Beginner Java(JD521)

Group Activity 6

2020

MARCH 3

COMPANY NAME

Authored by: Your Name

Logo Name

Table of Contents

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Introduction

Program Content

Source Code:

Interface LoanConstants:

```
*/
public interface LoanConstants {
    /**
     * this is a constant value for a 1 year
     */
    public static final int SHORT_TERM = 1;
    /**
     * this is a constant value for a 3 year
     */
    public static final int MEDIUM_TERM = 3;
    /**
     * this is a constant value for a 5 year
     */
    public static final int LONG_TERM = 5;
    /**
     * this is a check constant value for the maximum loan amount that
     * most never over exceed this number
     */
    public static final long MAXIMUM_LOAN_AMOUNT =100000L;
    /**
     * this is a constant for the company name
     */
    public static final String COMPANY_NAME ="Sanchez Construction Loan Co";
}
```

class Loan implements LoanConstants

```
*/
package group.activity.pkg6.project;

import javax.swing.JOptionPane;
```

```
public abstract class Loan implements LoanConstants {//implements the interface
    protected  String loanNumber;
    protected  String customerLastName;
    protected  int loanAmount;
    protected  int term;
    protected String loanType;
    protected double totaleAmount;
    protected static int primeInterrestRate;
    protected static int interrestRate;
```

```
  public Loan(String loanNumber,String customerLastName,int loanAmount
          ,int term)//custom constructor
  {
  this.loanNumber=loanNumber;
   this.customerLastName=customerLastName;
    this.loanAmount=loanAmount;
     this.term=term;
  }
```

```
  public Loan(String loanNumber,String customerLastName,int l
          ,int term)//custom constructor
  {
  this.loanNumber=loanNumber;
   this.customerLastName=customerLastName;
    this.loanAmount=loanAmount;
     this.term=term;
  }

  public Loan(){}//default constructor
```

```java
/**
 * setter method property
 * @param loanNumber the loanNumber to set
 */
public void setLoanNumber(String loanNumber) {
    this.loanNumber = loanNumber;
}

/**
 * setter method property
 * @param customerLastName the customerLastName to set
 */
public void setCustomerLastName(String customerLastName) {
    this.customerLastName = customerLastName;
}
```

```java
/**
 * setter method property
 * @param loanAmount the loanAmount to set
 */
public void setLoanAmount(int loanAmount) {
    this.loanAmount = loanAmount;
}

/**
 * setter method property
 * @param term the term to set
 */
public void setTerm(int term) {
    this.term = term;
}
```

```java
/**
 * this is a get setter method
 * @param term
 * @return term
 */
public int getSetTerm(int term) {
    this.term = term;
    return term;
}
```

```java
/**
 * this method works the total amount due at the end of the term
 */
public void TotaleAmount(){
    double TotaleAmount = loanAmount*(1+((interrestRate/100)*term));
    this.totaleAmount=TotaleAmount;
}
```

```java
/**
 * this method takes the array of object and converts it into a string
 * value to print all loan data
 * @return toString
 */
@Override
public String toString(){
    String toString ="The Loan Number is :"+loanNumber+" "
            +"The customer last name is :"+customerLastName+" "
            +"the loan amount is :"+loanAmount+" "
            +"the Interrest rate is :"+interrestRate+" "
            +"the term of the loan is :"+term+""
            +"This is the totale amount that is owed at the end of the "
            +"term"+" "+"R"+totaleAmount;
    return toString;
}
```

```java
/**
 * this is a method to check if the entered loan term is 1 or 3 or 5 years
 * else it makes it 1 year
 * @param term
 */
public void forceLoanTermCheck(int term){
    if(term == SHORT_TERM || term == MEDIUM_TERM || term == LONG_TERM){
        this.setTerm(term);
    }else{
        this.setTerm(1);
    }
}
```

```java
/**
 * this method catches the desired information for the loan requested
 * @param LoanArray
 */
public static void toString(Object LoanArray){//Print all loan data
        Loan.toStrings = new String[5];
    for(int i = 0;i < 5;i++){
        toStrings[i] = "The Applicant surname is:"+Loan.customerLastName+
        " "+"The Applicant Loan number is"
        +Loan.loanNumber+" "+"The amount that the applicant loanend is"
        +"R"+Loan.amountOfLoan+" "+"The Amount of Loan Years"+Loan.term
        +" "+"The interrest Rate is"+getInterrestRate()+"the totale "
        + "amount due by the end of the term is:"+"R"
        +Loan.totaleAmountDue;
}
}
```

```java
/**
 * this checks to see if the entered amount is not over the limit which is
 * R100 000
 */
public void maximumLoanAmountCheck(){//nog klaar maak
 if(loanAmount > MAXIMUM_LOAN_AMOUNT){
   JOptionPane.showMessageDialog(null,"Error Loan Amount over the Max Value"
                ,"Error Message"
               ,JOptionPane.ERROR_MESSAGE);
      System.exit(0);
    }else{
        System.out.println("correct choice");
    }
}
```

class BusinessLoan extends Loan

```java
package groupproject6;
/**
 *
 * @author Albert Michael Ludick(5119)
 */
public class BusinessLoan extends Loan {//inherits
    public BusinessLoan(String loanNumber,String customerLastName,int loanAmount
            ,int term){//custom constructor
        super(loanNumber,customerLastName,loanAmount,term);
        Loan.interrestRate=(Loan.interrestRate/100)+(1/100);
    }
    public BusinessLoan(){ //default constructor
     Loan.interrestRate=(Loan.interrestRate/100)+(1/100);
      Loan.interrestRate= Loan.interrestRate*100;
       }
}
```

class PersonalLoan extends Loan

```java
package groupproject6;
/**
 *
 * @author Albert Michael Ludick(5119)
 */
```

```java
public class PersonalLoan extends Loan {//inherits
    public PersonalLoan(String loanNumber,String customerLastName
            ,int loanAmount,int term){//custom constructor
        super(loanNumber,customerLastName,loanAmount,term);
        Loan.interrestRate=(Loan.interrestRate/100)+(2/100);
    }
    public PersonalLoan(){//default constructor
        Loan.interrestRate=(Loan.interrestRate/100)+(1/100);
        Loan.interrestRate= Loan.interrestRate*100;
    }

}
```

Entry class method:createloans

```java
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
package group.activity.pkg6.project;
import java.awt.HeadlessException;
import javax.swing.JOptionPane;
/**
 *
 * @author MIchael Ludick
 */
public class CreateLoans {
```

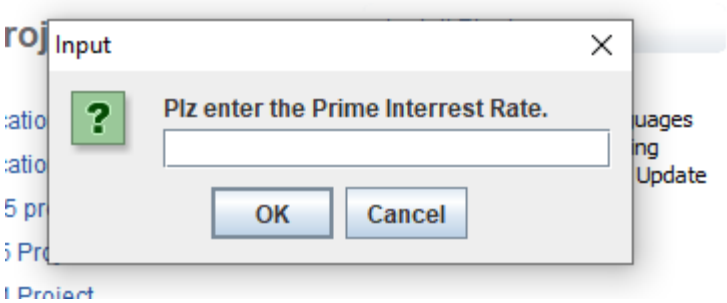
```
public static void main(String[] args) {
  try{
     Loan[] loanArray = new Loan[5];//intializes the array of loan object
     Loan.primeInterrestRate=Integer.parseInt(JOptionPane.showInputDialog
    ("plz enter the current prime interrest rate for the company"));

     for(int i = 0;i < 5;i++){
         String loanType = JOptionPane.showInputDialog("plz enter the "
                 + "loan type with exact spelling and Capitlizing "
                 + "the words BUSINESS or PERSONAL");//asks for loan type
       switch(loanType){
         case "BUSINESS":{  //checks  the loan type
           BusinessLoan newBusinessLoan = new BusinessLoan();
           newBusinessLoan.setLoanType(loanType);
           newBusinessLoan.setLoanNumber(JOptionPane.showInputDialog
              ("plz enter the Loan number of the customer"));//writes data

           newBusinessLoan.setCustomerLastName(JOptionPane.showInputDialog
             ("plz enter the Last name of the customer"));

           newBusinessLoan.setLoanAmount(Integer.parseInt
              (JOptionPane.showInputDialog
                  ("plz enter the loan amount of the customer")));
            newBusinessLoan.maximumLoanAmountCheck();//writes data
```

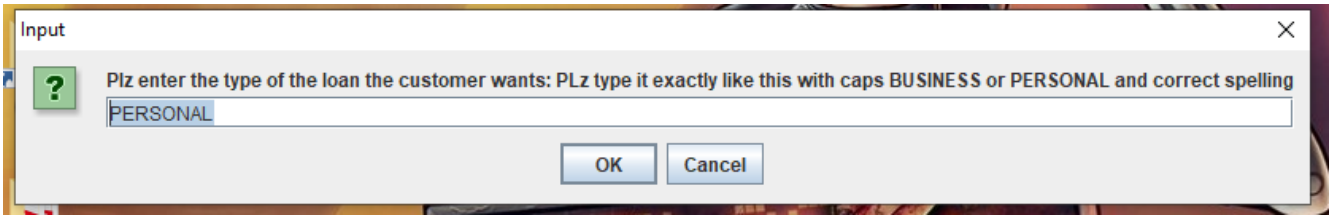
```
  newBusinessLoan.setLoanAmount(Integer.parseInt
     (JOptionPane.showInputDialog
         ("plz enter the loan amount of the customer")));
   newBusinessLoan.maximumLoanAmountCheck();//writes data

  newBusinessLoan.forceLoanTermCheck(newBusinessLoan.getSetTerm
      (Integer.parseInt(JOptionPane.showInputDialog
          ("plz enter the term of loan for the customer"))));
  newBusinessLoan.TotaleAmount();//calculates the loan amount
      //due
  loanArray[i]=newBusinessLoan;//adds the data to object
      //array
      break;
}
```

```
case "PERSONAL":{ //checks  the loan type
    PersonalLoan newPersonalLoan =new PersonalLoan();
    newPersonalLoan.setLoanType(loanType);
    newPersonalLoan.setLoanNumber(JOptionPane.showInputDialog
        ("plz enter the Loan number of the customer"));//writes data

    newPersonalLoan.setCustomerLastName(JOptionPane.showInputDialog
       ("plz enter the Last name of the customer"));

    newPersonalLoan.setLoanAmount(Integer.parseInt
        (JOptionPane.showInputDialog
            ("plz enter the loan amount of the customer")));
    newPersonalLoan.maximumLoanAmountCheck();//writes data

    newPersonalLoan.forceLoanTermCheck(newPersonalLoan.getSetTerm
        (Integer.parseInt(JOptionPane.showInputDialog
            ("plz enter the term of loan for the customer"))));
        newPersonalLoan.TotaleAmount();//calculates the loan amount
        //due
        loanArray[i]=newPersonalLoan;//adds the data to object
        //array
        break;
    }
```

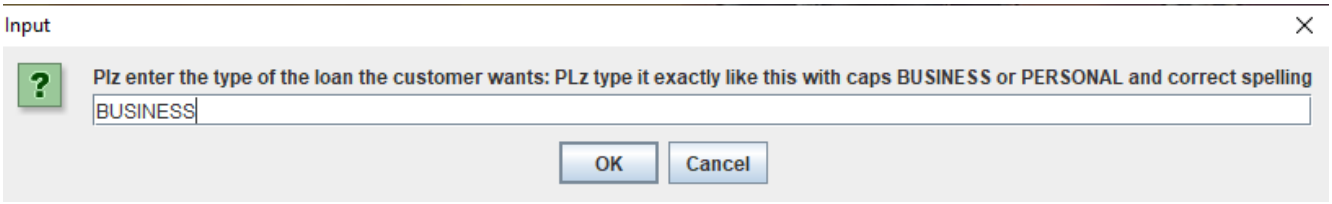
```
        }
            for(int i =0;i<5;i++){//display all loan data of loan array
                JOptionPane.showMessageDialog(null, loanArray[i].toString());
            }
    }
        catch(ArrayIndexOutOfBoundsException |HeadlessException
                | NumberFormatException ex)
        {//error handeling
            JOptionPane.showMessageDialog(null,ex,"Error Message"
                ,JOptionPane.ERROR_MESSAGE);
            throw ex;
        }
    }
}
```

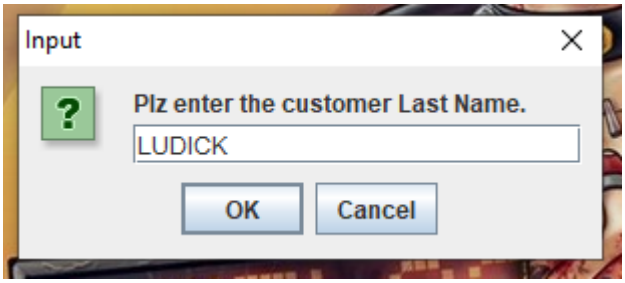
The program is running

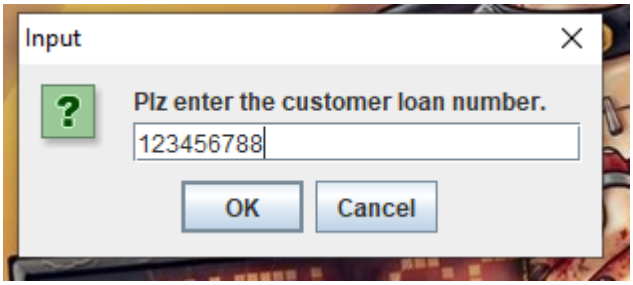


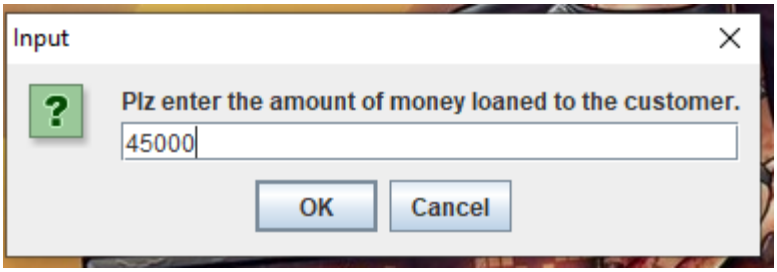

Input
Plz enter the type of the loan the customer wants: PLz type it exactly like this with caps BUSINESS or PERSONAL and correct spelling
PERSONAL
OK
Cancel

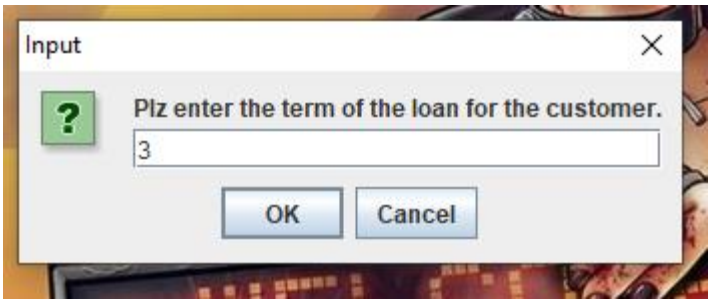
or

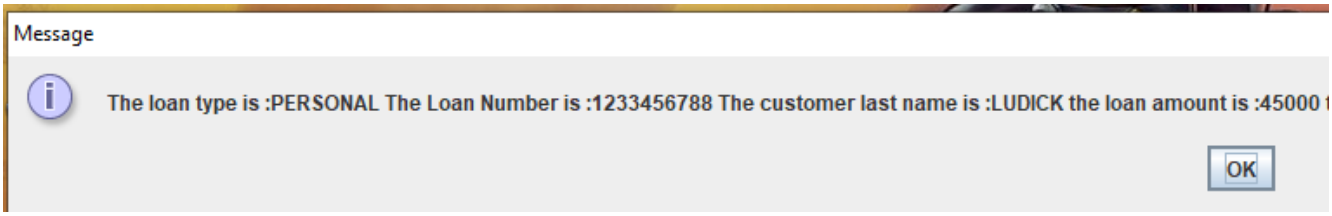

Input
Plz enter the type of the loan the customer wants: PLz type it exactly like this with caps BUSINESS or PERSONAL and correct spelling
BUSINESS
OK
Cancel

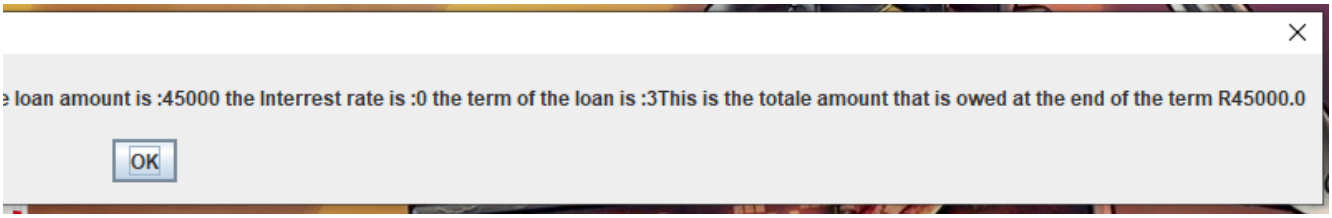

Input
Plz enter the customer Last Name.
LUDICK
OK
Cancel

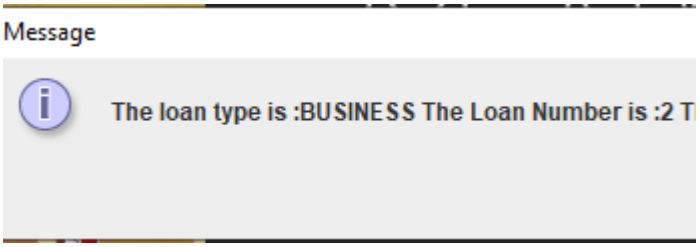

Input
Plz enter the customer loan number.
123456788
OK
Cancel


Input
Plz enter the amount of money loaned to the customer.
45000
OK
Cancel


Input
Plz enter the term of the loan for the customer.
3
OK
Cancel


Message
The loan type is :PERSONAL The Loan Number is :1233456788 The customer last name is :LUDICK the loan amount is :45000
OK


loan amount is :45000 the Interrest rate is :0 the term of the loan is :3This is the totale amount that is owed at the end of the term R45000.0
OK


Message
The loan type is :BUSINESS The Loan Number is :2 T

Conclusion:

Bibliography & References:

Websites:

GeeksforGeek : https://www.geeksforgeeks.org/
And Javapoint : https://www.javatpoint.com/
Wiki How to do anything : https://www.wikihow.com/Calculate-Weighted-Average

Books:

Java_ A Beginner's Guide, Eighth Edition

Appendix

No Extra files or media.

Except for the project itself