## CDAC Mumbai PG-DAC August 24

## **Assignment No-5**

Create a base class BankAccount with methods like deposit() and withdraw(). Derive a class SavingsAccount that overrides the withdraw() method to impose a limit on the withdrawal amount. Write a program that demonstrates the use of overridden methods and proper access modifiers & return the details.

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                                                                                                    public void Withdra < terminated > Solution (1) [Java Application] C\Program
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Loan_Calculator
                                                                       112 }
                                                                       113 public class Solution {
                                                                                                    public static void main(String[] args) {
     RetailCalculator
                                                                                                                  //BankAccount ba = new BankAccount();
SavingsAccount sa = new SavingsAccount();
     staticblocks
     tollManagement
                                                                                                                   sa.setName("Parthavi Chavan");
                                                                                                                   sa.setPhoneNo(1234569);
                                                                                                                   sa.setMoney(56983.65f);
                                                                                                                   sa.setMoneyPresent(20000);
                                                                                                                    sa.setMoneyWithdrawn(3000);
                                                                                                                   sa.withdraw();
                                                                       127 }
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Create a base class Vehicle with attributes like make and year. Provide a constructor in Vehicle to initialize these attributes. Derive a class Car that has an additional attribute model and write a constructor that initializes make, year, and model. Write a program to create a Car object and display its details.

```
public Vehicle(String make , int year) {
               this.make = make;
               this.year = year;
              public String getMake() {
               return make;
              public int getYear() {
               return year;
              public void setMake(String make) {
               this.make = make;
              public void setYear(int year) {
               this.year = year;
}
class Car extends Vehicle{
              String model;
              public Car() {
              public Car(String make, int year, String model) {
               super(make, year);
               this.model = model;
              public String getModel() {
               return model;
              public void setModel(String model) {
               this.model = model;
              public void printrec() {
```

```
System.out.println("Make :" + this.getMake());
                                                             System.out.println("Year:" + this.getYear());
                                                             System.out.println("Model :" + this.getModel());
}
public class Solution {
                                                      public static void main(String[] args) {
                                                             Car c = new Car("Toyota", 2018, "Nexon");
                                                             c.printrec();
}
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                                                                                                                                                         Make :Toyota
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                                                              600
                                                                                     public String getMod Year :2018
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     cdac day7
                                                                                                  return model;
                                                                                                                                                       Model : Nexon
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                                                                                    public void setModel
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■ JRE System Library [Ja
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                                                                                                   this.model = mod
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                                                                                    public void printrec()
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                                                                                                  System.out.println("Make :" + this.getMake());
System.out.println("Year :" + this.getYear());
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     RetailCalculator
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                                                                                                  System.out.println("Model :" + this.getModel());
                                                               74
75
                                                              76 }
                                                               78 public class Solution {
                                                                                     public static void main(String[] args) {
                                                                                                  Car c = new Car("Toyota", 2018 , "Nexon");
                                                                                                  c.printrec();
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                                                             85 }
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```

Create a base class Animal with attributes like name, and methods like eat() and sleep(). Create a subclass Dog that inherits from Animal and has an additional method bark(). Write a program to demonstrate the use of inheritance by creating objects of Animal and Dog and calling their methods.

package in.example3.assgn5;

```
class Animal {
         String name;
        public Animal() {
             this.name = " ";
        }
        public Animal(String name) {
```

```
this.name = name;
        }
        public void eat() {
               System.out.println( this.name + " is eating ");
        public void sleep() {
               System.out.println(this.name + "is sleeping");
        }
class Dog extends Animal{
       public Dog(String name) {
               this.name = name;
       public void bark() {
               super.eat();
               super.sleep();
               System.out.println(this.name + " is barking");
        }
public class Solution {
       public static void main(String[] args) {
               Animal a = new Animal("DOG");
               Dog d = new Dog("DOG");
               a.eat();
               a.sleep();
               d.bark();
}
```

```
parthavi-eclipse-workspace - InheritanceAssignment5/src/in/example3/assgn5/Solution.java - Eclipse IDE
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                           24
                                                                     DOG is eating
  Assignment4

Assignment6

Association

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                                     public void sleep() DOGis sleeping
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                                         System.out.print
  Classworkday10
                           28 }
  Fibonaaciseries
                           29
  Inheritance
                            30 class Dog extends Animal
    ■ JRE System Library [JavaSE-20]
                            31
                                     public void bark() {
                                         super.eat();
    > # in.example2.assgn5

> # in.example3.assgn5
                            33
                            34
                                            super.sleep();

    D package-info.java
    Solution.java

                                            System.out.println(this.name + " is barking");

    Solution.java
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    RetailCalculator

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                                     }
                            38 }
                           39 public class Solution {
  staticblocks
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Q Animal

A name: String

of Animal()

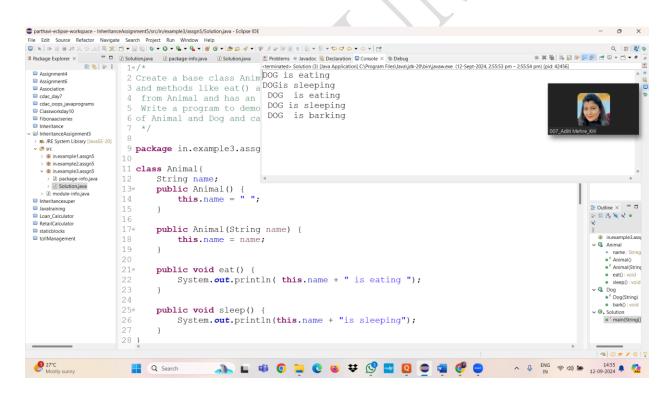
of Animal(String)
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                                      public static void main(String[] args) {
                                            Animal a = new Animal("DOG");
Dog d = new Dog();
                           43
                                                                                                                                                                          eat(): void
                                            a.eat();
                            44
                                            a.sleep();
                                                                                                                                                                      ● sleep(): void

✓ ② Dog

● bark(): void

✓ ፡ P Solution

Ø * main(String[]
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```



Build a class Student which contains details about the Student and compile and run its instance.

```
Build a class Student which contains details about the
Student and compile and run its
instance.
*/
package in.example4.assgn5;
class Student{
        String name;
        int prn;
       int age;
        static String insitute = "CDAC MUMBAI";
        public Student() {
        }
        public Student(String name, int prn, int age , String institute) {
                this.name = name;
                this.prn = prn;
                this.age = age;
        }
        public String getName() {
                return name;
        public void setName(String name) {
                this.name = name;
        public int getPrn() {
                return prn;
        public void setPrn(int prn) {
                this.prn = prn;
        }
        public int getAge() {
                return age;
        public void setAge(int age) {
```

```
this.age = age;
                             }
                            public void printrec() {
                                                        System.out.println("name: " + this.getName());
                                                        System.out.println("age: " + this.getAge());
                                                        System.out.println("prn : " + this.getPrn());
                                                        System.out.println("institute: " + this.insitute);
                             }
public class Solution {
                            public static void main(String[] args) {
                                                        Student st = new Student();
                                                        st.setName("Chita");
                                                        st.setAge(26);
                                                        st.setPrn(1236);
                                                        st.printrec();
                             }
 }
□ □ Solution java ×
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                                                                             cterminated> Solution (4) [Java Application] C\Program Files\Java\j
public void setAge (i name : Chita
    Assignment4
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Association
cdac_day7
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                                                                                          this.age = age; age : 26
                                                                                                                                            prn : 1236
                                                                                                                                             institute : CDAC MUMBAI
     cdac_oops_javap
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                                                         49=
                                                                              public void printrec
                                                                                          System.out.print
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                                                         56
                                                         57 1
                                                         58 public class Solution {
                                                                              public static void main(String[] args) {
    RetailCalculator
    staticblocks tollManagement
                                                                                          Student st = new Student();
st.setName("Chita");
                                                                                          st.setAge(26);
                                                                                          st.setPrn(1236);
                                                                                          st.printrec();
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Write a Java program to create a base class Vehicle with methods startEngine() and stopEngine(). Create two subclasses Car and Motorcycle. Override the startEngine() and stopEngine() methods in each subclass to start and stop the engines differently.

```
/*
Write a Java program to create a base class Vehicle
with methods startEngine() and stopEngine().
Create two subclasses Car and Motorcycle. Override the startEngine()
and stopEngine() methods in each subclass to start and
stop the engines differently.
package in.example5.assgn5;
class Vehicle{
        public void startEngine() {
                System.out.println(" engine is starting");
        public void stopEngine() {
                System.out.println(" engine has stopped ");
        }
}
class Car extends Vehicle{
        @Override
        public void startEngine() {
                System.out.println(" engine is starting in car");
        @Override
        public void stopEngine() {
                System.out.println(" engine has stopped in car ");
}
class Motorcycle extends Vehicle{
        @Override
        public void startEngine() {
                System.out.println(" engine is starting in motorcycle");
        }
        @Override
        public void stopEngine() {
                System.out.println(" engine has stopped in motorcycle ");
        }
```

```
public class Solution {
                              public static void main(String[] args) {
                                                              Vehicle vh = new Car();
                                                             vh.startEngine();
                                                             vh.stopEngine();
                                                             vh = new Motorcycle();
                                                             vh.startEngine();
                                                             vh.stopEngine();
                               }

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    Assignment4
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                                                                                                                                                       engine has stopped in car
                                                                                   @Override
                                                                                    public void startEng engine is starting in motorcycle
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INE System Library [Java
                                                                                                  System.out.print engine has stopped in motorcycle
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                                                                                    @Override
                                                                                    public void stopEngi
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           > # in.example1.assgn5
                                                               42
                                                                                                  System.out.print
          > # in.example1.assgn5
> # in.example2.assgn5
> # in.example3.assgn5
> # in.example4.assgn5
> # package-info.java
> # Solution.java
> # in.example5.assgn5
                                                               43
                                                               44
                                                               45 }
                                                               46 public class Solution {

    package-info.java
    Solution.java

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                                                                                     public static void main(String[] args) {
    > Osolutionjava
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Loan_Calculator
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toliManagement
                                                                                                  Vehicle vh = new Car();

√ Q Vehicle

                                                                                                  vh.startEngine();

    Vehicle
    startEngine()
    stopEngine()
    Car
    startEngine()
    stopEngine()

                                                                                                  vh.stopEngine();
                                                                                                  vh = new Motorcycle();
                                                                                                  vh.startEngine();
                                                              55
                                                                                                  vh.stopEngine();
                                                                                                                                                                                                                                                                                                                                                                                    @ Motorcycle
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