

## Question 1

- Large and complex problems have numerous issues, variables, and programs involved. Such problems are less stable and need a tremendous amount of research just to try to solve them.
- Large and complex solutions have a lot of steps to be followed and there will be no guarantee that the solution achieved is an optimal one
- Large and complex problems are the main cause that lead to large and complex solutions. Solving a problem can and most likely will lead to another (hopefully a less complex and a smaller one)

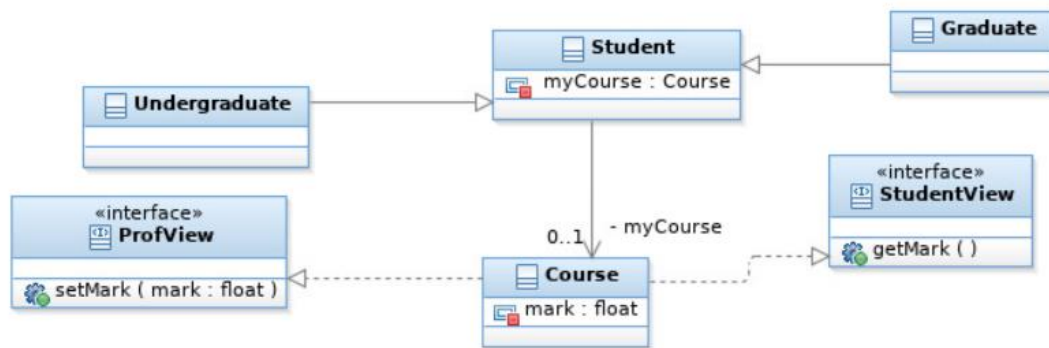
## Question 2

- Decomposition is dividing or chunking or breaking down a large problem into smaller ones that are easier to understand, therefore, solve. For the bookstore model, it would mean dividing the problem to inventory, orders, and so on (The other classes we had in lab 5)
- Modularization is a technique in which a software system is divided into independent and discrete modules in order to carry out the required tasks independently which is to be expected after such a technique. In lab 5, an example is control classes
- Separation of concerns is a design principle that separates a computer program into distinct features that rarely overlap, we organize the separated parts of the program into layers (UI, Control, Data Access, and Data Layer)

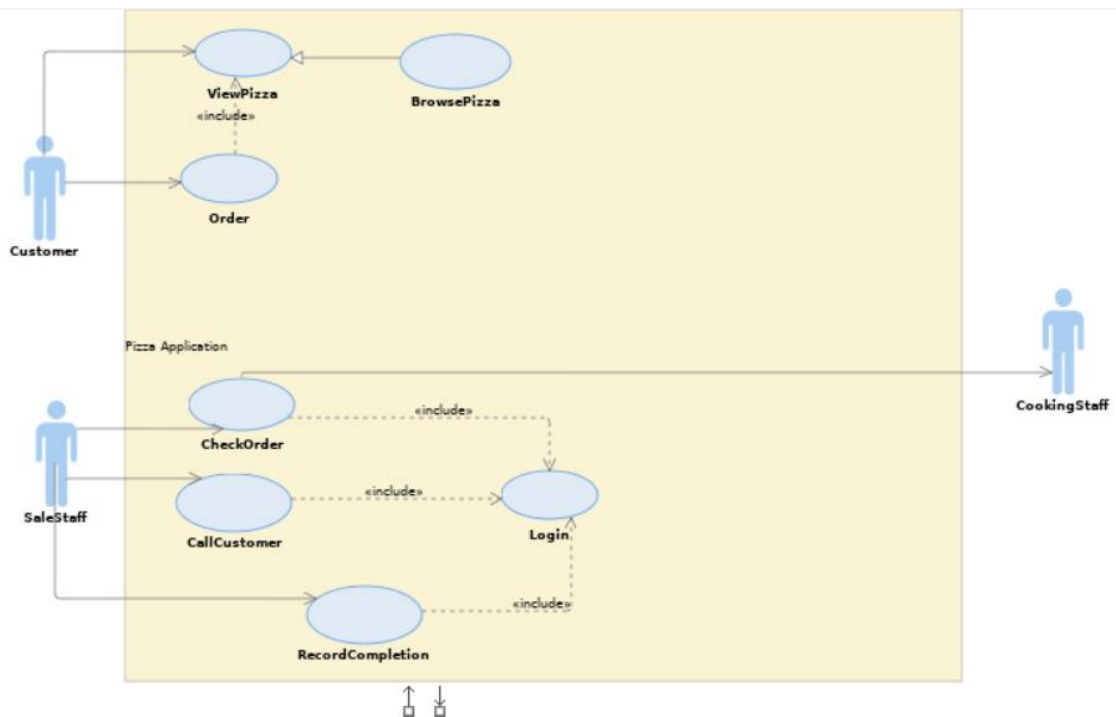
## Question 3

- Continuous integration is integration changes made into the system continually as they are done. Tasks need to be done in a sequential order, therefore, implementation can only be done when the design is ready. Similarly, testing can only be done when the implementation (phase) is complete (basically when we are through with the implementation phase.)
- Design: at this phase, it is a prerequisite that the software engineers have understood the problem and are working cooperatively and collectively to find a design for the solution.
- Implementation: this is the phase where the software engineers write the code.
- Unit test: testing and modifying the code written in the implementation and modifying it as needed.

## Question 4



## Question 5 A



5B

