**package** com.cdac;

/\*1) 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

\*/

**public** **class** BankAccount {

**private** String name;

**private** **float** balance;

**private** String accountNo;

**public** BankAccount() {

**this**.name="komal";

**this**.balance=balance;

**this**.accountNo="123989";

}

**void** deposit(**int** amount)

{

**if**(amount>0) {

**this**.balance=**this**.balance+amount;

System.***out***.println("deposited amount is:" +amount);

}**else** {

System.***out***.println("Enter the positive amount");

}

}

**void** withdraw(**int** amount) {

**if**(amount>0 && amount<= **this**.balance) {

**this**.balance = **this**.balance-amount;

System.***out***.println("amount withdraw is" +amount);

}**else**

System.***out***.println("you can not withdraw the amount");

}

**void** displaydetails() {

System.***out***.println("name is:- "+name);

System.***out***.println("account no is:- "+accountNo);

System.***out***.println("balance is:- "+ **this**.balance);

}

**public** String getName() {

**return** name;

}

**public** **float** getBalance() {

**return** balance;

}

**public** String getAccountNo() {

**return** accountNo;

}

}

**package** com.cdac;

**public** **class** Main {

**public** **static** **void** main(String[] args) {

// BankAccount ba=new BankAccount();

System.***out***.println();

SavingAccount sa=**new** SavingAccount();

sa.deposit(100000);

sa.withdraw(5000);

sa.displaydetails();

sa.withdraw(6000);

sa.displaydetails();

}

}

**package** com.cdac;

**public** **class** SavingAccount **extends** BankAccount {

**private** **static** **final** **double** ***WITHDRAWAL\_LIMIT*** = 5000.00;

@Override

**void** withdraw(**int** amount) {

**float** balance = getBalance();

**if**(amount>0 && amount<=***WITHDRAWAL\_LIMIT*** && amount < balance ) {

System.***out***.println("pirnt heres");

**super**.withdraw(amount);

}**else** **if**(amount>***WITHDRAWAL\_LIMIT***) {

System.***out***.println("Entered amount exceeds withdrawal linit");

}**else** {

System.***out***.println("enter the invalid amount:");

}

}

**void** displaydetails() {

**super**.displaydetails();

}

**package** com.cdac;

**public** **class** Vehicle {

/\*2) 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.

\*/

String make;

**int** year;

**public** Vehicle() {

**this**.make=make;

**this**.year=year;

}

**public** Vehicle(String make,**int** year) {

**this**.make=make;

**this**.year=year;

}

**void** display() {

System.***out***.println("Make : " +make);

System.***out***.println("Year : " +year);

}

}

**ackage** com.cdac;

**public** **class** Car **extends** Vehicle{

String model;

**public** Car(String make,**int** year,String model) {

**super**(make,year);

**this**.model=model;

}

**void** display() {

**super**.display();

System.***out***.println("Model : "+model);

}

}

**package** com.cdac;

**public** **class** Program {

**public** **static** **void** main(String[] args) {

Car car=**new** Car("Skoda",1995,"kushaq");

car.display();

}

}

**package** com.cdac;

/\*3) 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.

\*/

**public** **class** Animal {

String name;

**public** Animal(String name) {

**this**.name=name;

}

**void** eat() {

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

}

**void** sleep() {

System.***out***.println("is sleep");

}

}

**package** com.cdac;

**public** **class** Dog **extends** Animal {

**public** Dog(String name) {

**super**(name);

}

**void** bark()

{

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

}

}

**package** com.cdac;

**public** **class** Program {

**public** **static** **void** main(String[] args) {

Animal animal=**new** Animal("all animal");

animal.eat();

animal.sleep();

Dog dog=**new** Dog("puppy");

dog.bark();

dog.eat();

dog.sleep();

}

}

**package** com.cdac;

/\*4) Build a class Student which contains details about the Student and compile and run its

instance.

\*/

**public** **class** Student {

String name;

**int** age;

**int** studentId;

**public** Student(String name,**int** age,**int** studentId) {

**this**.name=name;

**this**.age=age;

**this**.studentId=studentId;

}

**void** display() {

System.***out***.println("Name :" +**this**.name);

System.***out***.println("age :" +**this**.age);

System.***out***.println("StudentId :" +**this**.studentId);

}

}

**package** com.cdac;

**public** **class** Program {

**public** **static** **void** main(String[] args) {

Student student=**new** Student("komal",27,12345);

student.display();

}

}

**package** com.cdac;

/\*5) 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.

\*/

**public** **class** Vehicle {

**void** startEngine()

{

System.***out***.println("engine starts");

}

**void** stopEngine() {

System.***out***.println("engine stops");

}

}

**package** com.cdac;

**public** **class** Program {

**public** **static** **void** main(String[] args) {

Car car=**new** Car();

car.startEngine();

car.stopEngine();

MotorCycle motorCycle=**new** MotorCycle();

motorCycle.startEngine();

motorCycle.stopEngine();

}

}

**package** com.cdac;

**public** **class** MotorCycle **extends** Vehicle{

**void** startEngine()

{

System.***out***.println("motorcycle engine starts");

}

**void** stopEngine() {

System.***out***.println("motorcycle engine stops");

}

}

**package** com.cdac;

**public** **class** Car **extends** Vehicle {

**void** startEngine()

{

System.***out***.println("car engine starts");

}

**void** stopEngine() {

System.***out***.println("car engine stops");

}

}