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Daffodil International University

Department of Computer Science and Engineering

Faculty of Science and Information Technology

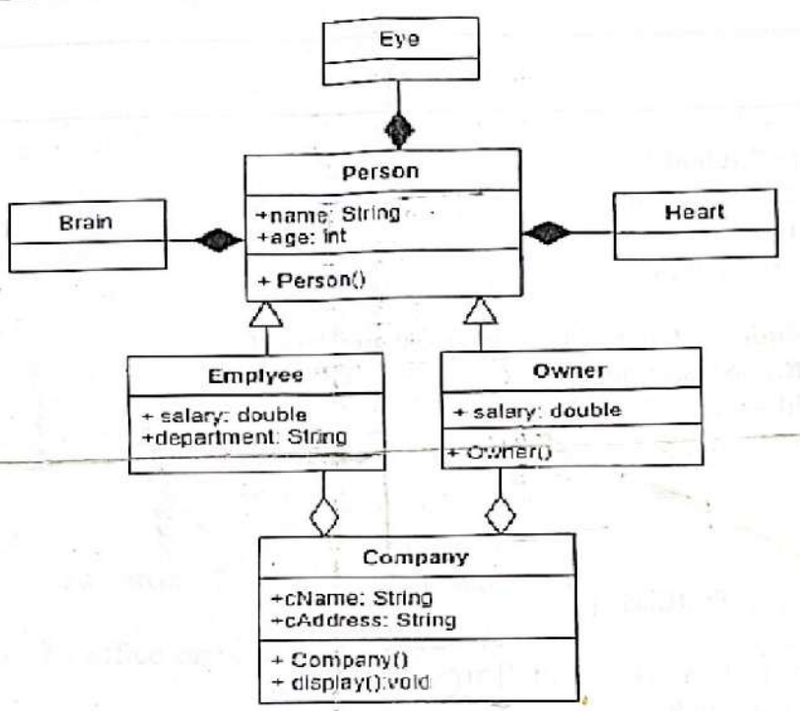
Midterm Examination Semester: Spring 2022

Course Code: CSE221/214 (DAY) Course Title: Object Oriented Programming

Level: 2 Term: 1 Section: ALL

Time: 1.5 hrs. **Full Marks: 25**

Question: 1 **[Marks: 5]**



a. Identify the **Variables, Classes, Methods** and **Constructors** from the above UML Diagram. **[2.5]**

b. Also identify what types of **relationships** are present between classes. **[2.5]**

Question: 2 **[Marks: 5]**

a. Rahim has written the code like below. But it is showing compile time error. Can you identify what mistake he has done? **[2.5]**

```
public class Aa{
  //Class Aa Members
}

public class Bb{
  //Class Bb Members
}

public class Cc extends Aa, Bb{
  //Class Cc Members
}
```


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b. What do you mean by the concept of polymorphism in OOP? [2.5]

Question: 3 **[Marks: 5]**

a. Last week, **you** and **your father** had gone to the Ekushey Boi Mela 2022. In the fair, you met your **uncle** and his **two sons**. After buying some books you planned to visit your **grandfather** who lives in Mirpur. [2.5]

Suppose, your name is X, you father's name is Y, and your grandfather's name is Z. Your uncle's name is U and his sons' names are C1 and C2.

Now, draw a UML and show the relationship. What types of inheritance it refers?

b. What is the difference between **Aggregation** and **Composition**? [2.5]

Question: 4 **[Marks: 10]**

[10]

```
public class Student {
   private String sName;
   private int sId;
   private String dept;

   public Student(String sName, int sId, String dept) {
      this.sName = sName;
      this.sId = sId;
      this.dept = dept;
   }
}

public class MyTestClass {

   public static void main(String[] args) {
      Student st = new Student();
      System.out.println("Name: "+st.sName);
      System.out.println("ID: "+sId);
      System.out.println("Department: "+st.dept);
   }
}
```

Consider the above two classes named "Student" and "MyTestClass". The following output is expected from the given java program. Your task is to rewrite the code with necessary changes to find out the solution for the expected outputs **without changing the access modifier of the attributes** used in "Student" class.

Expected Output:

Name: Akash
ID: 130
Department: CSE

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