SCIT, University of Wollongong
CSIT110/CSIT810
Autumn Session 2018

Assignment 5 (5%) due on **Sunday 29 April 2018 23:59PM**

Objectives

- Able to write clear code with comments and follow coding convention
- Able to use string format
- Able to use output alignment
- Able to get user input
- Able to use arithmetic operations and functions
- Able to use the for loop and the while loop

Instructions

Put all your python code into a single file and submit it via the eLearning site (Assignment 5 Submission on Moodle).

You may be asked questions about your code in the lab. Your **marks will be deducted** if you could not answer the questions presented by the tutors.

Late submissions will be marked with a 20% marks deduction for one day late, including weekend. Submissions more than 3 days late will not be marked.

If you need an extension, please apply for an Academic Consideration through SOLS on or before the assignment due date.

Plagiarism is treated seriously. If we suspect any work is copied, all students involved are likely to receive zero for the entire assignment.

Assignment questions.

Write clear code with **comments** and follow **coding convention**. Comments should include your name, student number and subject code on top of your code.

Question 1. Write a program to display square numbers and their last digit. The program should ask the user to enter the minimum and maximum number to take square. Below is how your program should work. The text in **bold** indicates the user input. The 3 columns should be left, right and center aligned, respectively.

a) Write the program using the **for loop**
b) Write the program using the **while loop**

```
Enter a minimum number to take square: 100
Enter a maximum number to take square: 105

Output using the FOR LOOP:
Number                 Square         Last Digit of Square
100                     10000                    0
101                     10201                    1
102                     10404                    4
103                     10609                    9
104                     10816                    6
105                     11025                    5

Output using the WHILE LOOP:
Number                 Square         Last Digit of Square
100                     10000                    0
101                     10201                    1
102                     10404                    4
103                     10609                    9
104                     10816                    6
105                     11025                    5
```

Question 2. Write a program to ask the user to enter an amount of money to borrow from a bank, an interest rate and the loan term. Then using **the for loop**, display a statement as in the following example:

```
Enter an amount to be borrowed:  100000
Enter the interest rate (in percentage):  2.6
Enter the loan term (in year): 4

                Start of year    Interest at 2.6%         End of year
Year 1                $100000              $2600             $102600
Year 2                $102600              $2668             $105268
Year 3                $105268              $2737             $108005
Year 4                $108005              $2808             $110813
```

Here is another example:

```
Enter an amount to be borrowed:  1000
Enter the interest rate (in percentage):  1.05
Enter the loan term (in year): 3

                Start of year   Interest at 1.05%         End of year
Year 1                 $1000                $10               $1010
Year 2                 $1010                $11               $1021
Year 3                 $1021                $11               $1032
```

Note that:

- The borrowed amount is an integer number and you do not need to check the user input.
- The interest rate is decimal number.
- The loan term is an integer number.
- In the yearly calculation, all the money amounts and interests are round off to integer values.
- The **length of each column** is up to your decision, however, the program has to produce the **exact alignment** as above.
- The program should use **suitable variables**.
- The program has to use **the for loop**.

END OF THE ASSIGNMENT