

CS401 Modern Programming Practices

Quiz – 1 – Lesson 1 – 5

Total : 30 Points

Id :

Name of the Student :

Date : 9/10/18

I. Circle the right answer. [1 Point Each]

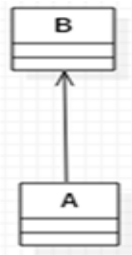
1. Composition is more flexible but does not support polymorphism.

- a. True b. False

2. Which method helps to identify the domain class from the problem description?

- a) Noun phrase analysis b) Verb phrase analysis

3. Which one of the given choice is suitable for this diagram?



- a) A inherits from B b) Dependency from A to B c) Association from A to B

4. To prevent a class from having any subclasses, the class can be declared _____.

- a) static b) abstract c) final

5. We may use a Manager instance wherever an Employee instance is expected, so having Manager as a subclass of Employee adheres _____ principle.

- a) Open closed principle b) Liskov Substitution Principle c) Encapsulation

6. How to show if looping occurred in Sequence diagram?

- a) Use Notes b) Use an Iteration Marker c) Use an Interaction Frame

d) All of the above

7. Give an example of UML diagram used for the given model.

a) Dynamic Model → Sequence Diagram / Collaboration Diagram

b) Static Model → Use Case Diagram / Class Diagram

8. Which design pattern gives us a way to encapsulate the instantiations of concrete types?

- a) Template pattern **b) Factory pattern** c) Observer pattern

9. Which one of the given diagram captures the behavior of a single scenario of a use case?

- a) Object diagram **b) Sequence Diagram** c) Class Diagram

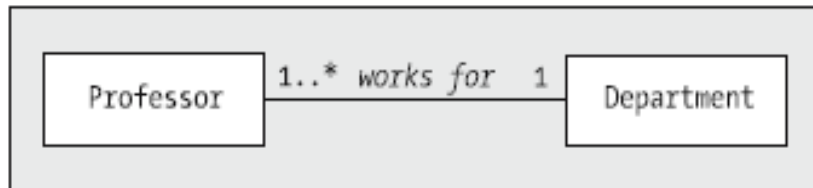
10. If a request is made of an object A and, in fulfilling the request, A in turn requests assistance from another object B, this is known as **delegation** by A to B. This statement is true or false.

- a) True** b) False

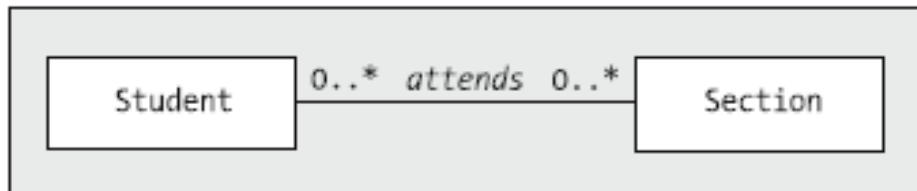
II. UML and Java

11. Draw the association for the given problem with role and multiplicity. [4 Points]

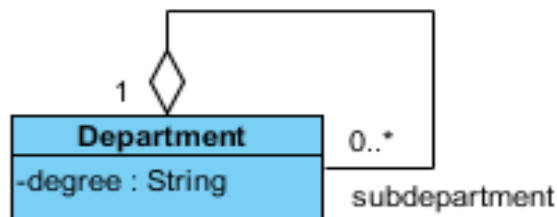
- a. A Professor works for exactly one Department, but a Department has many Professors as employees.



- b. A Student attends many Sections, and a Section is attended by many Students.



12. A University Department can contain lots of other Departments and name of the department. [2 Points]



13. Draw the sequence diagram for the given code. [4 Points]

Gardener wants to make a Gardening plan to heat or cool the green house. Initiate with an Actor.

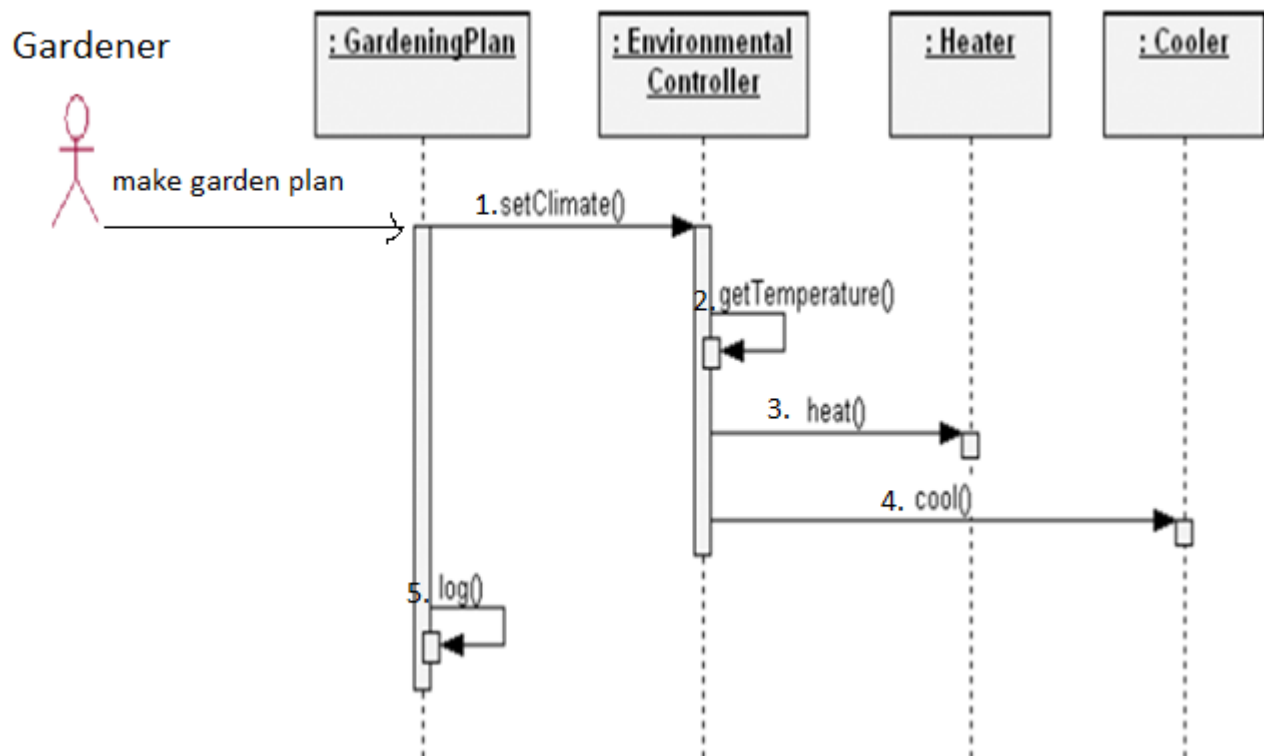
// Stating from GardeningPlan Class

```
public void makePlan(){  
    theEnvironmentContoller.setClimate();  
    log(temp);  
}
```

//From Environmental Controller class

```
public void setClimate(){  
    double temp = getTempatare();  
    cooler.setTemperature();  
    heater.setTemperature();  
}
```

Need to mention the ClassName : Object name syntax at the top



14. Draw a class model for the given problem. [10 Points]

A Bank has name and several branches in term of contacts. Each contact has its own address. A bank has many accounts. Account may be Savings Account, Business Account and Checking Account. Each account produces several statements regularly. A customer can have multiple accounts. Each customer has their own contact.

