

CS401 Modern Programming Practices

Quiz – 1 – Lesson 1 – 5

Id :

Name of the Student :

Date : 1/23/17

I. Circle the right answer. (1 Points Each)

1. Which one of the following indicates temporary relationship between the classes?

- a. Inheritance b. Association c. **Dependency**

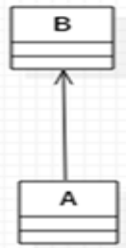
2. Composition is more flexible but does not support polymorphism.

- a. **True** b. False

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

- a) **Noun phrase analysis** b) Verb phrase analysis

4. 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**

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

- a) **static** b) abstract c) **final**

6. 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

7. 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**

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?

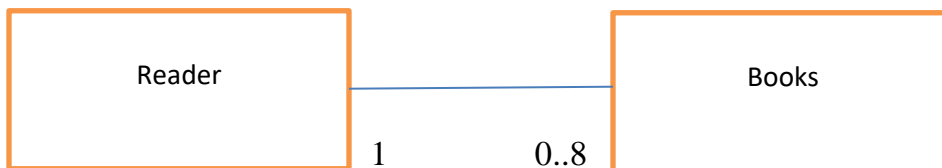
- a) Object diagram b) Sequence Diagram

10. Polymorphism makes it possible to add new functionality without modifying existing code as per the Open-Closed Principle. This statement is true or false.

- a) True b) False

II. UML and Java

11. In a library a reader can borrow up to eight books. A particular book can be borrowed by at most one reader. Draw the association and give the multiplicity. Write a Java class for your UML diagram. (4 Points)



```
class Reader{
    List<Books> books;
}
```

```
class Books {
    Reader reader;
}
```

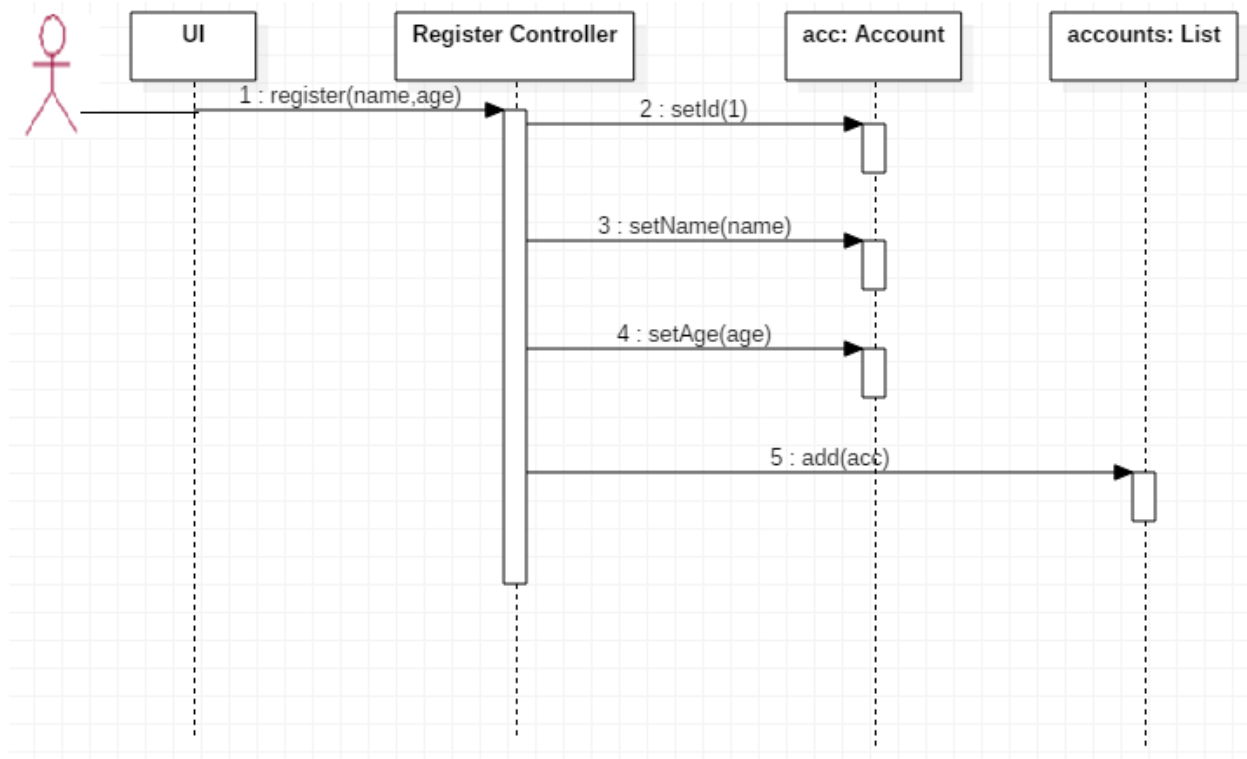
12. A Car has a Steering Wheel. Draw the UML diagram to show the association and mention the multiplicity with association role. (2 Points)



13. Draw the sequence diagram for the given code. (4 Points)

Actor can initiate the action through UI and invoke register (name, age) to the Register Controller.

```
public class RegisterController {  
    private List accounts = new ArrayList();  
    public void register(String name, int age){  
        Account acc = new Account();  
        acc.setId(1);  
        acc.setName(name);  
        acc.setAge(age);  
        accounts.add(acc);  
    }  
}
```



14. Draw a class model for the given problem.

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.

