UNIVERSITY OF LONDON

GOLDSMITHS COLLEGE

B. Sc. Examination 2005

COMPUTING AND INFORMATION SYSTEMS

IS52018A (CIS224)
Software Projects: Software Engineering and Research Methods

Duration: 1 1/2 hours

Date and time:

Full marks will be awarded for complete answers to a total of two questions. Each question carries 25 marks. The marks for each part of a question are indicated at the end of the part in [.] brackets.

There are 50 marks available on this paper.

Electronic calculators are not allowed.

Question 1

Your software team has just won a contract to implement an online pizza delivery service (PDS). This question concerns the **analysis** phase of the project.

(a) The supported activities list is an important part of the requirements specification. Use your knowledge of online systems to prepare a list of at least five of the chief activities of the PDS.

[5 marks]

(b) Construct a use-case diagram for the PDS.

[6 marks]

(c) Make a list of candidate classes for PDS.

[4 marks]

(d) Construct an analysis class diagram.

[10 marks]

Question 2

There are (at least) four approaches to the software development process, namely,

(i) Waterfall

[6 marks]

(ii) Prototyping

[6 marks]

(iii) Incremental/Iterative

[6 marks]

(iv) Hybrid Software Development.

[7 marks]

Describe each of the above paradigms in a couple of paragraphs. Illustrate your answers with diagrams for approaches (i), (iii) and (iv). Make sure that you discuss the advantages and disadvantages of each approach.

Question 3

(a) What are the aims and outcomes of Requirements Analysis? [8 marks]

(b) Why is Requirements Analysis considered to be a very important stage in any large software project? [5 marks]

(c) What are the steps in the *analysis* phase of the software engineering methodology known as *Use Case Centred Development*? [7 marks]

(d) What is a use case? [5 marks]