# BCPR301 – Advanced Programming
# Assessment 3

This assessment is worth **20% of the marks** out of the total of 100 for the whole course grade of BCPR301.

***Deadline***
- You must hand in all required material by **10am, Wednesday, 8 November**.

This assessment relates to the following learning outcomes:
3. Appropriately identify and apply techniques for integrating software components and frameworks.
4. Evaluate the effectiveness of work, and make recommendations accordingly.

***This is an INDIVIDUAL Assignment. Each student must work on their own DIFFERENT program. You will be responsible for obtaining and installing the framework and all other necessary resources for you to complete this assignment.***

## Tasks:

Improve (and extend) your assignment 2 solution by applying design patterns.

You must also submit your **self-marking sheet** to indicate how many marks you think you can get for each section in the marking guide provided below. **No marks** will be given if you do not submit your self-marking sheet.

After you complete your assignment, please put all files required by this assignment in a single .zip file and submit it to the drop box in the course Moodle site.

It is a good idea to always refer to the line number and file name in order to clearly state which piece of the code you are talking about in your answers.

## Marking guide:

**There are 25 * N marks in total in this assignment where N = 2. Marks are awarded based on correctness.**

1. Identifying **N** design patterns used in the frameworks in this assignment (5 * N marks)

   1) The name of the design pattern identified (N marks)
   2) The locations of code involved in the framework (i.e., file name & line numbers) (2 * N marks)
   3) The class diagram of the design pattern identified. All the components in the design pattern class diagram provided in our textbook should be explicitly labelled in your class diagram. (2 * N marks)

   *You could follow the style of presentation in "JUnit Cook's Tour"*
   *http://junit.sourceforge.net/doc/cookstour/cookstour.htm*

2.  Applying **N** design patterns in your assignment 2 solution (20 * N marks)

    1)  The class diagram before your modification (2 * N marks)
    2)  The locations of code involved (i.e., code reference) in your assignment 2 solution (2 * N marks)
    3)  The name of the design pattern applied (2 * N marks)
    4)  The reasons why applying this design pattern is suitable; the reasons MUST be specified for the particular situation you try to apply, i.e., do not just give general reasons why using that design pattern is good. (2 * N marks)
    5)  The class diagram after your modification; all the components in the design pattern class diagram provided in our textbook should be explicitly labelled in your class diagram. (2 * N marks)
    6)  Applying the design pattern proposed (10 * N marks)

    *Note that if really necessary you could add new features to your assignment 2 solution. Please do discuss with the tutor before doing it.*

    *Your source code needs to pass PEP8 check.*