UNIVERSITY *of* LIMERICK

OLLSCOIL LUIMNIGH

COLLEGE *of* SCIENCE *and* ENGINEERING

Department of Computer Science
and Information Systems

Mid-Term Assessment Paper

Date:	Friday 11th March 2011 (Week 7)	Semester:	II
Module Title:	Systems Analysis and Design	Module Code:	CS4125
Duration of Exam:	1 Hour	Percent of Total Marks:	10
Lecturer(s):	J.J. Collins	Paper marked out of :	10

Instructions to Candidates:

- Answer ALL ten questions.
- All questions carry equal marks.
- Use blank leaf overleaf if necessary, and clearly label.

Name: _____

ID Number: _____

Q1: List the characteristics of "good" quality software.

Q2: Draw a diagram to illustrate that a board strongly owns 9 square, with each square being uniquely identified by row and column attributes whose permissible values are {1,2,3}.

Q3: Define polymorphism (0.33 marks). What benefits result from an implementation that is polymorphic (0.33 marks). Produce coding fragments or pseudocode to illustrate polymorphism (0.33 marks).

Q4: Briefly describe three problems associated with use case modelling for requirements engineering within an object-oriented development approach.

Q5: What is an abstract class ? (0.33 marks). What is the purpose of an abstract class? (0.33 marks) How is an abstract class identified on a UML class diagram? (0.33 marks).

Q6: Briefly describe five interaction operators.

Q7: Produce coding fragments or pseudocode to illustrate the Flows relationship, which shows dependencies between two versions of an object at different points in time - when an object has significantly changed state <<become>>, or when an object has been copied <<copy>>. An example is depicted in figure 1 below.

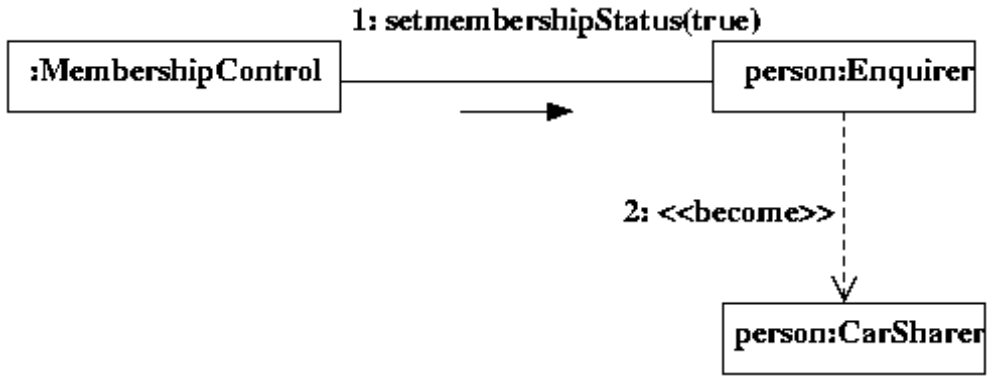

Figure 1

Q8: Use a diagram to illustrate the concept of multiple classification (0.5 marks), and discuss the rationale that motivated this concept (0.5 marks).

Q9: Write coding fragment to demonstrate how the aggregation in figure 2 might be implemented.

Figure 2

Q10: Draw a diagram that illustrates the principle of "Programming to interfaces, not implementation" (0.5 marks). Discuss a benefit derived from adherence to this principle (0.5 marks).