**Assessment 2: Individual Assignment (40%)**

All the problems listed below must be solved by writing a pseudocode and by writing program code with documentation (using comments). **Each problem is** **worth 10 marks**. Documentation is worth **4** marks and the program code **6** marks.

1. Write a program that takes a person’s details (name, age and a city), and writes to a file (persons.txt) using a loop repeatedly. You should write three person’s to the file. The program terminates on entering any key by the user, except on (Y or y) key. Sample output of the first run of the program is shown below:

|  |
| --- |
| Enter name: John  Enter age: 20  Enter city: Sydney  Data saved: John 20 Sydney  Press (Y or y) to add another person, or any key to exit |

1. Write a program that read a file (persons.txt) from previous question -Q1, and shows all the records/lines from the file as a nicely formatted report with a header as shown:

Name Age City

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1. The body mass index (BMI) is calculated as a person’s weight (KG) divided by the square of the person’s height (in inches). A BMI in the range 19-25 (inclusive) is considered healthy. Write a program that calculates a person’s BMI and prints a message telling whether they are above, within, or below the healthy range. This program must keep on calculating BMI for the given input till user says, “they don’t want to continue”.

Hint: use a while loop and ask the user if they want to calculate BMI. If the answer is “Yes”, continue with calculations. If the answer is “No” quit the program.

Example:

Input:

Height = 1.78 m

Weight = 102 KG

Process:

BMI = 102 / (1.78\*1.78) = 32.2

Output:

Your BMI is 32.19. You are obese. Lose weight to live longer.

See <https://bmicalculatoraustralia.com/> for an example BMI calculator.

1. Write a simple guessing that generates a random number between 1 and 7 and asks the user to guess the number. If the user guess (input value) matches the program’s random number. It prints “Congratulations! You won” else prints “Sorry Try again”. Use a loop so that the user gets to play the game repeatedly unless the user decides to quit.

Example – If the program’s random number is 6 and the user guess number is 5.

Program output:

|  |
| --- |
| Guessing Game    Guess my number: 5  Sorry, correct guess number was 6  Press “Y” to play again, or “Q” to quit |

## **Submission Requirements**

Students must submit their Assignments through Moodle shell. Email submission will not be accepted.

**Deliverables:**

Pseudocode and a program code (with comments) for each program in a word document.

The word document and the python source code files must be saved in a Folder. The folder must be compressed (ZIP it) and submitted through Moodle Shell before the Deadline.