

System Analysis & Design
Quiz 2

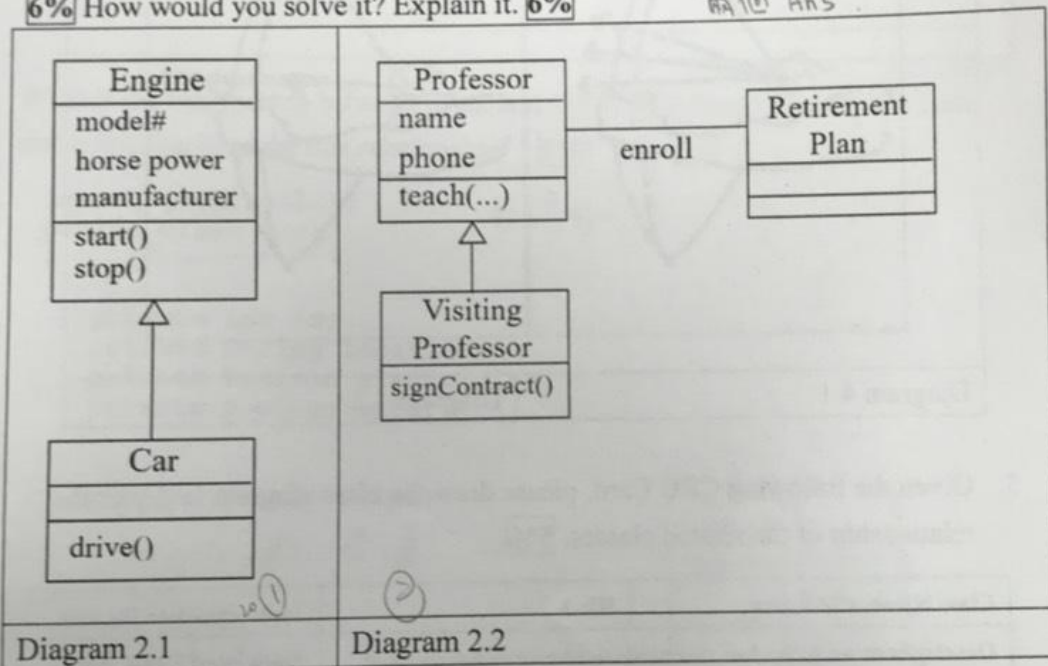
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Name: 王 翀 輝 ID: B10423041

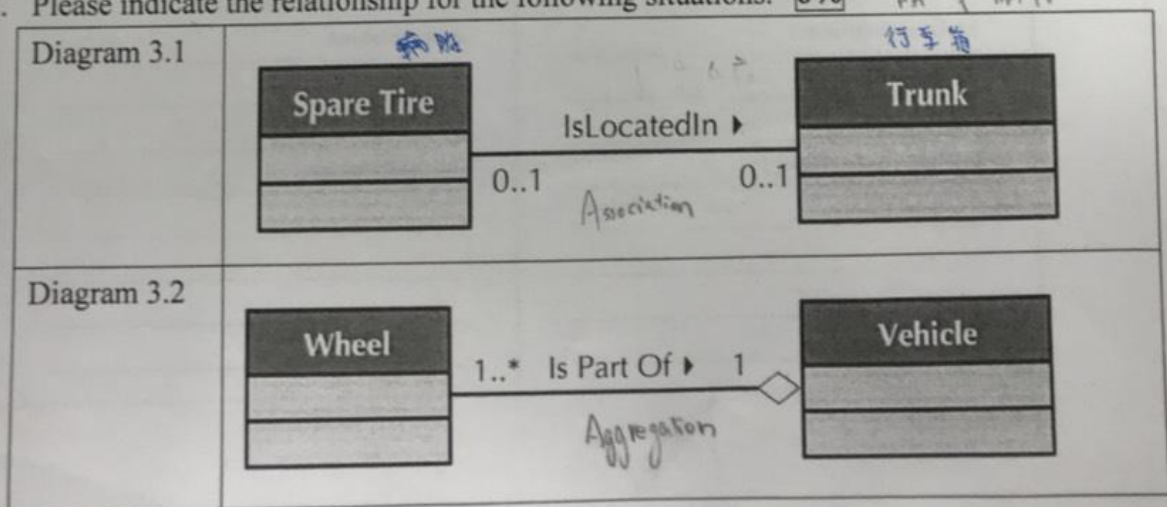
1. Please describe the differences for the following statements and their applications.
5% 解釋差異

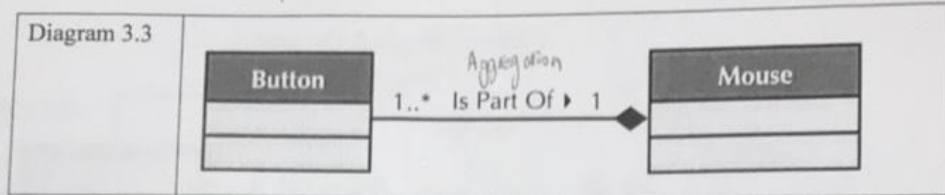
public class Dog implements Animal
public class Dog extends Animal

2. What is the problem of the following two class diagrams respectively? Explain it.
6% How would you solve it? Explain it. 6% 兩個 Ans

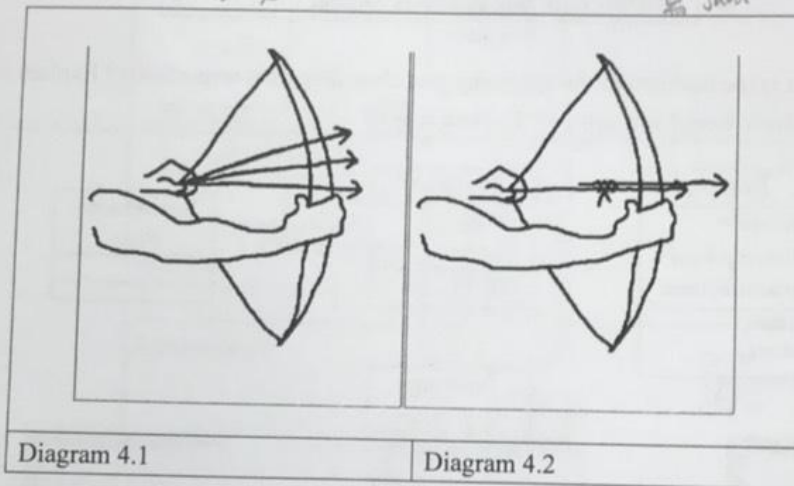


3. Please indicate the relationship for the following situations. 6% 解釋關係





4. Which one describes overloading/overriding? [2%] Which one performs at run time/compile time? [2%] Describe an example for each in Java code. [6%]



5. Given the following CRC Card, please draw the class diagram to depict the relationship of the related classes. [5%]

Class Name: Old Patient	ID: 3	Type: Concrete, Domain
Description: An individual that needs to receive or has received medical attention	Associated Use Cases: 2	
Responsibilities Make appointment Calculate last visit Change status Provide medical history _____ _____ _____		Collaborators Appointment _____ _____ Medical history _____ _____ _____

Attributes:

Amount (double)

Insurance carrier (text)

Relationships:

Generalization (a-kind-of): Person

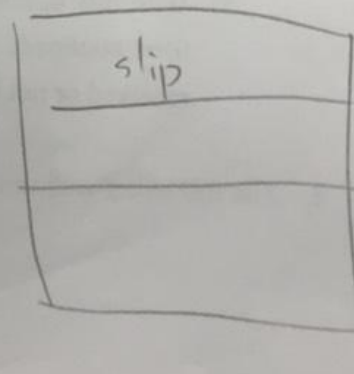
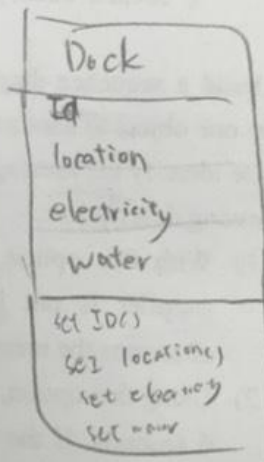
Aggregation (has-parts): Medical History

Other Associations: Appointment

6. What is the relationship between Dock and Slips? 5% Please identify the code that helps you describe this relationship. 5% 解 析 關 係

```
import java.util.*;
public class Dock
{
    private int id;
    private String location;
    private boolean electricity;
    private boolean water;
```

```
    private Vector slips;
```




```

public Dock(int anId, String aLocation,
             boolean anElectricity, boolean aWater)
{
    setId(anId);
    setLocation(aLocation);
    setElectricity(anElectricity);
    setWater(aWater);
    Slips = new Vector(10);
}

```

Association

```

public void addSlipToDock(Slip aSlip)
{
    slips.addElement(aSlip);
    aSlip.setDock(this);
}

```

Generalization

```

public Vector getSlips()
{ return slips; }

```

Aggregation

```

public void setId(int anId)
{ id = anId; }
public void setLocation(String aLocation)
{ location = aLocation; }
public void setElectricity(boolean anElectricity)
{ electricity = anElectricity; }
public void setWater(boolean aWater)
{ water = aWater; }

public int getId()
{ return id; }
public String getLocation()
{ return location; }
public boolean getElectricity()
{ return electricity; }
public boolean getWater()
{ return water; }
}

```

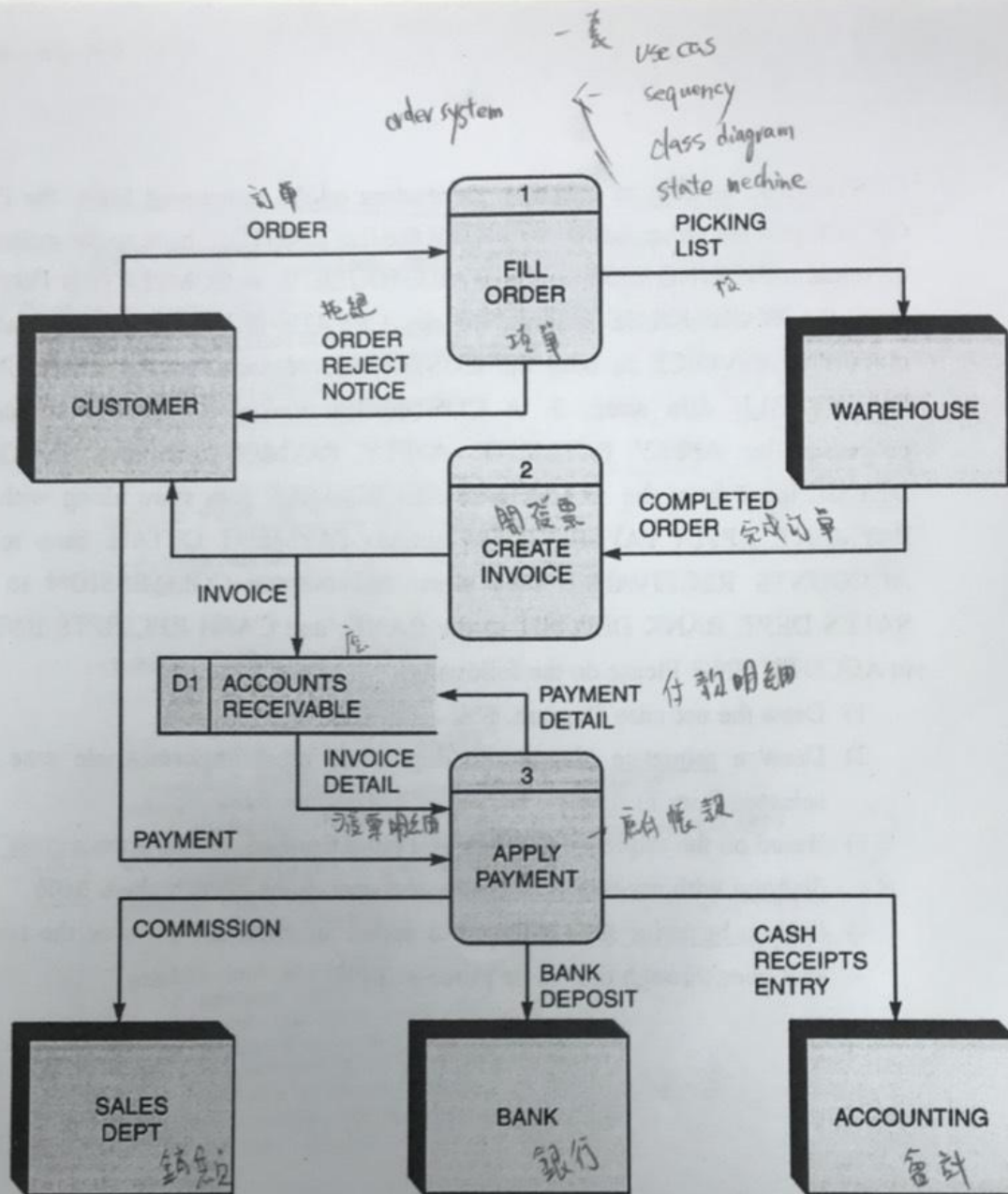
7. To build a sequence diagram, adding messages is to show how they are passed from one object to another. There are a couple of ways to specify message sending, please identify the message type and draw the corresponding diagram based on the following description.
- 1) With this option, the client sends the message to the supplier. If the supplier is not immediately ready to accept the message, the client abandons the message. 4% 傳遞方式 + 立即圖
 - 2) Using this option, the client sends the message to the supplier and waits for 6 seconds. If the supplier isn't ready to receive the message in that time, the client abandons the message. 4%
 - 3) With this option, the client sends the message to the supplier. The client then continues processing, without waiting to see if the message was received or not. 4%
8. The following walkthrough explains the DFD shown in the following Figure. 1. A

A CUSTOMER submits an ORDER. Depending on the processing logic, the FILL ORDER process either sends an ORDER REJECT NOTICE back to the customer or sends a PICKING LIST to the WAREHOUSE. 2. A COMPLETED ORDER from the WAREHOUSE is input to the CREATE INVOICE process, which outputs an INVOICE to both the CUSTOMER process and the ACCOUNTS RECEIVABLE data store. 3. A CUSTOMER makes a PAYMENT that is processed by APPLY PAYMENT. APPLY PAYMENT requires INVOICE DETAIL input from the ACCOUNTS RECEIVABLE data store along with the PAYMENT. APPLY PAYMENT also outputs PAYMENT DETAIL back to the ACCOUNTS RECEIVABLE data store and outputs COMMISSION to the SALES DEPT, BANK DEPOSIT to the BANK, and CASH RECEIPTS ENTRY to ACCOUNTING. Please do the following:

- 1) Draw the use case diagram. 5%
- 2) Draw a sequence diagram to depict the most important use case you selected from 1). 15%
- 3) Based on the sequence diagram you have finished, please draw a class diagram with necessary attributes and operations in each class. 10%
- 4) Draw a behavior state machine to depict an important class or the system as it goes through the whole process. 10%

客送 order

fill order 中 檢查客戶信用



客 → 单 →

ATM

