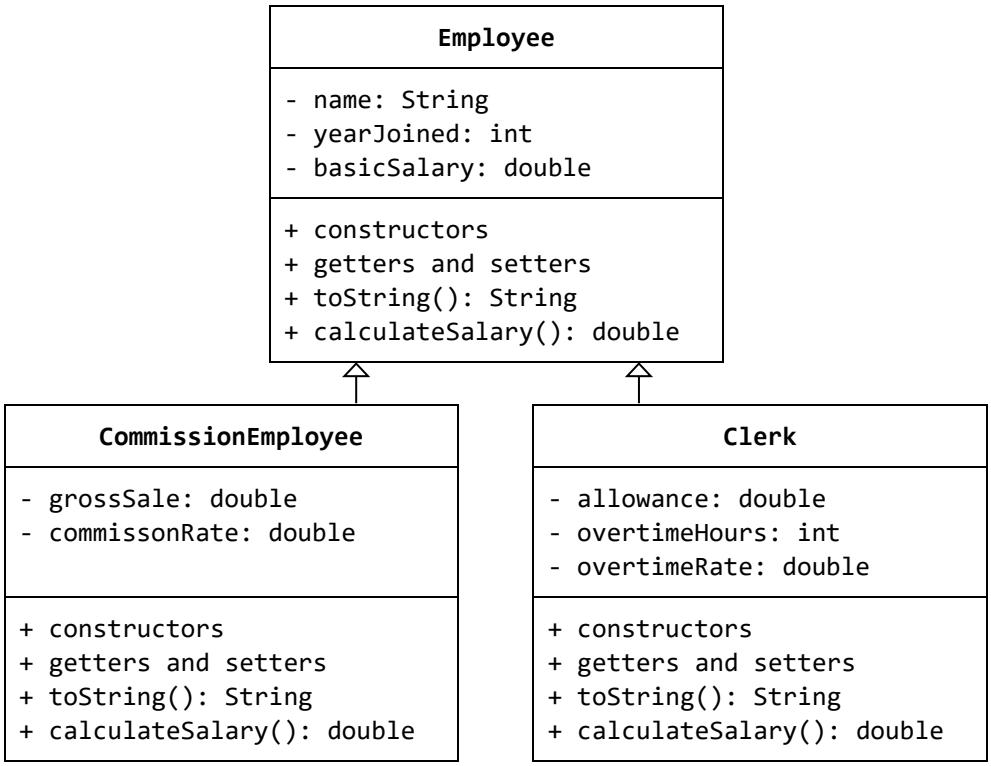
BACS2023 Object-Oriented Programming
Practical #6B

Question 1

Consider the diagram given below:



A. Implement all the classes. The formula for calculating salary for each class is shown below:

- For the **CommissionEmployee** class,

```
salary = basic salary + gross sale * commission rate
```

- For the **Clerk** class,

```
salary = basic salary + allowance + overtime pay
```

where `overtime pay = overtime hours x overtime rate`

B. Write a client program that creates an array named **empArray** that stores an object of an **Employee**, a **CommissionEmployee** and a **Clerk**. In your program, include a method called **printElements()** that takes an array as parameter and prints the type of employee, the object's data field values (by invoking the **toString()** method) and the monthly salary.

C. Override the Object class's **equals** method in the **Employee**, **CommissionEmployee** and **Clerk** classes. For each class, assume that two objects are considered equal if they have the *same name*. Test the **equals** method on all derived types of **Employee**.

Question 2

A sample class implementation is provided in below:

```
public class TestSmartPhone {
    final static double CHARGE = 300;

    public static void main(String[] args) {
       double price = 3200.00;
       string brand = "Huawei";

       double monthlyInstalment = getMonthlyInstalment(2);

       System.out.printf("Monthly instalment: RM" + monthlyInstalment);
     }

    public static double getMonthlyInstalment (int month) {
       return (price+CHARGE)/month;
    }
}
```

Re-design the above program by using an object-oriented (OO) way.