PG DAC–March 2023
C-DAC THIRUVANANTHAPURAM
JAVA- LAB 7

Q1) Create a class Exam with 1 method attend Exam() that displays a message exam attended.
Create a class Theory Exam extending Exam class with 1 method attend Exam() that displays a message Theory exam attended.
Create a class Theory And Lab Exam extending Theory Exam class with 1 method attend Exam() that displays a message Theory and Lab exams attended.
Create an object of Theory Exam class from main() and invoke the attend Exam() method.
Create an object of Theory And Lab Exam class from main() and invoke the attend Exam() method. @Override

Exam.java × | TheoryExam.java | TheoryAndLabExam.java | Main.java

```java
package com.javassignment71.main;

class Exam {
    public void attendExam() {
        System.out.println("Exam attended.");
    }
}

```

Exam.java | TheoryExam.java × | TheoryAndLabExam.java | Main.java

```java
package com.javassignment71.main;

class TheoryExam extends Exam {
    @Override
    public void attendExam() {
        System.out.println("Theory exam attended.");
    }
}

```

Exam.java | TheoryExam.java | TheoryAndLabExam.java | Main.java

```java
package com.javassignment71.main;

class TheoryAndLabExam extends TheoryExam {
    @Override
    public void attendExam() {
        System.out.println("Theory and Lab exams attended.");
    }
}

```

Exam.java | TheoryExam.java | TheoryAndLabExam.java | Main.java

```java
package com.javassignment71.main;

public class Main {
    public static void main(String[] args) {
        TheoryExam theoryExam = new TheoryExam();
        theoryExam.attendExam();

        TheoryAndLabExam theoryAndLabExam = new TheoryAndLabExam();
        theoryAndLabExam.attendExam();
    }
}

```

Console

```
<terminated> Main [Java Application] D:\Eclipse\eclipse\plug
Theory exam attended.
Theory and Lab exams attended.
```

Q2) Create an abstract class 'Bank' with an abstract method 'get Balance'.
Create 3 classes Bank A, Bank B and Bank C each of which is a subclasses of class Bank class, each having a method named 'get Balance'.
Call this method by creating an object of each of the three classes.

Bank.java | BankA.java | BankB.java | BankC.java | BankMain.java

```java
package com.javassignment72.main;

public abstract class Bank {

    public abstract void getbalance(); {
        }

}

```

Bank.java | BankA.java × | BankB.java | BankC.java | BankMain.java

```java
package com.javassignment72.main;

public class BankA extends Bank {
    @Override
    public void getbalance() {

    System.out.println("Balance of A is 15000");
}
    }

```

Bank.java | BankA.java | BankB.java × | BankC.java | BankMain.java

```java
package com.javassignment72.main;

public class BankB extends BankA {
    @Override
    public void getbalance() {

    System.out.println("Balance of B is 20000");
}
    }

```

Bank.java | BankA.java | BankB.java | BankC.java × | BankMain.java

```java
package com.javassignment72.main;

public class BankC extends Bank {

    @Override
    public void getbalance() {

        System.out.println("Balance of C is 25000");
    }
        }

```

Bank.java | BankA.java | BankB.java | BankC.java | *BankMain.java

```
1  package com.javassignment72.main;
2
3  public class BankMain {
4
5      public static void main(String[] args) {
6
7          Bank a = new BankA();
8          a.getbalance();
9          a= new BankB();
10         a.getbalance();
11         a= new BankC();
12         a.getbalance();
13     }
14 }
15
```

Console

```
<terminated> BankMain [Java Application] D:\E
Balance of A is 15000
Balance of B is 20000
Balance of C is 25000
```

Q3) Repeat Q3 by creating objects of Theory Exam class and Theory And Lab Exam class and assign to Exam reference variable and invoke the attend Exam() method.

ExamAbst.java | Exam.java | TheoryExam.java | TheoryAndLabExam.java | ExamMain.java

```
1  package com.javassignment73.main;
2
3  public abstract class ExamAbst {
4
5      public abstract void examattended(); {
6      }
7
8  }
9
```

ExamAbst.java | Exam.java | TheoryExam.java | TheoryAndLabExam.java | ExamMain.java

```
1  package com.javassignment73.main;
2
3  public class Exam extends ExamAbst {
4      @Override
5      public void examattended() {
6
7          System.out.println("Exam attended");
8  }
9      }
```

ExamAbst.java | Exam.java | TheoryExam.java | TheoryAndLabExam.java | ExamMain.java

```java
package com.javassignment73.main;

public class TheoryExam extends Exam{
    @Override
    public void examattended() {

    System.out.println("Theory Exam attended");
}

}
```

ExamAbst.java | Exam.java | TheoryExam.java | TheoryAndLabExam.java | ExamMain.java

```java
package com.javassignment73.main;

 public class TheoryAndLabExam extends ExamAbst {
    @Override
       public void examattended() {

            System.out.println("Theory and Lab Exam attended");
       }
            }
```

ExamAbst.java | Exam.java | TheoryExam.java | TheoryAndLabExam.java | ExamMain.java

```java
package com.javassignment73.main;

public class ExamMain {
    public static void main(String[] args) {

        Exam ref = new Exam();
        ref.examattended();
        TheoryExam ref1 = new TheoryExam();
        ref1.examattended();
        TheoryAndLabExam ref2 = new TheoryAndLabExam();
        ref2.examattended();
    }
}
```

Console

<terminated> ExamMain [Java Application] D:\Eclipse\eclips

```
Exam attended
Theory Exam attended
Theory and Lab Exam attended
```