



*PROJECT REPORT ON  
BANK LOAN STATUS MANAGEMENT SYSTEM*

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# BANK LOAN STATUS MANAGEMENT SYSTEM

## Algorithm:

- Step-1:** The bank application first asks the user for the personal details.
- Step-2:** Once the name, age, income are entered, the application then moves to the most important step i.e. Loan amount, term and rate.
- Step-3:** Then, it asks to select the type of loan ( Education loan, Personal loan, Car loan, House loan).
- Step-4:** Once, the loan is selected, it displays the name and monthly payment amount in the text area.
- Step-5:** The application also provides the option to print and reset.
- Step-6:** If print is selected, we can get the text which is present in the text area in the form of PDF etc.
- Step-7:** If reset is selected, it provides an option to erase the data and start a new entry.

## Source code:

```
//Code using swing
//Java program for Bank Loan Management System
import java.awt.EventQueue;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JOptionPane;
import java.awt.Font;
import javax.swing.JSeparator;
import java.awt.Color;
import javax.swing.JTextField;
import javax.swing.SwingConstants;
import javax.swing.JRadioButton;
import javax.swing.JButton;
import java.awt.event.ActionListener;
import java.awt.event.ActionEvent;
import javax.swing.JTextArea;
public class Bank_1 {

    private JFrame frameBankLoanManagement;
    private JTextField textField_Name;
    private JTextField textField_Age;
    private JTextField textField_Income;
    private JTextField textField_Loan;
    private JTextField textField_Term;
    private JTextField textField_Rate;
    double loan[]=new double[20];
    String Intrest;
```

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```

/**
 * Launch the application.
 */
public static void main(String[] args) {
    EventQueue.invokeLater(new Runnable() {
        public void run() {
            try {
                Bank_1 window = new Bank_1();
                window.frameBankLoanManagement.setVisible(true);
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
    });
}

/**
 * Create the application.
 */
public Bank_1() {
    initialize();
}

/**
 * Initialize the contents of the frame.
 */
private void initialize() {
    frameBankLoanManagement = new JFrame();
    frameBankLoanManagement.setBounds(200, 200, 1200, 550);
    frameBankLoanManagement.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    frameBankLoanManagement.getContentPane().setLayout(null);

    JLabel lbluserdetails = new JLabel("User details");
    lbluserdetails.setFont(new Font("Times New Roman", Font.BOLD, 24));
    lbluserdetails.setBounds(185, 65, 139, 32);
    frameBankLoanManagement.getContentPane().add(lbluserdetails);

    JLabel lblBankLoanManagement = new JLabel("Bank Loan Management");
    lblBankLoanManagement.setFont(new Font("Times New Roman", Font.BOLD, 30));
    lblBankLoanManagement.setBounds(443, 10, 406, 32);
    frameBankLoanManagement.getContentPane().add(lblBankLoanManagement);

    JSeparator separator_1 = new JSeparator();
    separator_1.setBounds(10, 52, 1166, 3);
    frameBankLoanManagement.getContentPane().add(separator_1);

    JLabel lblName = new JLabel("Name");

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lblName.setFont(new Font("Times New Roman", Font.BOLD, 20));
lblName.setBounds(30, 122, 122, 32);
frameBankLoanManagement.getContentPane().add(lblName);

JLabel lblAge = new JLabel("Age");
lblAge.setFont(new Font("Times New Roman", Font.BOLD, 20));
lblAge.setBounds(30, 176, 122, 32);
frameBankLoanManagement.getContentPane().add(lblAge);

JLabel lblIncome = new JLabel("Income");
lblIncome.setFont(new Font("Times New Roman", Font.BOLD, 20));
lblIncome.setBounds(30, 238, 122, 32);
frameBankLoanManagement.getContentPane().add(lblIncome);

JLabel lblLoan_Amount = new JLabel("Loan Amount");
lblLoan_Amount.setFont(new Font("Times New Roman", Font.BOLD, 20));
lblLoan_Amount.setBounds(30, 300, 122, 32);
frameBankLoanManagement.getContentPane().add(lblLoan_Amount);

JLabel lblTerm = new JLabel("Term");
lblTerm.setFont(new Font("Times New Roman", Font.BOLD, 20));
lblTerm.setBounds(30, 359, 122, 32);
frameBankLoanManagement.getContentPane().add(lblTerm);

JLabel lblRate = new JLabel("Rate");
lblRate.setFont(new Font("Times New Roman", Font.BOLD, 20));
lblRate.setBounds(30, 421, 122, 32);
frameBankLoanManagement.getContentPane().add(lblRate);

textField_Name = new JTextField();
textField_Name.setBounds(263, 122, 175, 32);
frameBankLoanManagement.getContentPane().add(textField_Name);
textField_Name.setColumns(10);

textField_Age = new JTextField();
textField_Age.setColumns(10);
textField_Age.setBounds(263, 176, 175, 32);
frameBankLoanManagement.getContentPane().add(textField_Age);

textField_Income = new JTextField();
textField_Income.setColumns(10);
textField_Income.setBounds(263, 238, 175, 32);
frameBankLoanManagement.getContentPane().add(textField_Income);

textField_Loan = new JTextField();
textField_Loan.setColumns(10);
textField_Loan.setBounds(263, 303, 175, 32);
frameBankLoanManagement.getContentPane().add(textField_Loan);
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textField_Term = new JTextField();
textField_Term.setColumns(10);
textField_Term.setBounds(263, 362, 175, 32);
frameBankLoanManagement.getContentPane().add(textField_Term);

textField_Rate = new JTextField();
textField_Rate.setColumns(10);
textField_Rate.setBounds(263, 421, 175, 32);
frameBankLoanManagement.getContentPane().add(textField_Rate);

JSeparator separator = new JSeparator();
separator.setForeground(Color.BLACK);
separator.setOrientation(SwingConstants.VERTICAL);
separator.setBounds(490, 116, 2, 337);
frameBankLoanManagement.getContentPane().add(separator);

JLabel lblLoanType = new JLabel("Loan Type");
lblLoanType.setFont(new Font("Times New Roman", Font.BOLD, 24));
lblLoanType.setBounds(529, 65, 139, 32);
frameBankLoanManagement.getContentPane().add(lblLoanType);

JRadioButton rdbtnEducation = new JRadioButton("Education Loan");
rdbtnEducation.setFocusable(false);
rdbtnEducation.setFont(new Font("Times New Roman", Font.BOLD, 20));
rdbtnEducation.setBounds(529, 122, 175, 32);
frameBankLoanManagement.getContentPane().add(rdbtnEducation);

JRadioButton rdbtnPersonalLoan = new JRadioButton("Personal Loan");
rdbtnPersonalLoan.setFocusable(false);
rdbtnPersonalLoan.setFont(new Font("Times New Roman", Font.BOLD, 20));
rdbtnPersonalLoan.setBounds(529, 173, 175, 32);
frameBankLoanManagement.getContentPane().add(rdbtnPersonalLoan);

JRadioButton rdbtnCarLoan = new JRadioButton("Car Loan");
rdbtnCarLoan.setFocusable(false);
rdbtnCarLoan.setFont(new Font("Times New Roman", Font.BOLD, 20));
rdbtnCarLoan.setBounds(529, 224, 175, 32);
frameBankLoanManagement.getContentPane().add(rdbtnCarLoan);

JRadioButton rdbtnHouseLoan = new JRadioButton("House Loan");
rdbtnHouseLoan.setFocusable(false);
rdbtnHouseLoan.setFont(new Font("Times New Roman", Font.BOLD, 20));
rdbtnHouseLoan.setBounds(529, 273, 175, 32);
frameBankLoanManagement.getContentPane().add(rdbtnHouseLoan);

JSeparator separator_2 = new JSeparator();
separator_2.setOrientation(SwingConstants.VERTICAL);
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separator_2.setForeground(Color.BLACK);
separator_2.setBounds(710, 116, 2, 337);
frameBankLoanManagement.getContentPane().add(separator_2);
JTextArea textArea = new JTextArea();
textArea.setForeground(Color.BLACK);
textArea.setFont(new Font("Times New Roman", Font.PLAIN, 22));
textArea.setBounds(757, 122, 385, 331);
frameBankLoanManagement.getContentPane().add(textArea);

JButton btnCalculate = new JButton("Calculate");
btnCalculate.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        String Name=textField_Name.getText();
        loan[0]=Double.parseDouble(textField_Age.getText());
        loan[1]=Double.parseDouble(textField_Income.getText());
        loan[2]=Double.parseDouble(textField_Loan.getText());
        loan[3]=Double.parseDouble(textField_Rate.getText());
        loan[4]=Double.parseDouble(textField_Term.getText());
        double age=loan[0];
        double income=loan[1];
        textArea.append("Welcome to ABDC Bank\n");

textArea.append("-----\n");
        textArea.append("Name of the user : ");
        textArea.append(Name);
        textArea.append("\n");
        textArea.append("Monthly payment is: ");
        if(rdbtnEducation.isSelected()==true) {
            if(age>15&&income>=300000)
            {
                loan[3] = loan[3] / (12*100);
loan[4] = loan[4] *12;
loan[5] = (loan[2] * loan[3] * Math.pow(1 + loan[3],loan[4]))/ (Math.pow(1 +
loan[3],loan[4]) - 1);
                Intrest=String.format("%.2f", loan[5]);
                textArea.append(Intrest);
            }else {
                JOptionPane.showMessageDialog(null, "Age requirement not
met","Loan Management", JOptionPane.OK_OPTION);
            }
        }
        else if(rdbtnPersonalLoan.isSelected()==true)
        {
            loan[3] = loan[3] / (12*100);
loan[4] = loan[4] *12;
loan[5] = (loan[2] * loan[3] * Math.pow(1 + loan[3],loan[4]))/ (Math.pow(1 +
loan[3],loan[4]) - 1);
                Intrest=String.format("%.2f", loan[5]);

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        textArea.append(Intrest);

        }else if(rdbtnCarLoan.isSelected()==true)
        {
            loan[3] = loan[3] / (12*100);
            loan[4] = loan[4] *12;
            loan[5] = (loan[2] * loan[3] * Math.pow(1 + loan[3],loan[4]))/ (Math.pow(1 +
loan[3],loan[4]) - 1);
            Intrest=String.format("%.2f", loan[5]);
            textArea.append(Intrest);

            }else if(rdbtnHouseLoan.isSelected()==true)
            {
                loan[3] = loan[3] / (12*100);
                loan[4] = loan[4] *12;
                loan[5] = (loan[2] * loan[3] * Math.pow(1 + loan[3],loan[4]))/ (Math.pow(1 +
loan[3],loan[4]) - 1);
                Intrest=String.format("%.2f", loan[5]);
                textArea.append(Intrest);
            }

        textArea.append("\n-----");
        textArea.append("\n\nThankyou for visting our bank.");
        textArea.append("\n");
        textArea.append("\nFor further details contact ");
        textArea.append("\n96854 XXXXX");
        textArea.append("\nabcd@gmail.com");
    }
});
btnCalculate.setFont(new Font("Times New Roman", Font.BOLD, 20));
btnCalculate.setBounds(529, 335, 139, 32);
frameBankLoanManagement.getContentPane().add(btnCalculate);

JButton btnReset = new JButton("Reset");
btnReset.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        textField_Name.setText(null);
        textField_Age.setText(null);
        textField_Income.setText(null);
        textField_Loan.setText(null);
        textField_Rate.setText(null);
        textField_Term.setText(null);
        rdbtnEducation.setSelected(false);
        rdbtnPersonalLoan.setSelected(false);
        rdbtnCarLoan.setSelected(false);
        rdbtnHouseLoan.setSelected(false);
        textArea.setText(null);
    }
});

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        }
    });
    btnReset.setFont(new Font("Times New Roman", Font.BOLD, 20));
    btnReset.setBounds(529, 377, 139, 32);
    frameBankLoanManagement.getContentPane().add(btnReset);

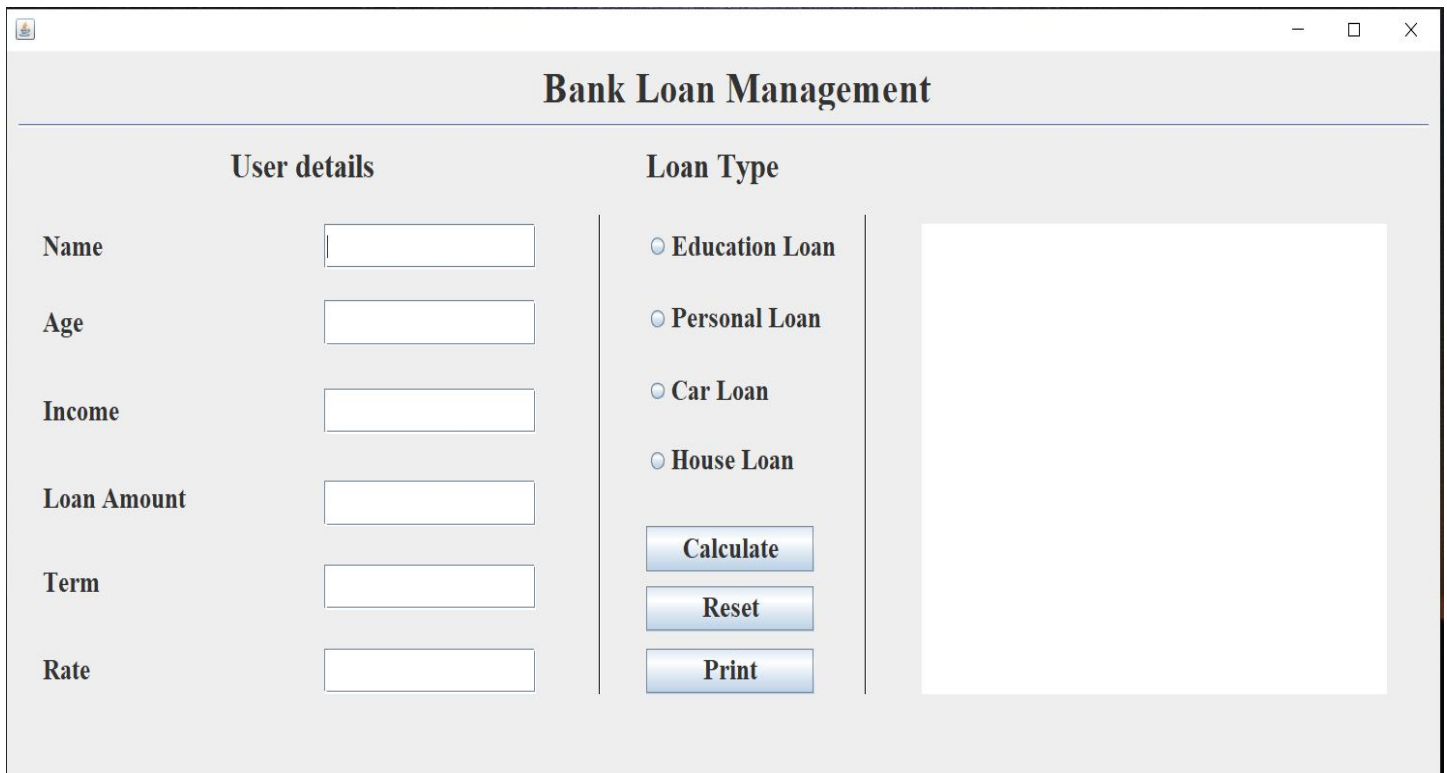
    JButton btnPrint = new JButton("Print");
    btnPrint.addActionListener(new ActionListener() {
        public void actionPerformed(ActionEvent e) {
            try {
                textArea.print();
                textField_Name.setText(null);
                textField_Age.setText(null);
                textField_Income.setText(null);
                textField_Loan.setText(null);
                textField_Rate.setText(null);
                textField_Term.setText(null);
                rdbtnEducation.setSelected(false);
                rdbtnPersonalLoan.setSelected(false);
                rdbtnCarLoan.setSelected(false);
                rdbtnHouseLoan.setSelected(false);
                textArea.setText(null);
            }
            catch(java.awt.print.PrinterException e1){
                System.err.format("No Printer Found", e1.getMessage());
                btnPrint.setFocusable(false);
            }
        }
    });
    btnPrint.setFont(new Font("Times New Roman", Font.BOLD, 20));
    btnPrint.setBounds(529, 421, 139, 32);
    frameBankLoanManagement.getContentPane().add(btnPrint);
}
}

```



## Output:

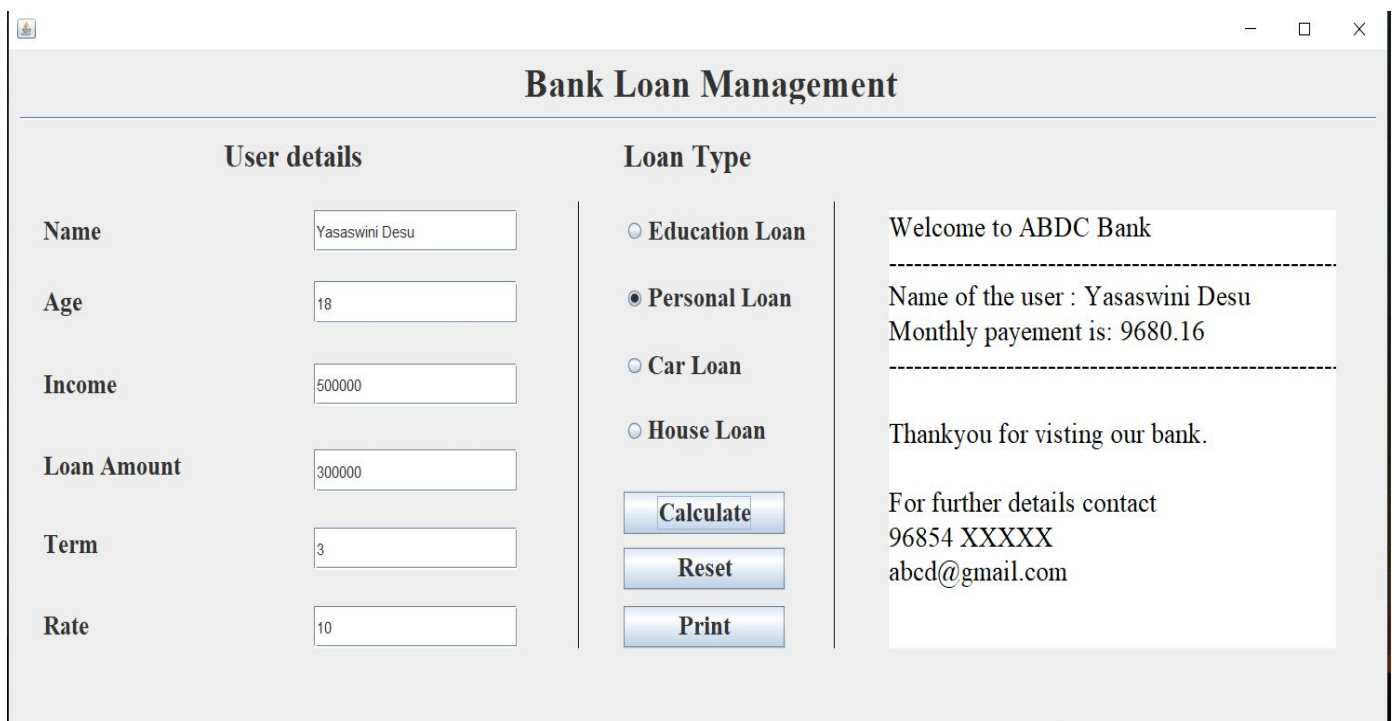
The application looks like:



The screenshot shows a web application window titled "Bank Loan Management". It features two main sections: "User details" and "Loan Type". The "User details" section contains six input fields for Name, Age, Income, Loan Amount, Term, and Rate. The "Loan Type" section contains four radio button options: Education Loan, Personal Loan, Car Loan, and House Loan. Below these options are three buttons: Calculate, Reset, and Print. A large empty rectangular area is present on the right side of the form.

User details		Loan Type
Name	<input type="text"/>	<input type="radio"/> Education Loan
Age	<input type="text"/>	<input type="radio"/> Personal Loan
Income	<input type="text"/>	<input type="radio"/> Car Loan
Loan Amount	<input type="text"/>	<input type="radio"/> House Loan
Term	<input type="text"/>	<input type="button" value="Calculate"/>
Rate	<input type="text"/>	<input type="button" value="Reset"/>
		<input type="button" value="Print"/>

After entering all the details:



The screenshot shows the same "Bank Loan Management" application window, but now with data entered in the input fields. The "Personal Loan" radio button is selected. The right side of the form now displays a welcome message, the user's name, the monthly payment amount, a thank you message, and contact information.

User details		Loan Type
Name	Yasaswini Desu	<input type="radio"/> Education Loan
Age	18	<input checked="" type="radio"/> Personal Loan
Income	500000	<input type="radio"/> Car Loan
Loan Amount	300000	<input type="radio"/> House Loan
Term	3	<input type="button" value="Calculate"/>
Rate	10	<input type="button" value="Reset"/>
		<input type="button" value="Print"/>

Welcome to ABDC Bank

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Name of the user : Yasaswini Desu  
Monthly payment is: 9680.16

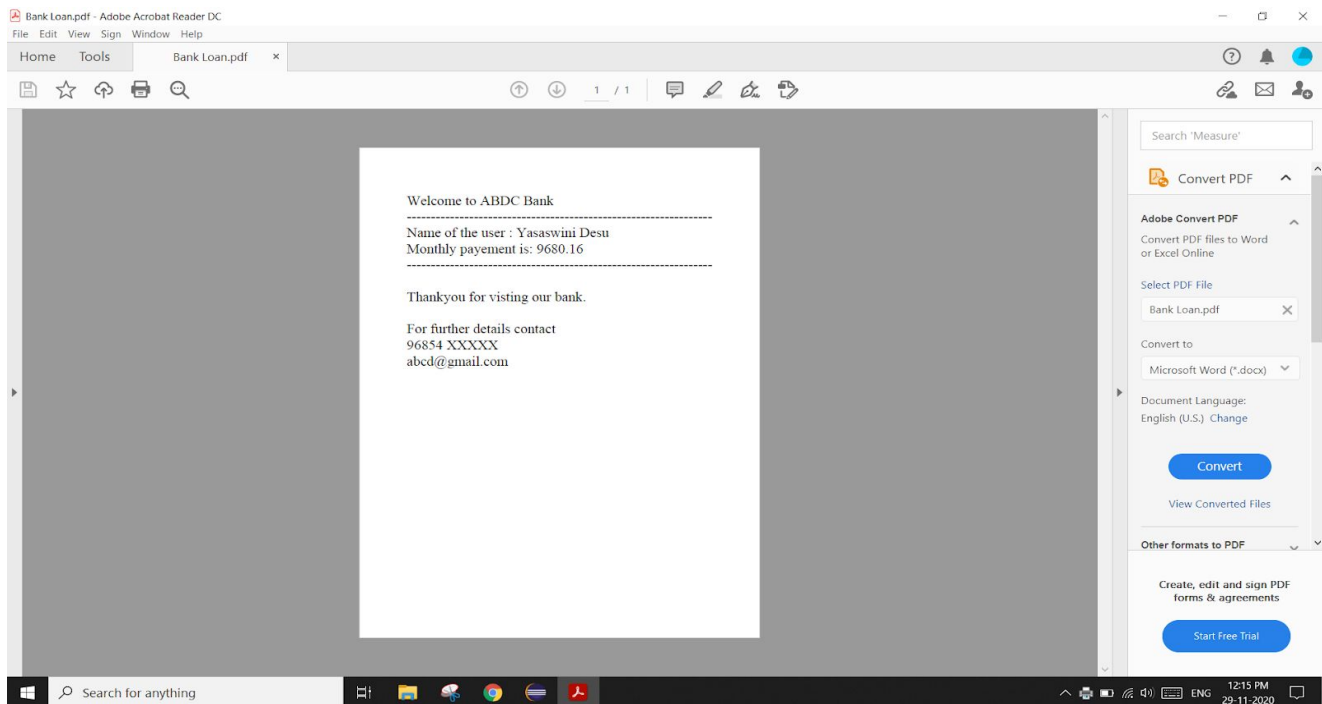
---

Thankyou for visting our bank.

For further details contact  
96854 XXXXX  
abcd@gmail.com

---

The data can also be printed:



## 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.

The application will display and at the same time it can print the data as a receipt.

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