Scope and Coverage

This topic will cover:

- How to break down a complex problem
- Analysis of a problem
- Design of a solution

Learning Outcomes

By the end of this topic students will be able to:

- Analyse a scenario
- Design a solution to a problem

Introduction

- The examples we have been seeing in the lectures are very simple.
  - They have to be, because they are designed to show specific features of UML.
- Today's lecture isn't really a lecture
  - It's a prompted working through of a more complex case study.
- We do not fully explore the case study in the lecture.
  - You'll have to do some of it in your own time.

The Scenario

- You will have been provided with paper or electronic copies of the scenario.
  - Spend time thinking about how you would approach the analysis and design of this system.
- For the purposes of this case study, you are required to do the following:
  - Create paper prototypes
  - Generate use-case diagrams
  - Generate class diagrams
  - Generate activity diagrams

Step One

- Your first step should be to understand the scenario.
  - Read it through
  - Ask for clarification if you need it
  - Resolve ambiguities
- Once you have done that, a good starting point is either NLA or identifying use-cases
  - You should do both of these before you progress to the next part of the analysis and design.

Step One

- Also, note that you have **three** different front-ends and users to consider.
  - Customers
  - Admin staff
  - Drivers
- These require three different approaches:
  - Phone
  - Desktop
  - Smartwatch

Step One

- Templates will be provided for you to use as part of your paper prototyping work.
  - Use these to sketch out how you imagine the system working.
- Make use of your colleagues in the class.
  - Help each other with testing and evaluation.
  - Participate in each other's Wizard of Oz simulations.
- Pay attention to what people say.
  - And what that means for your design.

Step Two

- Having identified some use cases and candidate classes, you should assess each for inclusion in your class diagram.
  - Get rid of redundancies
  - Get rid of synonyms
  - Get rid of those things you cannot eventually develop.
- Make a case for inclusion or exclusion for each of the candidates you have.
  - Then, construct your class diagram.

Step Three

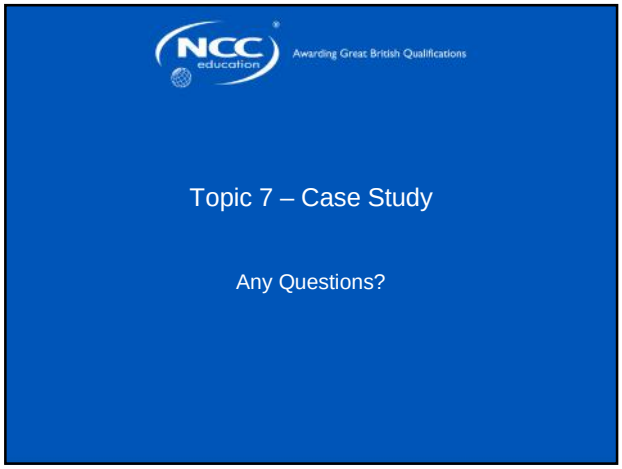
- Next, you need to consider how the current system works.
  - Design high level activity diagrams for the following processes:
    - Making a reservation
    - Viewing a reservation
    - Cancelling a reservation
- These should be diagrams of how the system currently works.

Step Four

- Having developed diagrams of the existing processes, you should then design the low-level activity diagrams that will handle the process when it is implemented.
  - Work out how you will handle what was once done by humans.
  - Work out how to improve the flow of logic through each of the processes.
  - Draw the diagrams.

The Seminar

- During the seminar, you will be given a worked solution to this exercise.
  - It will very likely deviate from your solutions, but that's okay.
    - It's the process that matters – there are many right answers.
- During your private study time, you should attempt those parts of the system that have not been addressed in the solution.
  - Your solutions to these will be discussed in the tutorial.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Topic 7 – Case Study
Any Questions?