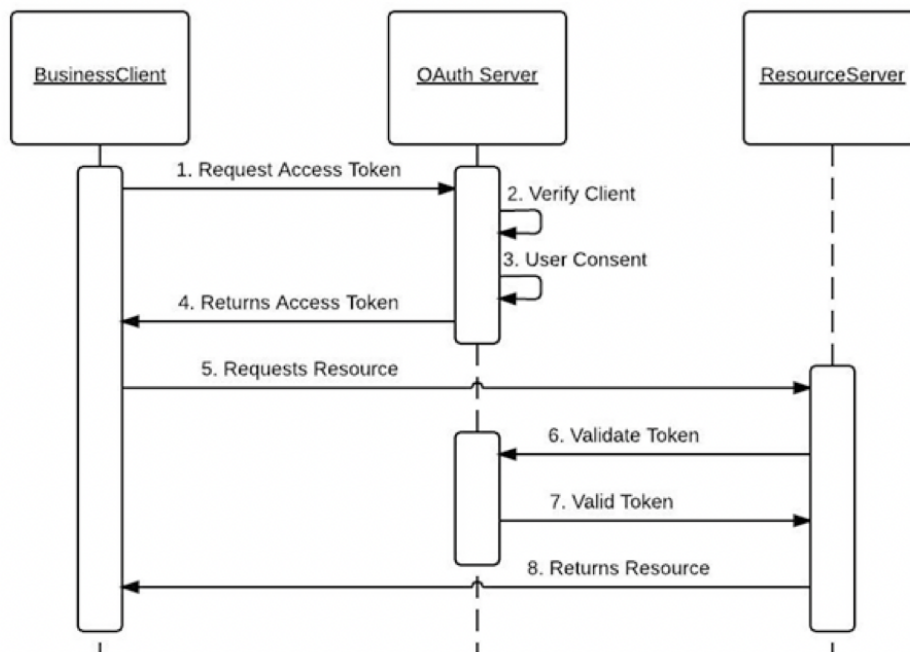# Week 6: Dynamic Models

1. **Reading UML sequence diagrams** In plain English sentences, describe the scenario represented by the following UML sequence diagram. You can read more about this (real world!) scenario at
https://docs.oracle.com/cd/E82085_01/160027/JOS%20Implementation%20Guide/Output/oauth.htm

2. **Reading UML state diagrams** In plain English sentences, describe the scenario represented by the following UML state diagram. For more details see the source for this example which includes actions for managing a waiting list and actions for state changes. https://www.tutorialspoint.com/uml/uml_statechart_diagram.htm
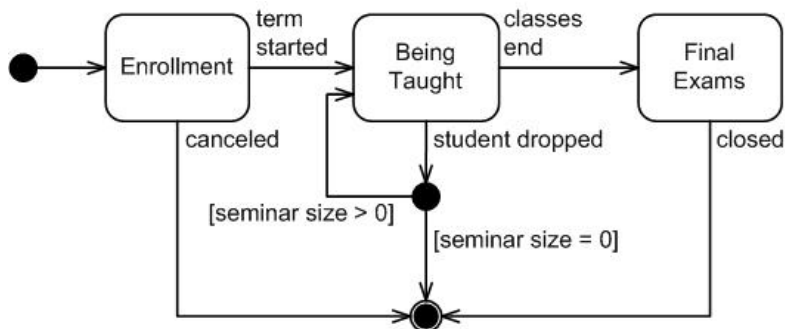
3. **Developing UML sequence diagrams** Consider the following scenario for registering a patient in a hospital management system.

> The administrator enters the patient's name, address, data of birth and emergency contact details into the system. If the patient has only public health insurance, the administrator enters the patient's Medicare number, and the system verifies this with government health database. If the patient also has private health insurance, then the administrator enters also the patient's private health insurance details, and verifies these details with the private health insurance system. When these details are verified as correct, the system saves the patient's details and confirms the registration

   (a) Identify the actors in this scenario
   (b) Sketch a UML sequence diagram for the scenario where the administrator registers a patient who as only public health insurance.

4. **Developing UML state diagrams** Draw a UML state diagram to describe the states of the following security light system.

> A security light system has a switch and a motion sensor attached. It can be either armed or unarmed. If the switch is in the off position the light is off and the system is unarmed. When the switch is turned on, the light stays off but the system is armed. If the system is armed and the motion sensor detects movement, the light comes on. If no movement is detected for 5 seconds, the light goes off.