Customer Products:

Data Hiding:

- Classes: Customer, Product.
- Product: get details, set Customer Name (Methods)
  - Product id, product name, price (Private variables) pass the values from product constructor.
- Customer: print the details of the product, set customer name.

Super class:

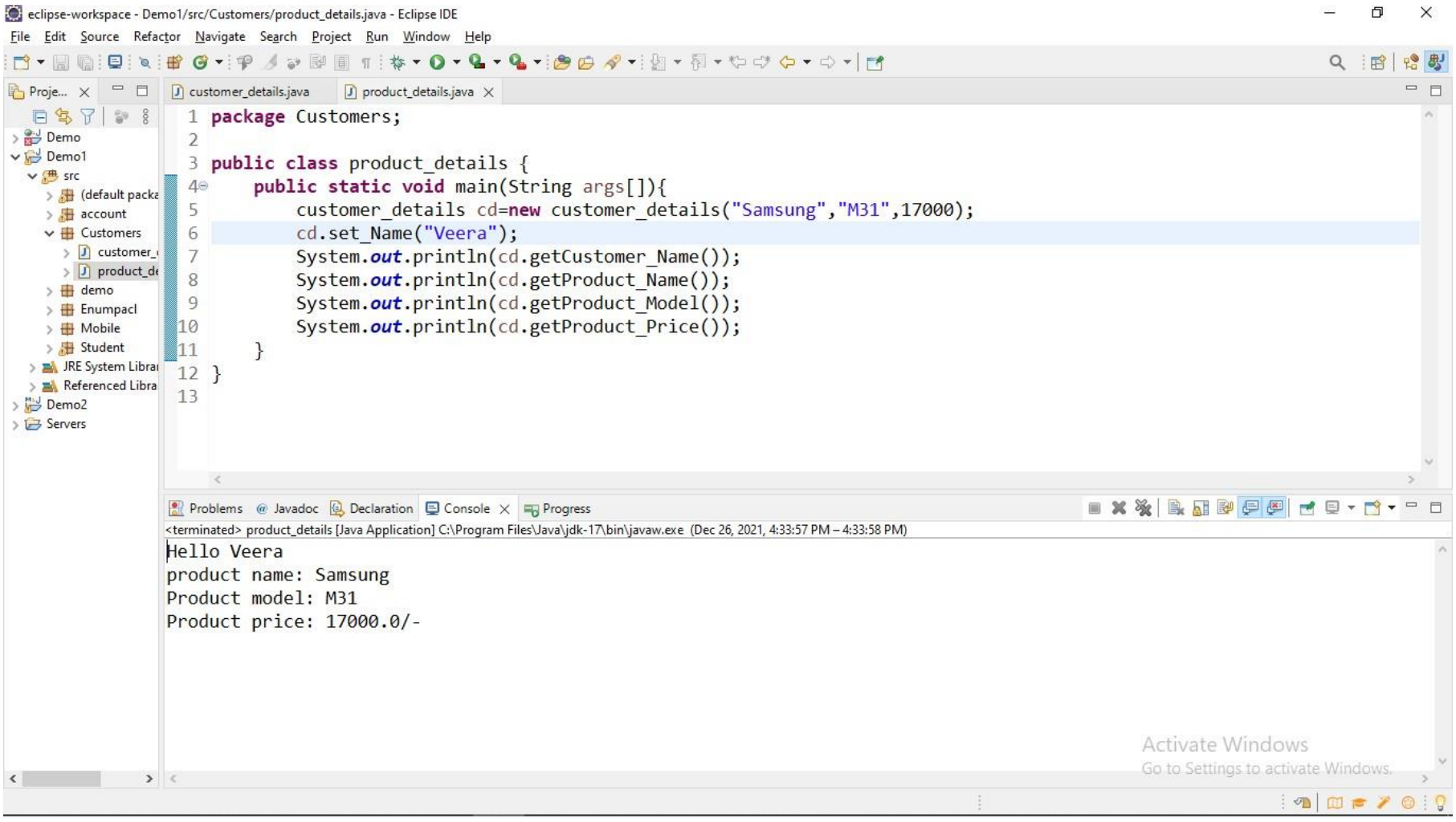
```
package Customers;

public class customer_details {

    customer_details(String product_Name, String product_Model, double
product_Price){
        this.product_Name=product_Name;
        this.product_Model=product_Model;
        this.product_Price=product_Price;
    }
    private String customer_Name;
    private String product_Name;
    private String product_Model;
    private double product_Price;

    public void set_Name(String name){
        customer_Name=name;
    }
    public String getCustomer_Name(){
        if(customer_Name!=null){
            return "Hello "+customer_Name;
        }
        return "Please set your name before getting name use 'set_Name
method'";
    }
    public String getProduct_Model(){
        return "Product model: "+product_Model;
    }
    public String getProduct_Price(){
        return "Product price: "+product_Price+"/-";
    }
    public String getProduct_Name(){
            return "product name: "+product_Name;
    }
}
```

Child class (Main method):

```
package Customers;

public class product_details {
```

```
public static void main(String args[]){
    customer_details cd=new customer_details("Samsung","M31",17000);
    cd.set_Name("Veera");
    System.out.println(cd.getCustomer_Name());
    System.out.println(cd.getProduct_Name());
    System.out.println(cd.getProduct_Model());
    System.out.println(cd.getProduct_Price());        }   }
```

Output:



Mobile:

Interfaces and inheritance:

- Class: Mobile, smart phone (sub class).
- Interfaces: music Player, Applications.
- Mobile: call, sms (Methods).
- Music player: select music, stop music, pause music (Methods).
- Applications: install (method).

Super class:

```
package Mobile;

public class mobile {
    mobile(){System.out.println("From Mobile... ");}
    public void call() {System.out.println("u can call from mobile... ");}
    public void games() {System.out.println("U can play small games..");}
    public void sms() {System.out.println("U can send and recevice
meassages...");}

}
```

Child interface:

```
package Mobile;
    public interface Music_player {

        void select_song();
        void next_song();
        void previous_song();
        void forward_song();
}
```

Child interface:

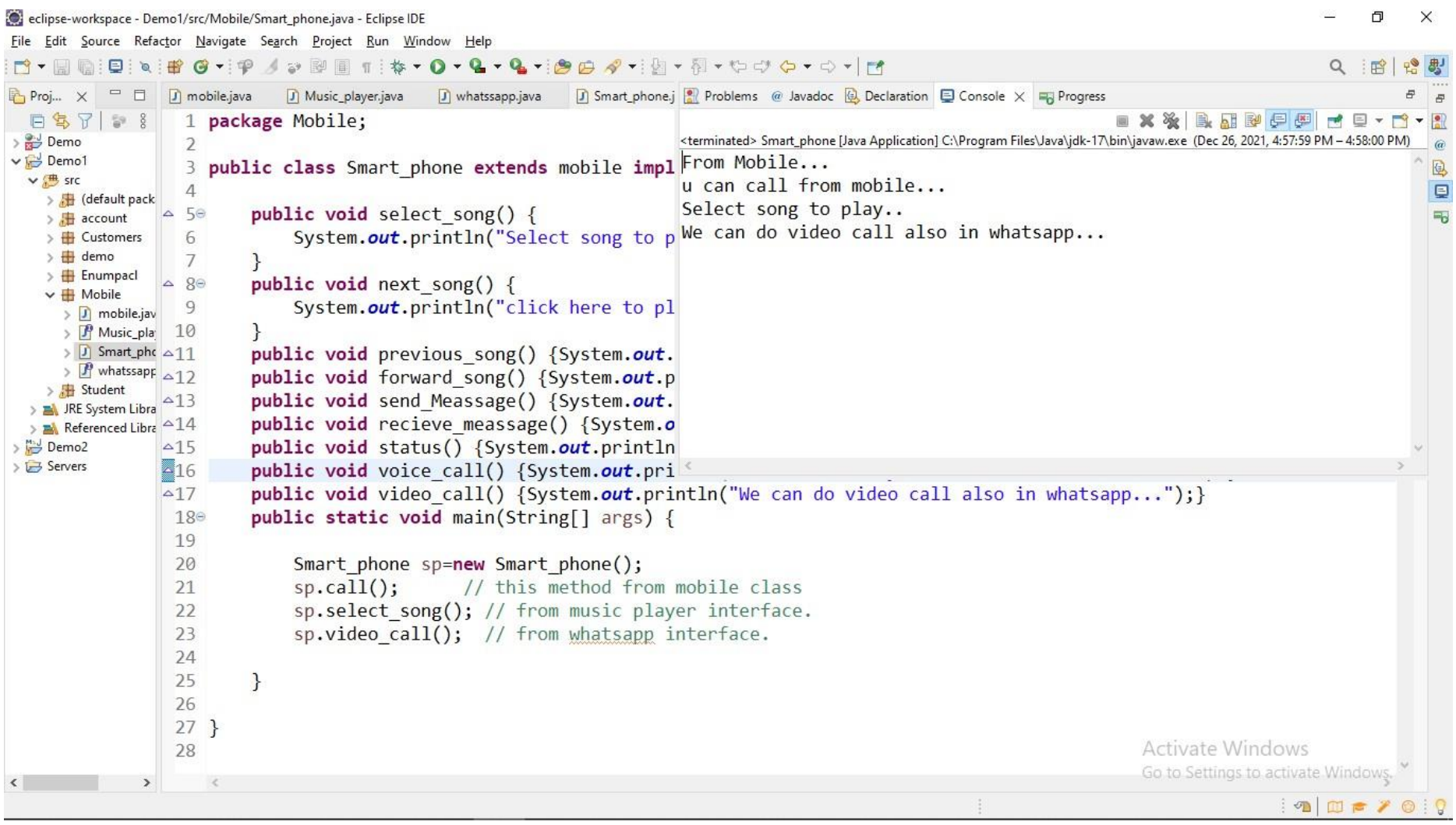
```
package Mobile;

        public interface whatssapp {

            void send_Meassage();
            void recieve_meassage();
            void status();
            void voice_call();
            void video_call();
    }
```

Child class (Main class):

```
package Mobile;

public class Smart_phone extends mobile implements Music_player,whatssapp {

    public void select_song() {
        System.out.println("Select song to play..");
    }
    public void next_song() {
        System.out.println("click here to play next song...");
    }
```

```
    public void previous_song() {System.out.println("Click here to previous song...");}
    public void forward_song() {System.out.println("click to forward song...");}
    public void send_Meassage() {System.out.println("Send meassage from whatssapp");}
    public void recieve_meassage() {System.out.println("Recieve meassage from whatsapp");}
    public void status() {System.out.println("we keep status and we see others status also");}
    public void voice_call() {System.out.println("We can call any one who r in our contacts..");}
    public void video_call() {System.out.println("We can do video call also in whatsapp...");}
    public static void main(String[] args) {

        Smart_phone sp=new Smart_phone();
        sp.call();      // this method from mobile class
        sp.select_song(); // from music player interface.
        sp.video_call();  // from whatsapp interface.

    }

}
```

Output:



Account:

Inheritance:

- Super class: Account; Sub class : Loan Account , Savings Account
- Account: Account details (Method), Account Number, Ifsc code, Branch name (Variables)
- Loan Account: Loan details (Method), loan amount, monthly emi, interest (variables).
- Savings Account: details (Method), balance, debit card details (Variables).

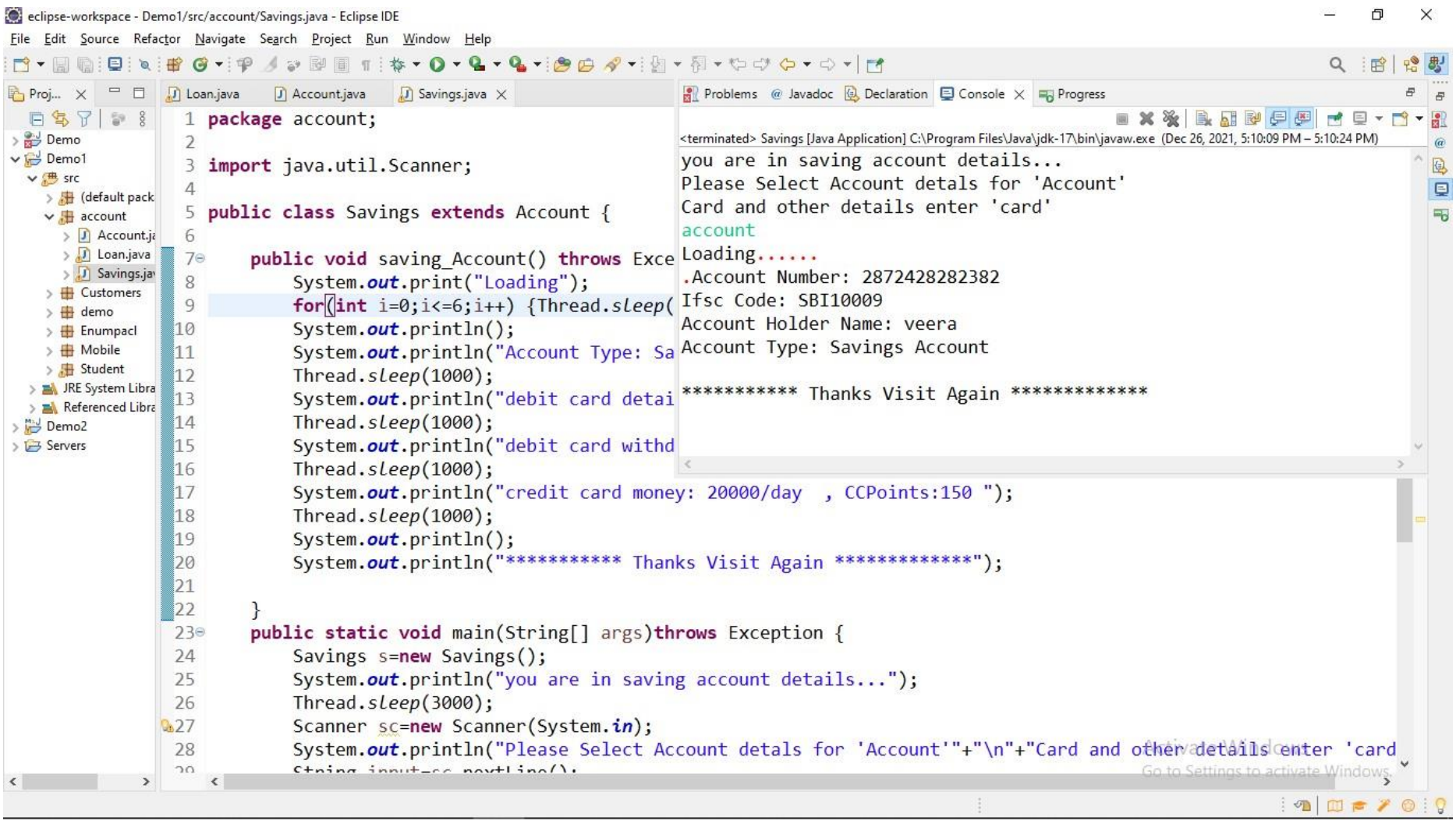
Account class (super class):

```
package account;
public class Account {


public void savings_Account_Details() throws Exception{
    System.out.print("Loading");
    for(int i=0;i<=6;i++) {Thread.sleep(300);System.err.print(".");}
    System.out.println();
    System.out.println("Account Number: 2872428282382");
    Thread.sleep(1000);
    System.out.println("Ifsc Code: SBI10009");
    Thread.sleep(1000);
    System.out.println("Account Holder Name: veera");
    Thread.sleep(1000);
    System.out.println("Account Type: Savings Account");
    Thread.sleep(1000);
    System.out.println();
    System.out.println("********** Thanks Visit Again **********");
}
public void loan_Account_Details() throws Exception{
    System.out.print("Loading");
    for(int i=0;i<=6;i++) {Thread.sleep(300);System.err.print(".");}
    System.out.println();
    System.out.println("Account Number: 8997799821");
    Thread.sleep(1000);
    System.out.println("Ifsc Code: ICICI10009");
    Thread.sleep(1000);
    System.out.println("Account Holder Name: suresh");
    Thread.sleep(1000);
    System.out.println("Account Type: loan Account");
    Thread.sleep(1000);
    System.out.println();
    System.out.println("********** Thanks Visit Again **********");
  }

}
```

Loan class (child class / main class):

```
        package account;

import java.util.Scanner;

public class Loan extends Account {

    public void loan_Details() throws Exception{
        System.out.print("Loading");
        for(int i=0;i<=6;i++) {Thread.sleep(300);System.err.print(".");}
        System.out.println();
        System.out.println("Account Type: loan Account...");
        Thread.sleep(1000);
        System.out.println("Loan amount: 200000/-");
        Thread.sleep(1000);
        System.out.println("Monthly Emi: 20000");
        Thread.sleep(1000);
        System.out.println("Intrest amount: 10000/-");
        Thread.sleep(1000);
        System.out.println();
        System.out.println("********** Thanks Visit Again **********");

    }
    public static void main(String[] args) throws Exception {
        Loan l=new Loan();
        System.out.println("you are in loan account details...");
        Thread.sleep(3000);
        Scanner sc=new Scanner(System.in);
        System.out.println("Please Select Account detals for 'Account'"+"\n"+"
For loan details enter 'loan'");
        String input=sc.nextLine();
        if(input.equalsIgnoreCase("account")) {
            l.loan_Account_Details();
        }
        else if(input.equalsIgnoreCase("loan")) {
            l.loan_Details();
        }
        else {

            System.err.println("Please enter correct input check again. ....");
        }

    }

}
```

Output:

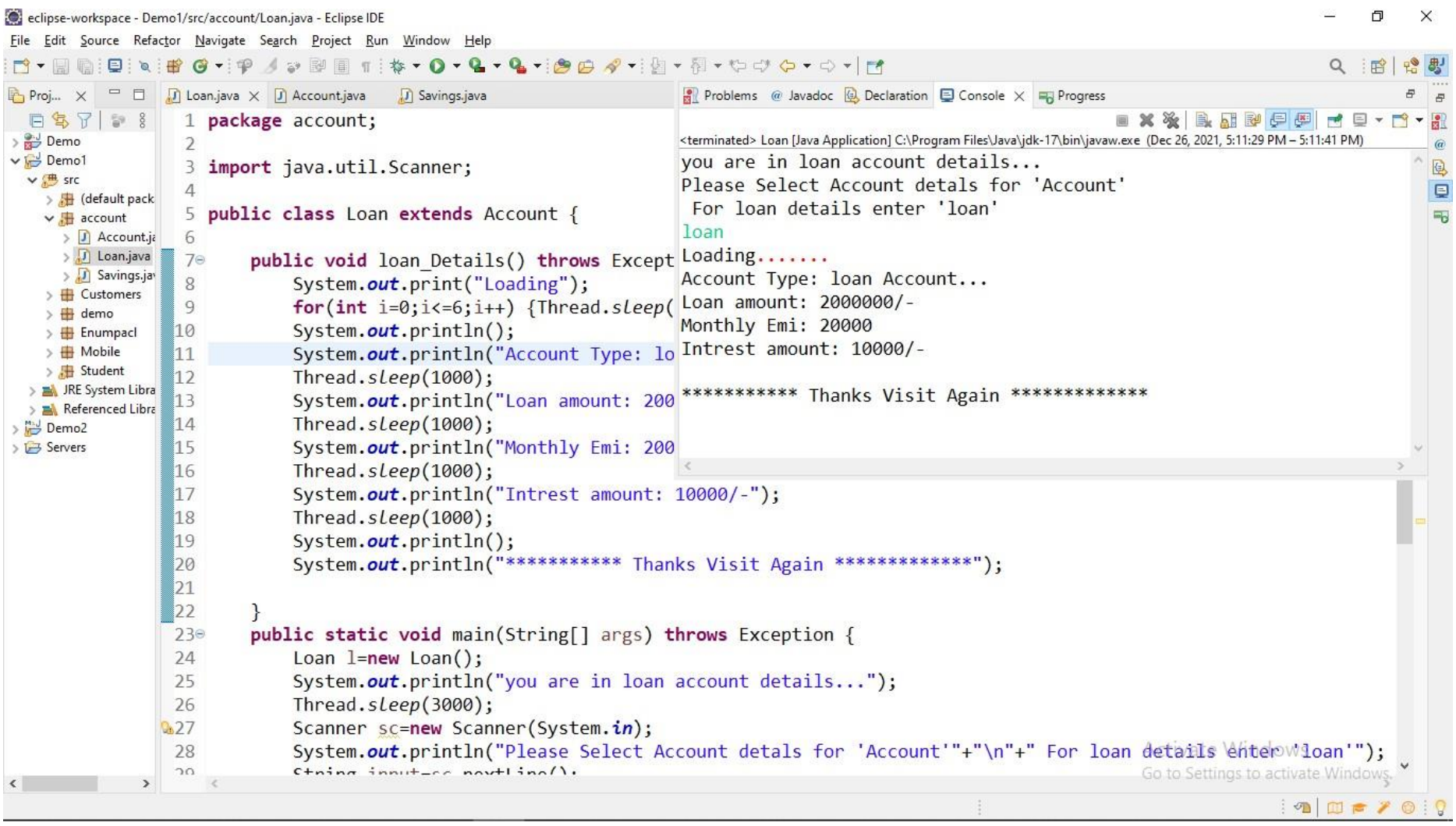


Savings account (child class / main class):

```
        package account;

import java.util.Scanner;

public class Savings extends Account {

    public void saving_Account() throws Exception{
        System.out.print("Loading");
for(int i=0;i<=6;i++) {Thread.sleep(300);System.err.print(".");}
System.out.println();
System.out.println("Account Type: Savings Account");
Thread.sleep(1000);
System.out.println("debit card details: 9992/8292/8299 , *** ");
Thread.sleep(1000);
System.out.println("debit card withdraw: 10000/day");
Thread.sleep(1000);
System.out.println("credit card money: 20000/day  , CCPoints:150 ");
Thread.sleep(1000);
System.out.println();
```

```
            System.out.println("************ Thanks Visit Again *************");

        }
        public static void main(String[] args)throws Exception {
            Savings s=new Savings();
            System.out.println("you are in saving account details...");
            Thread.sleep(3000);
            Scanner sc=new Scanner(System.in);
            System.out.println("Please Select Account detals for
'Account'"+"\n"+"Card and other details enter 'card'");
            String input=sc.nextLine();
            if(input.equalsIgnoreCase("account")) {
                s.savings_Account_Details();
            }
            else if(input.equalsIgnoreCase("card")) {
                s.saving_Account();
            }
            else {
                System.err.println("Please enter correct input check again. ....");
            }

        }

}
```

Output:



Student details:

Encapsulation and Constructors:

- Class: Student, Student details.
- Student: Student id, Student name, Marks (private variables) pass values from student constructor, getters, setters (methods).
- Student details: call get method to get values and set method to set values.

Student details (super class):

```
package Student;

import java.util.Scanner;

public class Student_details {

    private String id;
    private String name;
    private int total_marks=100;
    private int sub1_marks;
    private int sub2_marks;
    private int sub3_marks;
    private String sub1;
    private String sub2;
    private String sub3;

    Student_details(String id,String name,int marks,int marks1,int marks2){
        this.id=id;
        this.name=name;
        sub1_marks=marks;
        sub2_marks=marks1;
        sub3_marks=marks2;
    }

    public String get_Details(){

        if(sub1 !=null && sub2 !=null && sub3 !=null){
            int total=sub1_marks+sub2_marks+sub3_marks;
            return "Student Id: "+id+" Student Name: "+name+"\n"+"subject 1:
"+sub1+" Marks"+sub1_marks+"\n"+
                    "subject 2: "+sub2+" Marks"+sub2_marks+"\n"+"subject 3:
"+sub3+" Marks"+sub3_marks+"\n"+"Total Marks: "+total;
        }
        else if(sub1 !=null && sub2 !=null){
            int total1=sub1_marks+sub2_marks;
            return "Student Id: "+id+" Student Name: "+name+"\n"+"subject 1:
"+sub1+" Marks"+sub1_marks+"\n"+
                    "subject 2: "+sub2+" Marks"+sub2_marks+"\n"+"Total Marks:
"+total1;
        }
        return "Please select 3 or 2 subjects";
    }
```

```
public void set_subjects(String ...sub){
    if(sub.length==3){
        sub1=sub[0];
        sub2=sub[1];
        sub3=sub[2];
    }

    else if(sub.length==2)
    {
        sub1=sub[0];
        sub2=sub[1];
    }
    else{
        System.out.println("please select 3 or 2 subjects...");
    }
}
```

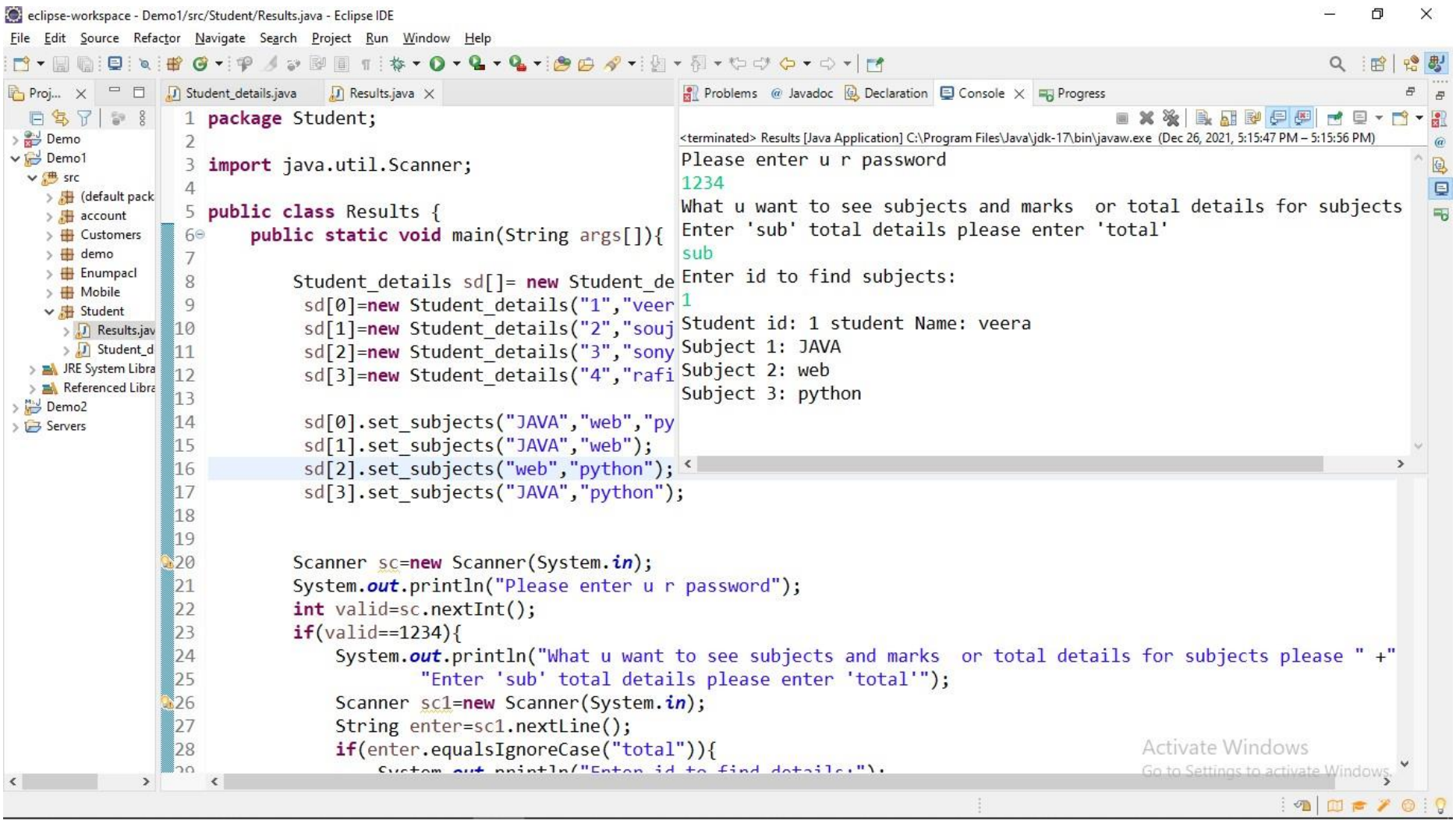
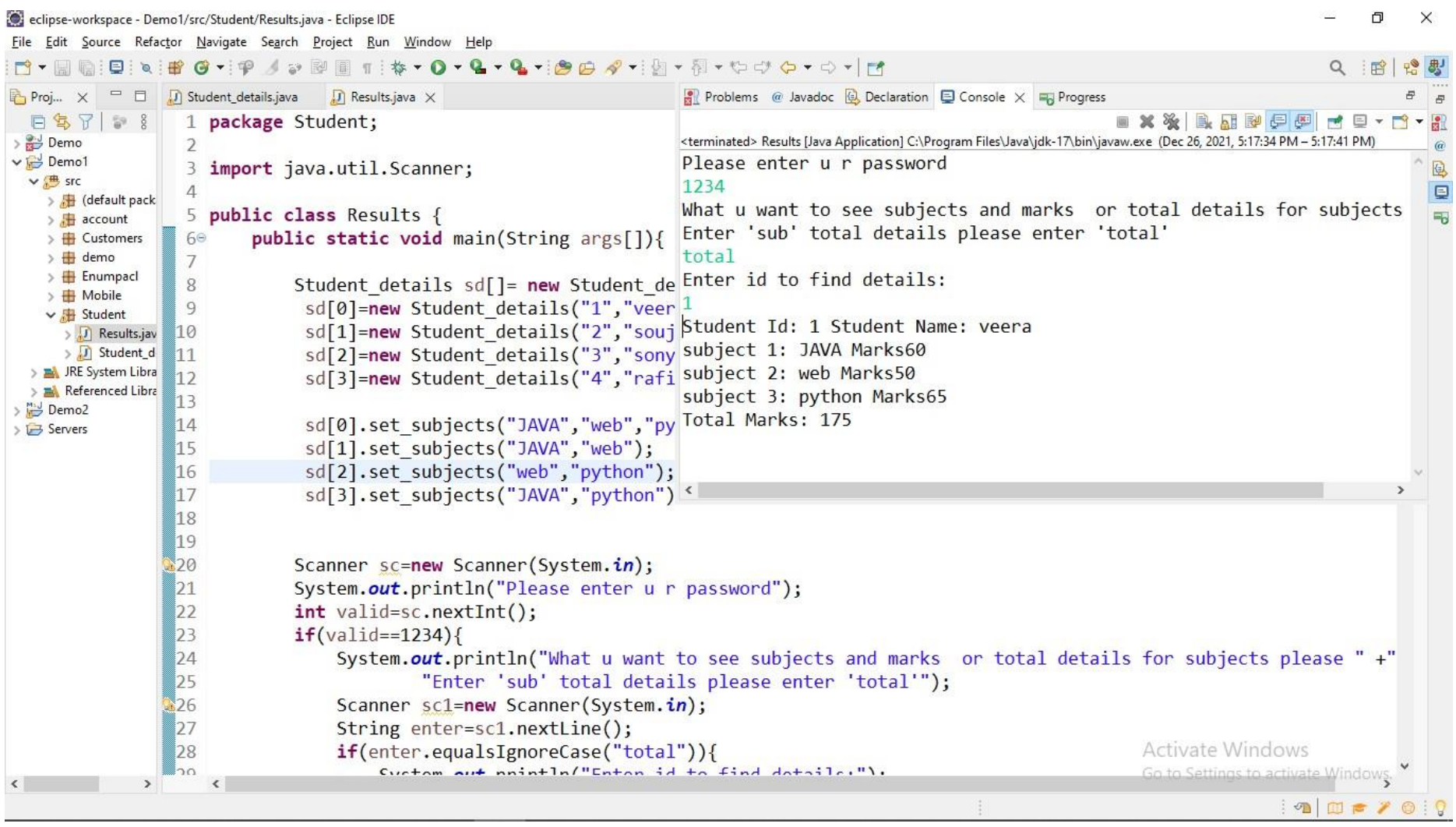
```
    public String get_subjects() {
        if (sub1 != null && sub2 != null && sub3 != null) {
            return "Student id: " + id + " student Name: " + name + "\n" +
"Subject 1: " + sub1 + "\n" + "Subject 2: " + sub2 + "\n"
                    + "Subject 3: " + sub3;
        } else if (sub1 != null && sub2 != null) {
            return "Student id: " + id + " student Name: " + name + "\n" +
"Subject 1: " + sub1 + "\n" + "Subject 2: " + sub2;

        }
        return "Please select atleast 2 or 3 subjects...";
    }
}
```

Results (child class / main class):

```
package Student;

import java.util.Scanner;

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

        Student_details sd[]= new Student_details[4];
         sd[0]=new Student_details("1","veera",60,50,65);
         sd[1]=new Student_details("2","soujanya",70,65,60);
         sd[2]=new Student_details("3","sony",75,80,46);
         sd[3]=new Student_details("4","rafi",73,75,80);

         sd[0].set_subjects("JAVA","web","python");
         sd[1].set_subjects("JAVA","web");
         sd[2].set_subjects("web","python");
         sd[3].set_subjects("JAVA","python");
```

```
            Scanner sc=new Scanner(System.in);
            System.out.println("Please enter u r password");
            int valid=sc.nextInt();
            if(valid==1234){
                System.out.println("What u want to see subjects and marks  or total
details for subjects please " +"\n"+
                        "Enter 'sub' total details please enter 'total'");
                Scanner sc1=new Scanner(System.in);
                String enter=sc1.nextLine();
                if(enter.equalsIgnoreCase("total")){
                    System.out.println("Enter id to find details:");
                    int id=sc1.nextInt();
                    try{
                        System.out.println(sd[id-1].get_Details());
                    }catch(Exception e){
                        System.err.println("Please enter correct student id");
                    }

                }
                else if(enter.equalsIgnoreCase("sub")){
                    System.out.println("Enter id to find subjects:");
                    int id=sc1.nextInt();
                    try{
                        System.out.println(sd[id-1].get_subjects());
                    }catch(Exception e){
                        System.err.println("Please enter correct student id");
                    }
                }
                else{
                    System.out.println("please select correct input...");
                }
            }
            else{
                System.out.println("Wrong Password please enter correct
password...");
            }

    }
}
```

Output 1 (subjects):



Output 2 (All details):