

NAME:

ID:

I declare that this is all my own work.

SIGNATURE:

# SWEN102

Introduction to Software Modelling

Midterm Test

3 September 2007

**Answer All Questions**

**Please Write Neatly**

**Time Allowed:** 50 Minutes

**Marks Overall:** 50

**Numeric Calculators Allowed.**

**Non-Electronic Translation Dictionaries Allowed.**

	Topic	Marks	
1.	Essential Use Case Cards	13 marks	<input type="text"/>
2.	Use Case Diagrams	12 marks	<input type="text"/>
3.	Domain Analysis	12 marks	<input type="text"/>
4.	Object and Class Diagrams	13 marks	<input type="text"/>

1. Essential Use Case Cards [13 Marks]

- (a) (3 Marks) Perform a *textual analysis* on the following description, to find candidate use cases. You should carefully and neatly underline key verb phrases in the text in the box.

A blogging server allows authors to start their own blogs that will appear on the web.

Once a blog is registered, blog authors can log in and post entries to their own blogs. To write an entry, they type some text that will be listed in their blog once they confirm that it should be published.

A blog reader can read any published entry in any blog on the web. Readers can also attach comments to any blog entry they can read.

Authors and commentators should always be able to preview any entries and comments they make before they appear. Authors can update the style of their blog, choosing background pictures, text fonts, and display colours — and even edit or delete their own entries after they have appeared.

Finally a system administrator must be able to delete any comments, blog entries, or whole blogs that break laws (or that they do not like).

- (b) (3 marks) Give names for the three candidate use cases you consider most important.

i.

ii.

iii.

(c) (3 marks) The blog author is an actor in this system. Write a short persona for this actor.

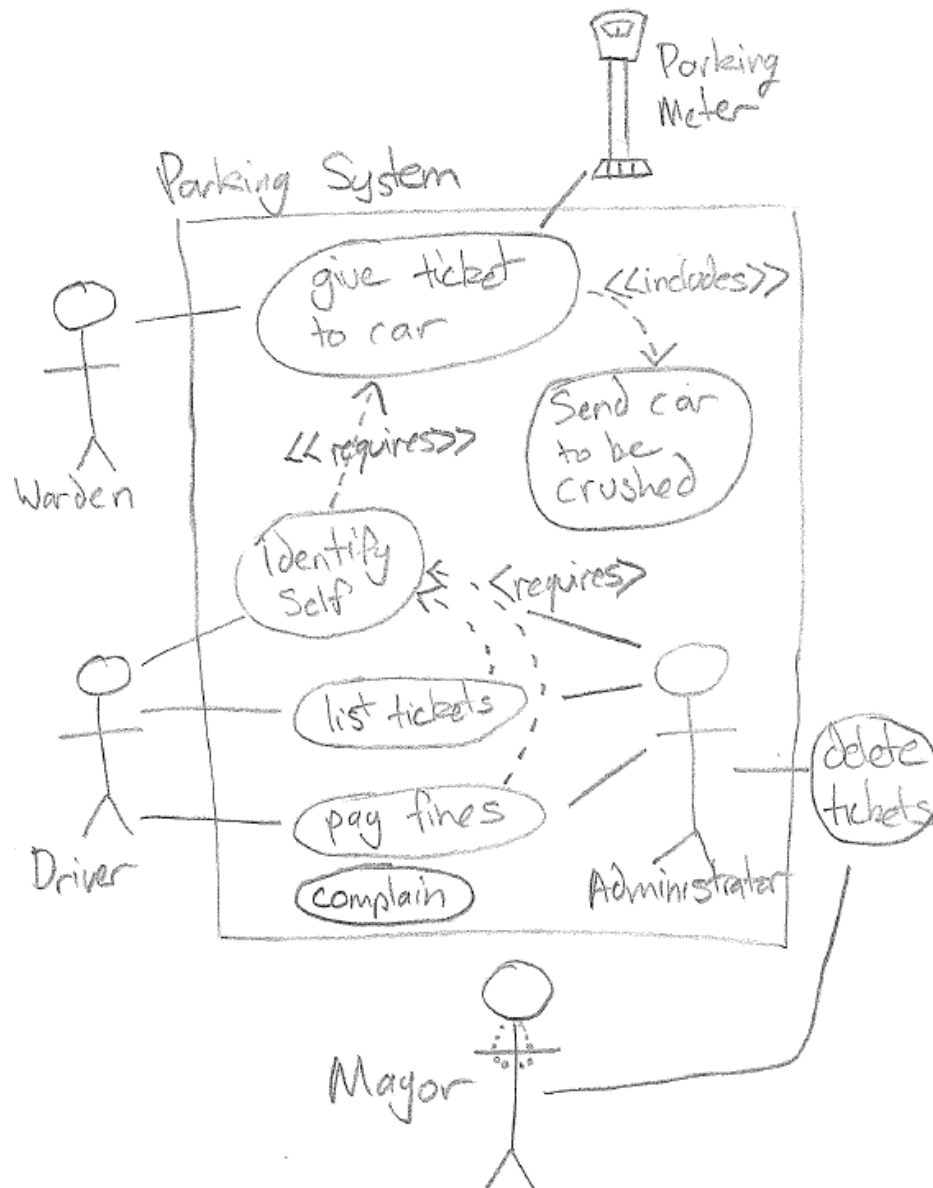


(d) (4 marks) Draw **essential use case cards** for two important and interesting use cases in this system.



## 2. Use Case Diagrams [12 Marks Total]

The following diagram shows use cases for an automated parking meter system. Parking Wardens will use the system to record parking tickets, and drivers will use the system to pay for their tickets. Unfortunately the diagram was produced by a graduate student who has now returned to working on her PhD.



Circle **six distinct** problems in this diagram. For each problem, number it and describe why it is a problem.

(a)



(b)



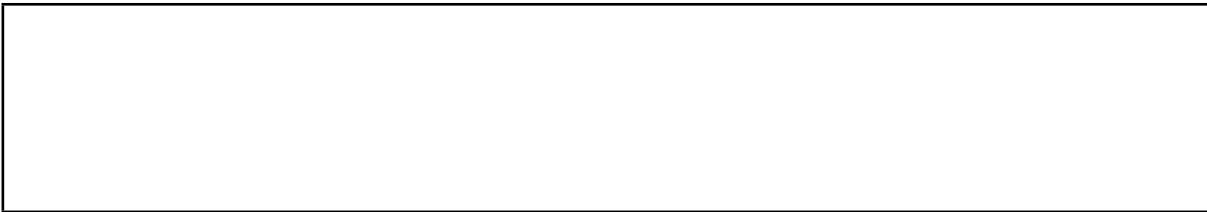
(c)



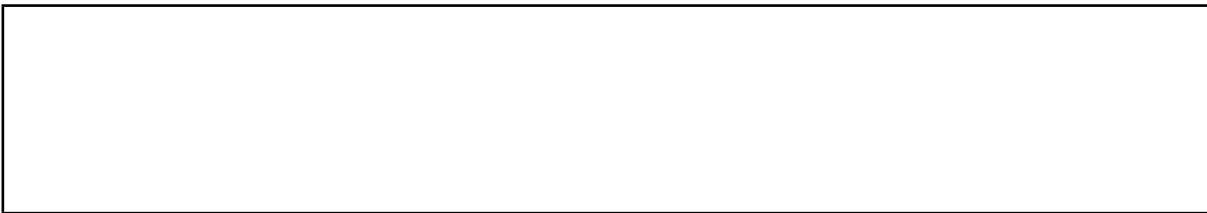
(d)



(e)



(f)



3. Domain Analysis [12 Marks]

- (a) (3 marks) Perform a *textual analysis* on the following description to find candidate classes. You should carefully and neatly underline key noun phrases in the text in the box.

DodgyTel is a new telecommunications company. A DodgyTel home customer has a name, an address, and a phone number, and a list of the telecommunications services they have paid for.

DodgyTel sells a range of services, including local calls, toll calls, international calls, and DodgyNet internet.

Each of these services has a cost, and start and end dates.

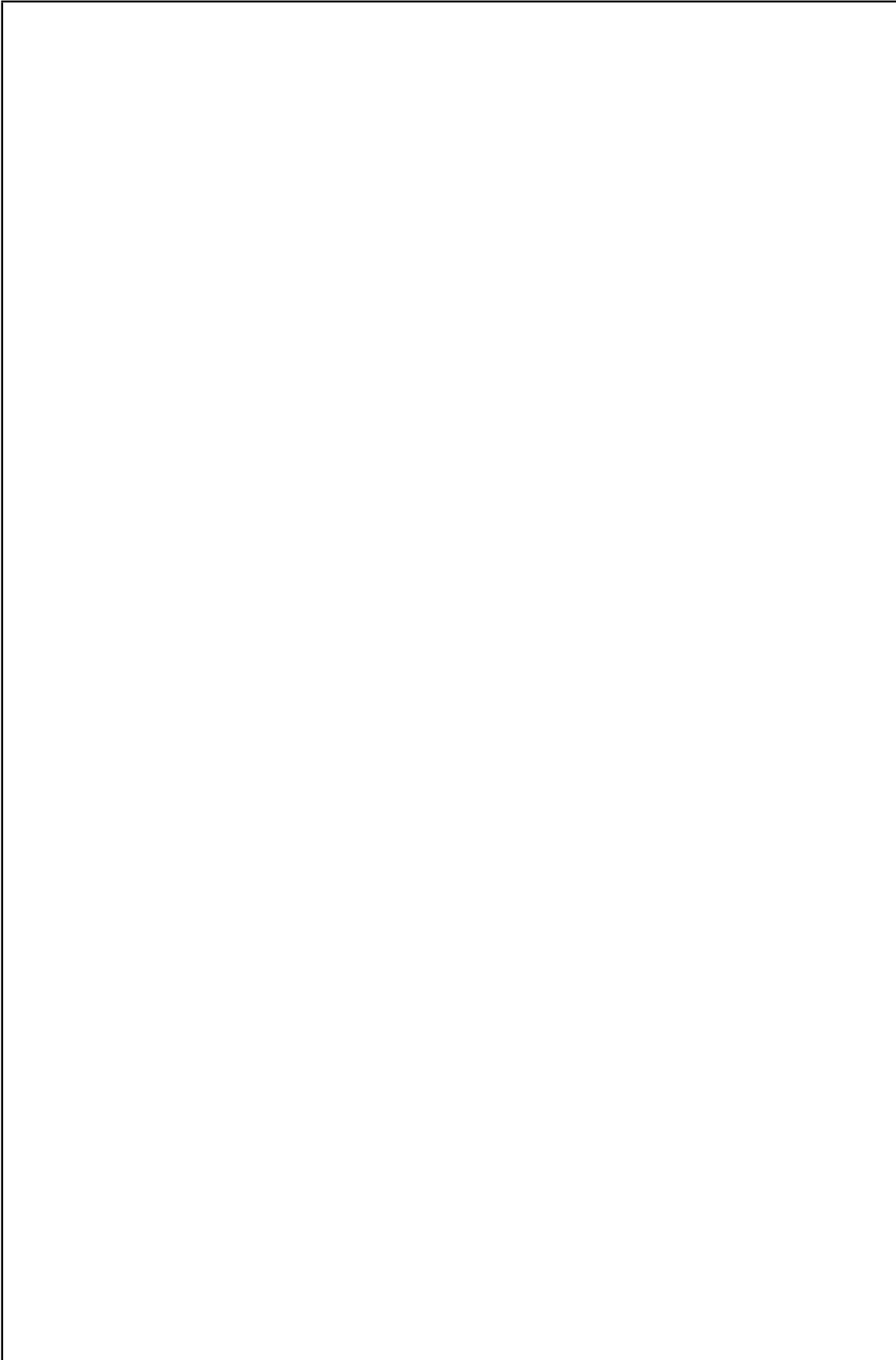
The phone services (local, toll, international) has a number of free minutes.

DodgyNet has a traffic cap in Megabytes (100, 200, or 50).

DodgyTel business customers have to use the more expensive DodgyWeb service instead of DodgyNet.

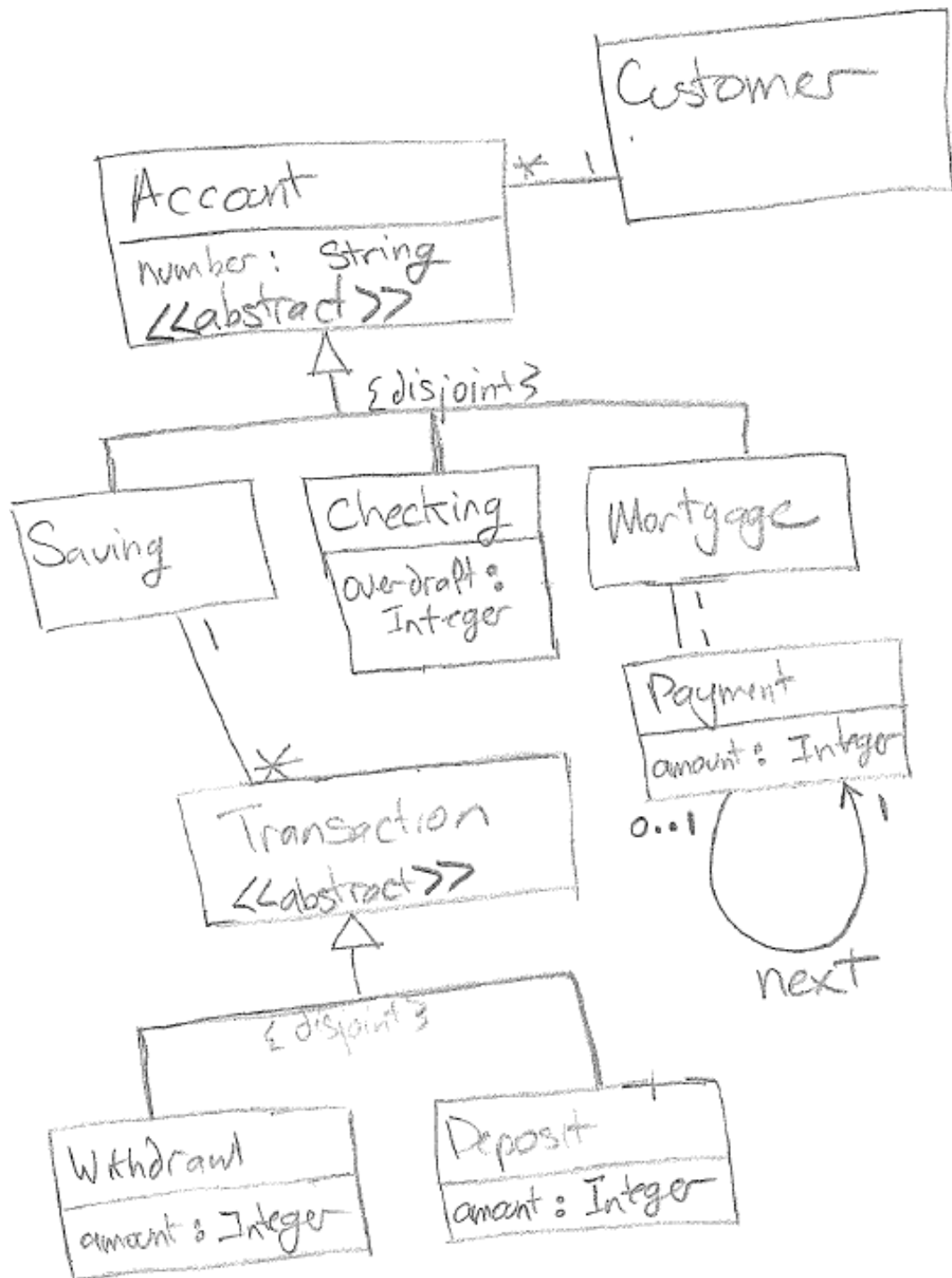
- (b) (3 marks) The description text above is incomplete. List one question you would ask the user or client of this system to clarify these requirements. If necessary, also give the answer you have **assumed** to this question.

(c) (6 marks) Draw a **UML Class Diagram** for this system.

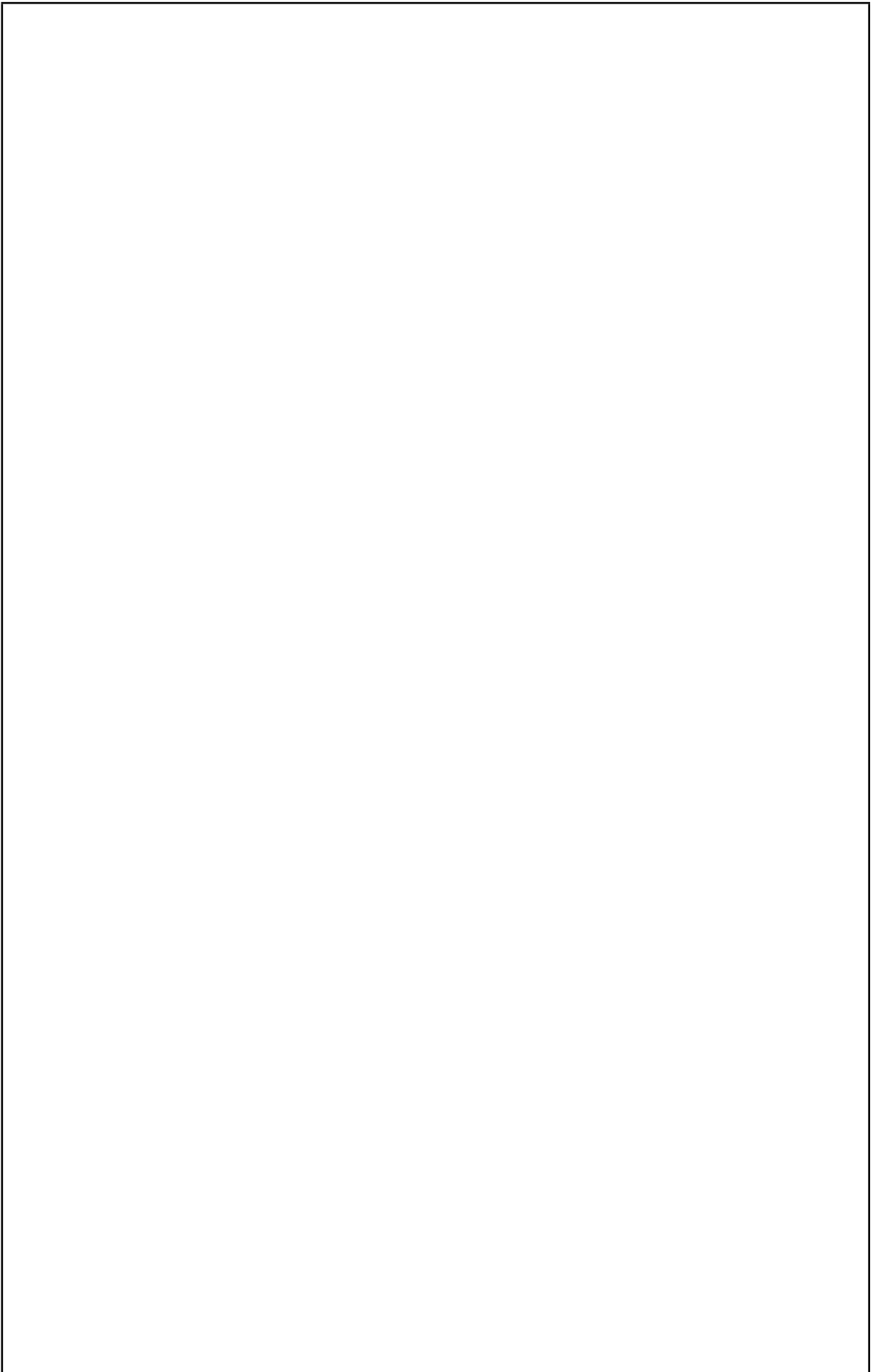


4. Object and Class Diagrams [13 Marks Total]

Consider the class diagram on this left-hand page, and draw a corresponding object diagram on the right-hand page. You should show at least two instances of each class, and your diagram should illustrate any features of the class diagram that are interesting or complex.







THIS PAGE LEFT BLANK