

# CSE2101 Software Engineering Fundamentals

## Tutorial 4

### Part A: Discussion

Topic (Lecture 4): Software Requirements Modelling

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1. Give three reasons for requirements modelling.
  - follow the clients wants
  - see the design is it follow what u imagine?
  - reduce the risks & costs
2. Is it possible to begin coding immediately after a requirements model has been created? possible. bcs u already
3. Describe how the CRC cards can be used to identify classes in requirements analysis.
4. There are two different types of “states” that behavioural models can represent. What are they? passive - current status of object  
active -
5. How does a sequence diagram differ from a state diagram? How are they similar? reflect one another
6. What is the purpose of the interaction model for a Web/Mobile App? prototype, customer can try out the model to know how it works
7. What is the purpose of a configuration model?
8. How does the navigation model differ from the interaction model? navigation - just show the page (from one state to another state)  
interaction - can click in & enter the username & password (how the system interacts with user, what does it do)

### Part B: Exploration

Topic: Software Requirements Analysis

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1. Refer to the following URL and discuss the usage and representations in Class Diagrams:  
[http://en.wikipedia.org/wiki/Class\\_diagram](http://en.wikipedia.org/wiki/Class_diagram)
2. Refer to the following URL and discuss the usage and representations in Entity-Relationship Diagrams:  
[http://en.wikipedia.org/wiki/Entity%E2%80%93relationship\\_model](http://en.wikipedia.org/wiki/Entity%E2%80%93relationship_model)
3. Refer to the following URL and discuss the usage and representations in Class-Responsibility-Collaboration (CRC) cards:  
[https://en.wikipedia.org/wiki/Class-responsibility-collaboration\\_card](https://en.wikipedia.org/wiki/Class-responsibility-collaboration_card)
4. Identify a Web application that you often use. Discuss the following models for the Web application:
  - Content model attribute from use cases
  - Interaction model use-cases, sequence diagrams, state diagrams, a user interface prototype
  - Functional model activity (process)
  - Navigation model
  - Configuration model

5. Identify a mobile application that you often use. Similarly discuss the models for the mobile application.

## **Part C: Project**

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Start a Visual Paradigm project to save your project work in this tutorial. You can also use the project from previous tutorial.

1. For each use case assigned, review the description so that it clearly describes the interaction between the actor and the system, and the required processing. Ensure that at least the following items are identified:
  - the data to be entered by the actor,
  - the data or information to displayed/sent to the actor,
  - the data to be stored to the database/file,
  - the data to be retrieved from the database/file
2. Based on the data identified in the use cases, create the classes to represent the data. Draw a Class Diagram with all the classes in the system. Identify the attributes for each class based on the descriptions of data to be retrieved and stored in each class. Refer to the following webpage on how to draw class diagrams:  
  
[http://www.visual-paradigm.com/support/documents/vpuserguide/94/2576/7190\\_creatingclas.html](http://www.visual-paradigm.com/support/documents/vpuserguide/94/2576/7190_creatingclas.html)
3. Identify the relationships between the objects, if any, and draw the relationships in the Class Diagram accordingly.