed as  1×2 + 2×7 + 3×6 + 4×5 + 5×4 + 6×3 + 7×2 + 4 = 110    110 ÷ 11 = 10 with 0 remainder |

Following which, the last alphabet in the IC can be checked by matching the remainder with the code:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| J | Z | I | H | G | F | E | D | C | B | A |

So for this case, since the check alphabet ‘B’ does not match the code ‘J’ for remainder 0, the IC is validated to be False.

Write a C# program that

* Prompts user to enter a Singapore IC number starting with ‘T’
* Pass the IC number to a method that returns true if the number is valid or false if otherwise
* Displays the validity of the given IC number in the console.

The following shows a sample run of the program. The input value is underlined.

Enter the IC to be validated: T1234567B

Validity of the IC: False

Enter the IC to be validated: T1234567J

Validity of the IC: True