

Mid-term Exam

20th March 2012

Instructors:

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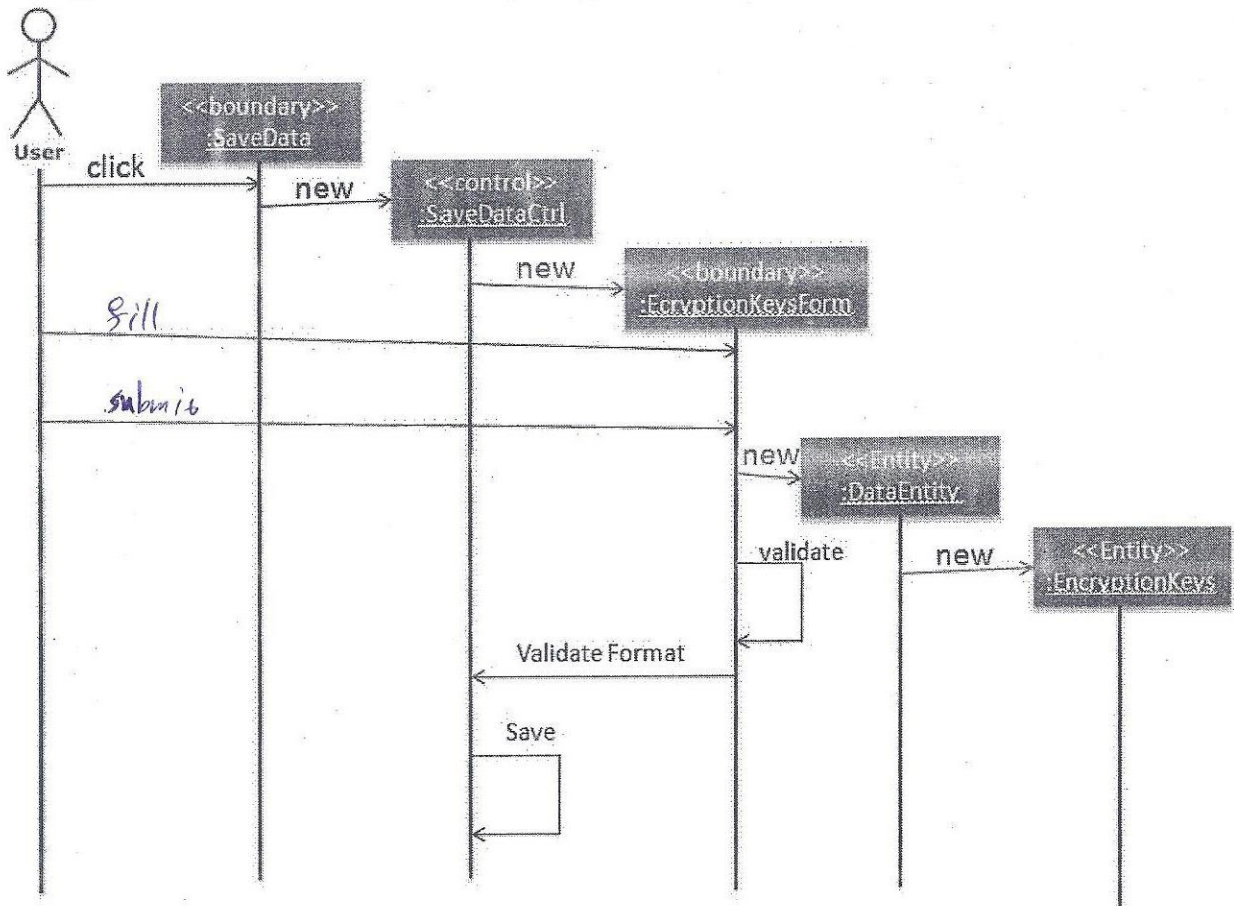
Question number 1, 35 Marks)

With no more than 3-4 lines, answer the following questions

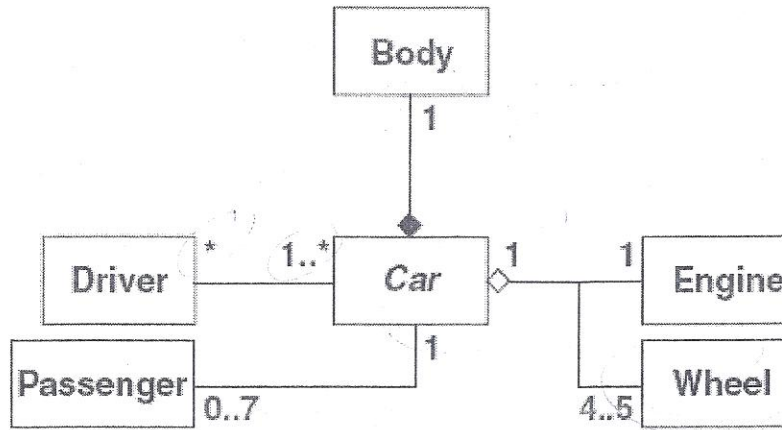
- A) Why it is so important for software to be **maintainable**?
- B) What is the purpose of **UML**? Why we need to use it when modelling O-O Systems?
- C) When can we use **include** relationship between use cases?
- D) Name two benefits gained by maintaining **traceability** between requirements?
- E) What is the benefit of using **scenarios** when describing system behaviour?

Question number 2, 15 Marks)

- A) Based on the following sequence diagram for some system, draw a class diagram showing associations and methods for each (if any).



Question number 3, 50 Marks)



A) With reference to the Figure above, which of the following statements are **true**, and which are **false**? Choose all options that apply. (12 marks)

- (a) A car always has the same body.
- (b) Some cars have spare wheels.
- (c) A car has one engine, and engines are not shared between cars.
- (d) All cars have either four or five wheels.
- (e) A car must have at least one driver.
- (f) Passengers cannot be drivers.

B) Suppose that you were hired to analyze the requirements for a library information system.

The system has to keep track of the following information related to a book:

- Book title
- Category
- ISBN number
- Authors
- Publish House
- Date of Publish

Among the features that the new system shall provide, is that ability to allow customers to search for a book online. Write down the main flow for use case search a book. (20 marks)

C) Map flow in question B to **sequence diagram**. (18 marks)