PROJECT REPORT ON
BANK LOAN STATUS MANAGEMENT SYSTEM

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BANK LOAN STATUS MANAGEMENT SYSTEM

Source code:

```java
//Code without using swing
import java.util.Scanner;
import java.io.*;  //import java.io.BufferedReader,import java.io.IOException,import
java.io.InputStreamReader,import java.nio.charset.StandardCharsets,
import java.nio.charset.StandardCharsets;
import java.util.*;

class BankWork
{
        final int max_limit = 20;
        final int min_limit = 1;
    final double min_bal = 500;
    private String name[] = new String[20];
    private int[] age = new int[20];
    private int income[] = new int[20];
    private int accNo[] = new int[20];
    private String accType[] = new String[20];
    private double balAmt[] = new double[20];
    static int totRec = 0;
    BankWork()
    {
       for (int i = 0; i < max_limit; i++)
       {
          name[i] = "";
          age[i] = 0;
          income[i] = 0;
          accNo[i] = 0;
          accType[i] = "";
          balAmt[i] = 0.0;
       }
    }
    //creating a new bank entry
    public void newEntry(){
         String str;
       int acno,age,income;
       double amt;
       boolean permit;
       permit = true;
       if(totRec > max_limit)
       {
          System.out.println("\n Sorry we could not admit you into our bank.");
          permit = false;
       }
```

```java
    if(permit = true)
    {
        totRec++;
        System.out.println("------Recording New Entry-----");
        try
        {
                accNo[totRec] = totRec;
                System.out.println("Account number : " + accNo[totRec]);
                BufferedReader obj = new BufferedReader(new InputStreamReader(System.in));
                System.out.println("Please enter your name : ");
                System.out.flush();
                name[totRec] = obj.readLine();
                System.out.println("Enter age: ");
                System.out.flush();
                str = obj.readLine();
            this.age[totRec] = Integer.parseInt(str);
            System.out.print("Enter Account Type : ");
            System.out.flush();
            accType[totRec] = obj.readLine();
            do
            {
                System.out.print("Enter the Initial Amount to be deposited : ");
                System.out.flush();
                str = obj.readLine();
                balAmt[totRec] = Double.parseDouble(str);
            }
            while (balAmt[totRec] < min_bal);
                System.out.println("\n");
        } catch (Exception e) {}
    }
}
//displaying the details of the user
public void display()
{
        String str;
        int min_last =0;
        int acno;
        boolean valid = true;
        System.out.println("-----Details of Customer------");
        try
        {
                BufferedReader obj = new BufferedReader(new InputStreamReader(System.in));
            System.out.print("Please Enter your Account number : ");
            System.out.flush();
            str = obj.readLine();
            acno = Integer.parseInt(str);
            if(acno < min_last || acno > totRec)
```
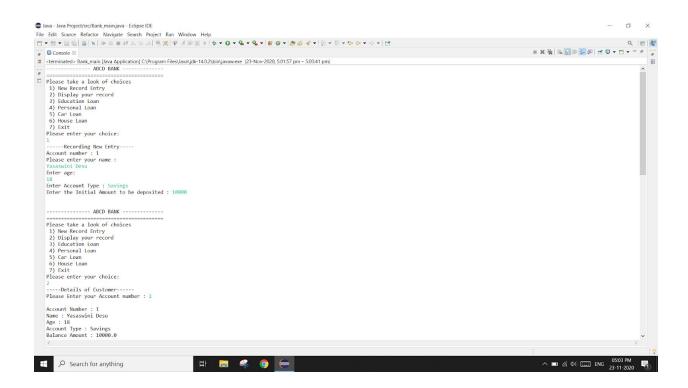
```java
        {
                System.out.println("\n*Invalid Account Number.* ");
                valid = false;
        }
        if(valid = true)
        {
                System.out.println("\nAccount Number : " + accNo[acno]);
                System.out.println("Name : " +name[acno]);
                System.out.println("Age : " +age[acno]);
                System.out.println("Account Type : " + accType[acno]);
            System.out.println("Balance Amount : " + balAmt[acno] + "\n");
        }
    }
    catch(Exception e) {}
}
//Educationloan
public void eduloan()
{
        double principle;
        double rate;
        double time;
        double monthlycost;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter your income : ");
    int        income = sc.nextInt();
    System.out.println("Enter your age: ");
    int age = sc.nextInt();
        try{
            if(income >400000 && age > 15)
            {
                    System.out.println("Do you have any surity for your loan(Enter Y or N): ");
                    System.out.println("Enter loan amount: ");
                    principle = sc.nextFloat();
                    System.out.println("Enter rate: ");
                    rate = sc.nextFloat();
                    System.out.println("Enter term in years: ");
                    time = sc.nextFloat();
                    rate = rate / (12*100);
                    time = time *12;
                    monthlycost = (principle * rate * Math.pow(1 + rate, time))/ (Math.pow(1 + rate, time)
- 1);
                    System.out.println("The monthly amount that you need to pay is : " +monthlycost);
                    System.out.println("Your Education loan is approved");
                    System.out.println("Thankyou, visit again");
            }
            else
            {
```
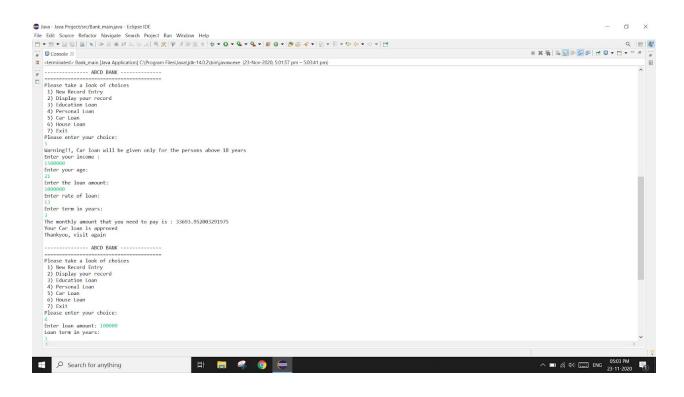
```java
                System.out.println("Sorry, our bank cannot give the loan");
                System.out.println("Thankyou, visit again");
            }
        } catch(Exception e) {}
    }
    //Personal loan
        public void perloan() throws IOException {
                InputStreamReader reader = new InputStreamReader(System.in,
StandardCharsets.UTF_8);
                BufferedReader in = new BufferedReader(reader);
                double loan;
                do
                {
                        System.out.append("Enter loan amount: ");
                        String loanam = in.readLine();
                        loan = Double.parseDouble(loanam);
                        if(loan <=99)
                        {
                                System.out.println("Loan term must be greater than 99");
                        }
                }while(loan <= 99);
                int term;
                do
                {
                        System.out.println("Loan term in years: ");
                        String termInYears = in.readLine();
                        term = Integer.parseInt(termInYears);
                        if(term <= 0)
                        {
                                System.out.println("Loan term must be atleast one year ");
                        }
                        else if(term > 50)
                        {
                                System.out.println("Loan term cannot excced 50 years");
                        }
                }while(term <= 0 || term > 50);
                double rate;
                System.out.println("Interest rate per year: ");
                String annualRate = in.readLine();
                rate = Double.parseDouble(annualRate);
                if(rate < 0)
                {
                        System.out.println("Interest cannot be negative");
                } while(rate < 0);
                rate = rate/(12*100);
                term = term*12;
```

```java
                double monthlycost = (loan * rate * Math.pow(1+rate, term)) / (Math.pow(1+rate, term)
- 1);
                System.out.println("The interest per month is: " +monthlycost );
                System.out.println("Your loan is approved");
                System.out.println("Thankyou, visit again");
        }
    //Car loan
        public void carloan() {
                double LAmount;
        double rate;
        double term;
        double monthlycost;
        Scanner sc = new Scanner(System.in);
        System.out.println("Warning!!, Car loan will be given only for the persons above 18 years");
        System.out.println("Enter your income : ");
    int         income = sc.nextInt();
    System.out.println("Enter your age: ");
    int age = sc.nextInt();
        try{
          if(income > 100000 && age > 18)
          {
                System.out.println("Enter the loan amount: ");
                LAmount = sc.nextFloat();
                System.out.println("Enter rate of loan: ");
                rate = sc.nextFloat();
                System.out.println("Enter term in years: ");
                term = sc.nextFloat();
                rate = rate / (12*100);
                term = term *12;
                monthlycost = (LAmount * rate * Math.pow(1 + rate, term))/ (Math.pow(1 + rate, term)
- 1);
                System.out.println("The monthly amount that you need to pay is : " +monthlycost);
                System.out.println("Your Education loan is approved");
                System.out.println("Thankyou, visit again");
          }
          else
          {
                System.out.println("Sorry, our bank cannot give the loan");
                System.out.println("Thankyou, visit again");
          }
        } catch(Exception e) {}
    }
        //House loan
        public void houseloan() {
                Scanner console = new Scanner(System.in);
                System.out.println("Enter the loan amount: ");
                double loan = console.nextDouble();
```
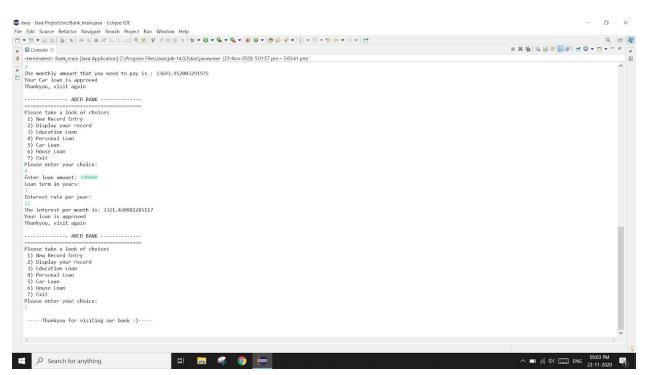
```java
                System.out.println("Enter the term: ");
                int years = console.nextInt();
                System.out.println("Enter the interest rate: ");
                double rate = console.nextDouble();
                System.out.println();
                int n = 12 * years;
                double c = rate /(12.0 * 100.0);
                double payment = loan * c * Math.pow(1 + c, n) / (Math.pow(1 + c, n) - 1);
                System.out.println("The monthly payement is : " +(int) payment);
        }
}
//Implementation
public class Bank_main {
        public static void main(String[] args) {
                String str;
                int choice = 0;
                BankWork option = new BankWork();
                do
                {
                        System.out.println("--------------- ABCD BANK -------------");
                        System.out.println("========================================");
                        System.out.println("Please take a look of choices");
                        System.out.println(" 1) New Record Entry ");
                        System.out.println(" 2) Display your record ");
                        System.out.println(" 3) Education Loan ");
                        System.out.println(" 4) Personal Loan ");
                        System.out.println(" 5) Car Loan ");
                        System.out.println(" 6) House Loan");
                        System.out.println(" 7) Exit ");
                        System.out.println("Please enter your choice: ");
                        System.out.flush();
                        try
                        {
                                BufferedReader obj = new BufferedReader(new
InputStreamReader(System.in));
                        str = obj.readLine();
                        choice = Integer.parseInt(str);
                        switch(choice)
                        {
                           case 1: option.newEntry();
                                break;
                           case 2: option.display();
                                break;
                           case 3: option.eduloan();
                                break;
                           case 4: option.perloan();
                                break;
```

```
            case 5: option.carloan();
                    break;
            case 6: option.houseloan();
                    break;
            case 7: System.out.println("\n -----Thankyou for visiting our bank :)----- \n");
                    break;
            default:System.out.println("Sorry, Invalid choice, please try again -- Thankyou ");
        }
                }
                catch(Exception e) {}
        }while(choice != 7);
    }
}
```

Output:

```
--------------- ABCD BANK ---------------
========================================
Please take a look of choices
  1) New Record Entry
  2) Display your record
  3) Education Loan
  4) Personal Loan
  5) Car Loan
  6) House Loan
  7) Exit
Please enter your choice:
5
Warning!!, Car loan will be given only for the persons above 18 years
Enter your income :
1500000
Enter your age:
21
Enter the loan amount:
1000000
Enter rate of loan:
13
Enter term in years:
3
The monthly amount that you need to pay is : 33693.952003291975
Your Car loan is approved
Thankyou, visit again

--------------- ABCD BANK ---------------
========================================
Please take a look of choices
  1) New Record Entry
  2) Display your record
  3) Education Loan
  4) Personal Loan
  5) Car Loan
  6) House Loan
  7) Exit
Please enter your choice:
4
Enter loan amount: 100000
Loan term in years:
3
```

```
3
The monthly amount that you need to pay is : 33693.952003291975
Your Car loan is approved
Thankyou, visit again

--------------- ABCD BANK ---------------
========================================
Please take a look of choices
  1) New Record Entry
  2) Display your record
  3) Education Loan
  4) Personal Loan
  5) Car Loan
  6) House Loan
  7) Exit
Please enter your choice:
4
Enter loan amount: 100000
Loan term in years:
3
Interest rate per year:
12
The interest per month is: 3321.430981285117
Your loan is approved
Thankyou, visit again

--------------- ABCD BANK ---------------
========================================
Please take a look of choices
  1) New Record Entry
  2) Display your record
  3) Education Loan
  4) Personal Loan
  5) Car Loan
  6) House Loan
  7) Exit
Please enter your choice:
7

-----Thankyou for visiting our bank :)-----
```

Explanation of the output:

The main agenda of this project is to give loans and calculate the monthly interest based on the rate, term and loan amount taken.
We have designed in such a way that the bank offers 4 types of loans namely
- Education loan
- Personal loan
- Car loan
- House loan

The user can select the type of loan he desires and the bank asks the user for the loan amount and term of the loan, the rate is given by the bank based on the requirements. For example, 13% for education loan, 15 % for car loan etc.
The monthly loan amount or simply EMI will be displayed and the user should pay accordingly. We have also put some restrictions for some types of loans based on income and age. For example, according to the rules of government, only 18+ aged people are allowed to ride, so the car loan will be given to the users who are 18 and above.