

Course No : SWE 4414 **College of Engineering** **Student No:** _____

Course Title: Object Oriented Analysis And Design **Final Exam First Term 2014/2015** **Student Name:** _____

Exam Time: 2 Hours **Eng. Ibrahim Al-Sharif** **Date: 15-01-2015**

No of Questions: 5 **Total Grade: 60** **Try to Answer: All**

1- State if the following statements True Or False: (5 marks)

1. UML is a visual programming language ().
2. Encapsulation describes the relationship between two subclasses ().
3. Inheritance describes a compile-time relation between classes.()
4. Communication diagram used in static modeling. ().
5. Static modeling describes how the logical parts should be links. ().

2- Choose The Correct Answer: (10 marks)

1. What is an aggregation hierarchy?

- (a) A weak form of a generalization/ specialization hierarchy
- (b) A strong form of a generalization/specialization hierarchy
- (c) A weak form of a whole/part relationship
- (d) A strong form of a whole/part relationship.

2. What is a composition hierarchy?

- (a) A weak form of a generalization/ specialization hierarchy
- (b) A strong form of a generalization/ specialization hierarchy
- (c) A weak form of a whole/part relationship
- (d) A strong form of a whole/part relationship.

3. What is a generalization/specialization hierarchy?

- (a) A whole/part relationship
- (b) An inheritance relationship
- (c) An association between a generalized class and a specialized class
- (d) A layered hierarchy.

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4. What is an association class?

- (a) A class with multiple associations
- (b) A class with one association
- (c) A class that models an association between two or more classes
- (d) A class that models an association between two or more objects.

5. What is meant by the multiplicity of an association?

- (a) The number of associations in a class
- (b) The number of associations between two classes
- (c) How many instances of one class relate to how many instances of another class
- (d) How many instances of one class relate to a single instance of another class.

6. What is an association?

- (a) A relationship between two classes
- (b) A relationship between two objects
- (c) A link between two classes
- (d) A link between two objects.

7. What can an activity diagram be used for in use case modeling?

- (a) To depict the sequence of activities executed by all the use cases in the system
- (b) To depict the sequence of external activities that the use case interacts with
- (c) To depict the sequence of active objects in a use case
- (d) To depict the activities in the main and alternative sequences of a use case.

8. What is an actor in a use case?

- (a) An object inside the system
- (b) A person who performs on stage
- (c) An external entity that interacts with the system
- (d) The customer to whom the system will be delivered.

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9. What is inheritance?

- (a) A mechanism for inheriting characteristics from a parent
- (b) A mechanism for sharing and reusing code between classes
- (c) A mechanism for sharing data between classes
- (d) A mechanism for hiding information between classes.

10. Which of the following is a limitation of the waterfall life cycle model?

- (a) Software is developed in phases.
- (b) Each phase is completed before the next phase is started.
- (c) Software development is cyclic.
- (d) Software requirements are not properly tested until a working system is available.

3- Answer the following questions: (25 marks)

- 1- When do we use extend and include relationships in use case diagram?
- 2- What are the activities of object oriented software systems design?
- 3- What are the activities of object oriented software systems static analysis modeling?
- 4- What are four possible types of relationship between classes?
- 5- What are the communication diagram components? explain each component.
- 6- What are the two aims of the requirement phase? Explain each aim.

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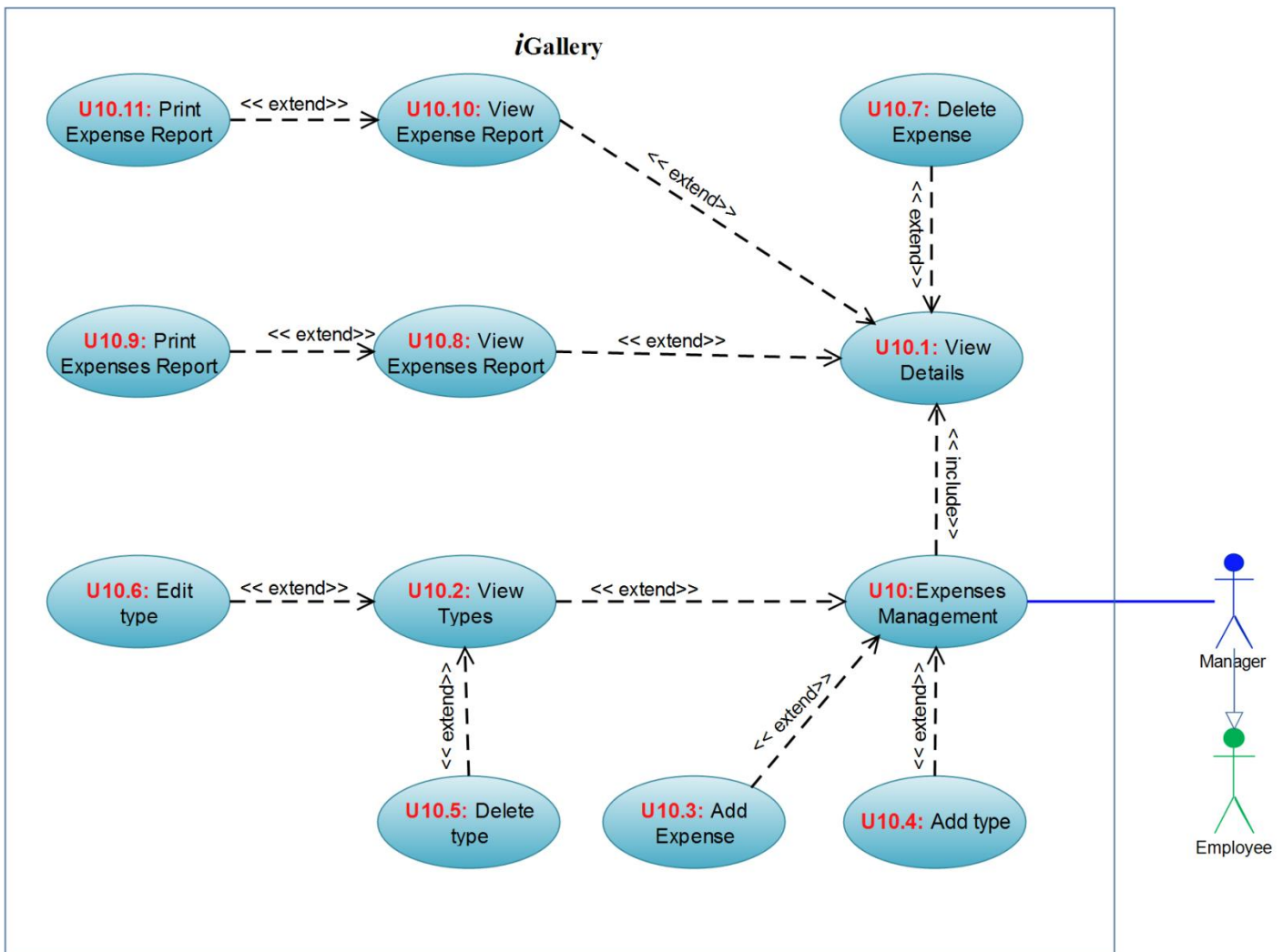
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4- Describe and extract all information from the use case diagram: (5 marks)



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5- : (15 marks)

The System to be designed is a distributed system used as a service, and used to manage online multi-branches and single-branch eyewear galleries.

Owner of gallery has to register as owner to add his gallery to the system, then manage all branches and manage employees and managers accounts.

All users have to login to their galleries and branches be able to use system services.

An employee must be able to add, delete customers , and edit all of their data such as deals, in addition to customer readings of test optometry.

Manager must be able to add, delete merchants , and edit all of their data such as deals.

It is must also be able to add, delete and modify types and brands of each type of goods.

- **List** an actor list (with descriptions).
- **List** a use cases list (with descriptions).
- **Draw** user interface sketch for employee screen.
- **Draw** Class Diagram with attributes, behaviour and relations.

Best Wishes..