COMP47480 UML Exercise

1. Use Case Modelling

Create a Use Case Model for a supermarket self-checkout system. In case you've never used one, Meredith will demonstrate one for you here:
https://www.youtube.com/watch?v=KydkYTkcYXk
Also, Sam and Mashal are domain experts and can answer any questions you have about how self-checkout systems work.

Notes:
- Include all actors in your model.
- Detail only the use cases for a shopper checking out their goods.
- Create the main success scenario first, then think of all the other extensions (e.g., credit card fails to scan etc.)
- You may find reason to use an <<includes>> relationship, but don't overdo it as it complicates your model.

2. Class Modelling

(A)

This UML class model represents a part of a University system. Write in plain English
(1) what this model permits and
(2) what it explicitly disallows.
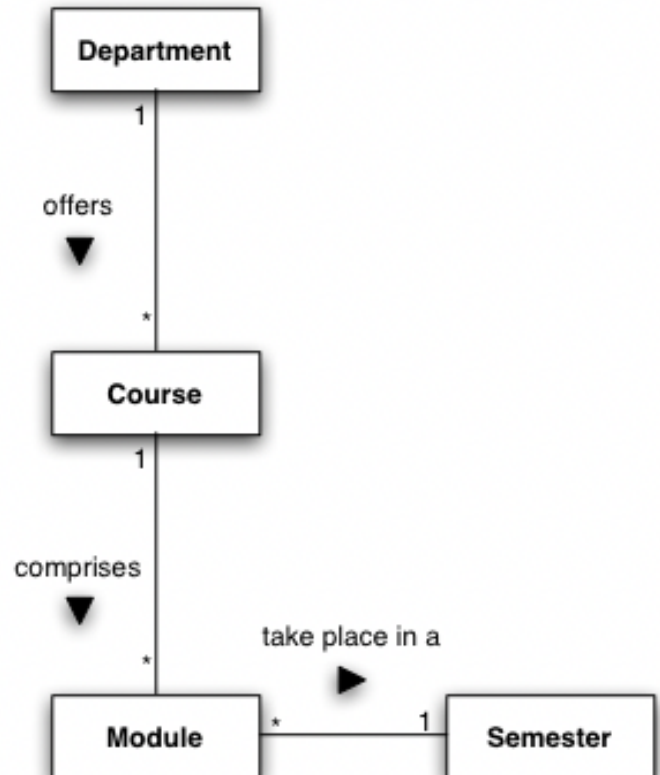
(B)

Model this using a UML Class Diagram:

"A house may have any number of pets living in it. The two possible types of pets that can live in a house are dogs and cats. Each dog or cat has a name. An animal's house is its one and only home. You can ask a pet to make noise and it will do its thing."

(C)

Model this using a UML Class Diagram:

"Some people use bicycles as a mode of transport."

3. Sequence Diagrams

Below are some further internal detail on how the supermarket self-checkout system operates. Model each of these scenarios in separate sequence diagrams.

(A)

Scan Item:
"The scanner scans the barcode and decodes this to a product id. The products object looks up this product id and provides the name and price of the scanned item. The product details are added to the customers receipt, and the new total bill is calculated."

(B)

Check Out:
"If no items have been scanned, nothing needs to be done. Otherwise the amount of the bill is displayed and the till object waits to receive cash from the customer. If the correct amount is received, the receipt is printed"