

**CORK INSTITUTE OF TECHNOLOGY  
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ**

**Semester 2 Examinations 2009/10**

**Module Title: Object-Oriented Programming 2**

**Module Code:** COMP7013

**School:** Computing

**Programme Title:** BSc in Computing  
BSc (Honours) in Software Development/Networking

**Programme Code:** CR\_KCOMP\_7\_Y3  
CR\_KSDEV\_8\_Y2  
CR\_KDNET\_8\_Y2  
CR\_KDNET\_8\_Y3

**External Examiner(s):** Mr. P. Given  
**Internal Examiner(s):** Ms. D. M. Dunlea  
Mr. Denis Long

**Instructions:** **Section A:** Question 1 must be answered.  
**Section B:** Choose 2 questions from this section.

**Duration:** 2 Hours

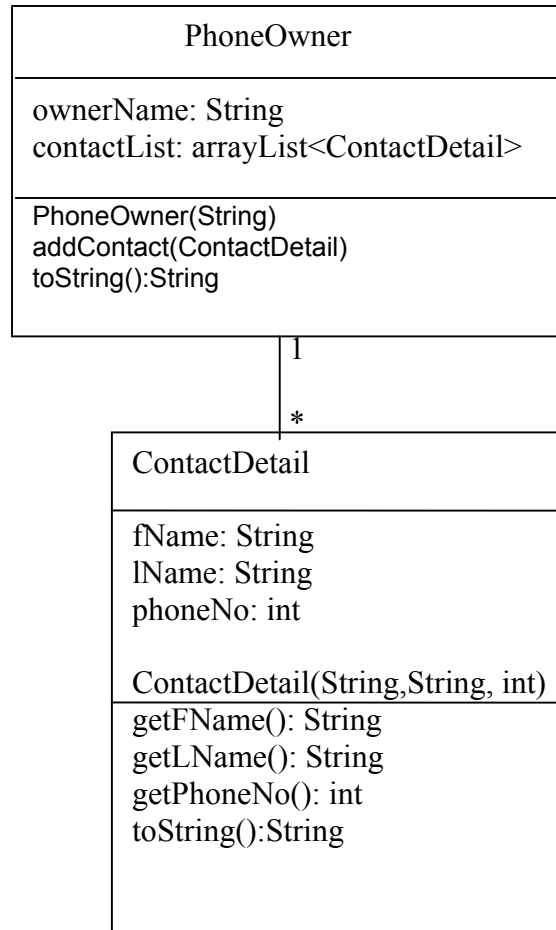
**Sitting:** Summer 2010

**Requirements for this examination:**

**Note to Candidates:** Please check the Programme Title and the Module Title to ensure that you have received the correct examination paper.  
If in doubt please contact an Invigilator.

## Section A

**Q.1 a)** Write the code for the following classes:



**(10 marks)**

- b) Create a **PhoneHandler** class (application/main) that creates a PhoneOwner and 5 contacts. Save the contacts for the PhoneOwner. Now Create two worker method with the following signatures

```
saveContactList()
loadContactList()
```

Save the PhoneOwner to a file. Check that this was successful. Now call the loadContactList(). Print out the details in the owners phone.

**(14 marks)**

- c) Explain what is meant by the term object serialization with emphasis on what needs to be saved and what doesn't? What word prevents saving certain information? **( 8 marks)**

- d) What happens during the process of deserialization?

**( 8 marks)**

## Section B

### Q.2

a) What is a Layout manager? Describe the characteristics of the following layout managers:

- BorderLayout
- GridLayout
- FlowLayout
- BoxLayout

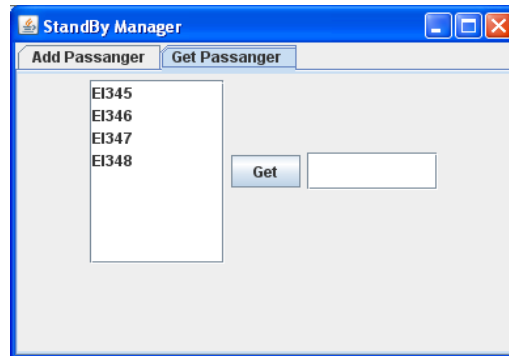
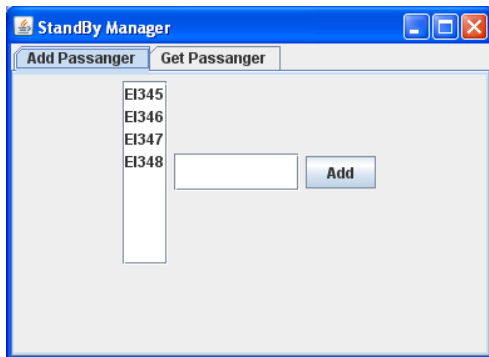
Are there any problems associated with the manual positioning and sizing of components?

(12 marks)

b) What do you understand by the term event-driven?  
Explain what an inner class is. Why are they useful when writing event-handlers?

(6 marks)

c) Provide the code for the construction of the following application, you are only required to construct the user interface not deal with the passengers or what to do when the buttons are clicked.



(12 marks)

### Q.3

- a) Show how to establish a singleton connection with a database. (9 marks)
- b) What must you do to set up the database(derby and or Mysql) before use and why? (4 marks)
- c) What potential errors might you encounter when implementing this program ? (4 marks)
- d) Write methods that:
- Writes the *getAllLectureDetailsForSubject* which retrieves a list of lecture details for a particular subject from a database. The details for a lecture include a title, an index number and the name of the document containing the lecture information. (9 marks)
  - closes what should be closed. (4 marks)

Outline a *LectureDetails* class if needed.

The database contains a table called *LectureDetails* which contains the following fields:

Name of Field:	Type
Title:	String
Subject:	String
Index:	int
DocumentName:	String

### Q.4

- a) What is an exception? (2 marks)
- b) Give an example of three different Exceptions and when they might occur? (6 marks)
- c) Describe in detail three ways that a program can deal with an exception. (6 marks)
- d) Exceptions can be Checked or unchecked distinguish between the two. (4 marks)
- e) A class accepts phone numbers from the user (keyboard) an exception is to be thrown when a phone number outside the range of 4300000 to 4399999 is entered (only internal calls are allowed in the college), or when a number of inappropriate length is used, or nonnumeric phone number is entered. Write code to implement this. (12 marks)