NEW HORIZON
COLLEGE OF ENGINEERING
Autonomous College, Affiliated to VTU | Approved by AICTE New Delhi & UGC
Accredited by NAAC with 'A' Grade & Accredited by NBA

50 Golden Jubilee
YEARS OF EXCELLENCE IN EDUCATION

A MINI PROJECT

REPORT

for

Mini Project in JAVA (19CSE48)

LOAN HANDLING SOFTWARE

Submitted by

J KARTHIK SURYA
1NH19CS236
4-D

In partial fulfillment for the award of the degree of

Bachelor of Engineering

in

COMPUTER SCIENCE AND ENGINEERING

NEW HORIZON
COLLEGE OF ENGINEERING

Autonomous College, Affiliated to VTU | Approved by AICTE New Delhi & UGC
Accredited by NAAC with 'A' Grade & Accredited by NBA

Certificate

This is to certify that the mini project work titled

LOAN HANDLING SOFTWARE

Submitted in partial fulfillment of the degree of
Bachelor of Engineering in
Computer Science and Engineering by

J KARTHIK SURYA
1NH19CS236

DURING

EVEN SEMESTER 2020-2021

for

19CSE48

1/8/21

Signature of Reviewer

Signature of HOD

SEMESTER END EXAMINATION

Name of the Examiner *Signature with date*

1. ______________________ ______________________

2. ______________________ ______________________

1NH19CS236_KarthikSurya

ORIGINALITY REPORT

2%	%	2%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Akshay Bharadwaj K H, Deepak, V Ghanavanth, Harish Bharadwaj R, R Uma, Gowranga Krishnamurthy. "Smart CCTV Surveillance System for Intrusion Detection With Live Streaming", 2018 3rd IEEE International Conference on Recent Trends in Electronics, Information & Communication Technology (RTEICT), 2018 Publication	2%
2	A. Cataldo, R. Scattolini. "Dynamic Pallet Routing in a Manufacturing Transport Line With Model Predictive Control", IEEE Transactions on Control Systems Technology, 2016 Publication	1%

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	Off		

ABSTRACT

The main objective of developing this project is to handle the all details of Loans and Investments within the bank. The project has been developed to smoothen the process of Loans in banks. Our projected project automates the loan method from each, bankers similarly as customer’s facet. Customers will apply for loan and track their details. Loan handling software code could be a terribly economical method to handle all loan connected group action very correct and convenient means. Loan management system is associate in nursing interface that facilitates a client to use for a loan and to trace the standing from time to time. It provides details regarding the purchasers, their loan details, EMI and its rate details.

Getting a loan could be a terribly wearing and sophisticated method in India. Its going to take weeks even months for loans to induce approved and other people have to be compelled to visit the loan workplace once more for document and verification. Mistreatment with this technique admin will notice client details simply and it’s a paperless system thus employment is reduced. Its very useful for those banking staffs who square measure within the charge of loan management. It provides an awfully reliable and convenient type of each loan and EMI connected dealing and their connected details.

It additionally generates a really client friendly and comprehensible kind for his or her dealing info because the receive kind of once a dealing that contains all the knowledge associated with next EMI date, remaining quantity etc. Once registration client will use the software simply and additionally client will read any question concerning loan details additionally as EMI details in their profile. Most of the bank out-sources pre loan method to loan agencies to scale back the burden and let the agencies pickup the knowledge from customers and verify it before its being forwarded to the particular bank for approval of loan. This technique provides smart communication for the client and bank worker and to come up with the reports very simply.

ACKNOWLEDGEMENT

The satisfaction and euphoria that accompany the successful completion of any task would be impossible without the mention of the people who made it possible, whose constant guidance and encouragement crowned our efforts with success.

I have great pleasure in expressing gratitude to **Dr. Mohan Manghnani**, Chairman of New Horizon Educational Institutions for providing necessary infrastructure and creating good environment.

I take this opportunity to express my profound gratitude to **Dr. Manjunatha,** Principal, New Horizon College of Engineering, for his constant support and encouragement.

I am grateful to **Dr. Amarjeet Singh,** Dean - Academics, for his unfailing encouragement and suggestions, given to me in the course of my project work.

I would also like to thank **Dr. B. Rajalakshmi**, Professor and Head, Department of Computer Science and Engineering, for her constant support.

I also express my gratitude to **Ms. PramilaRani K**, Senior Assistant Professor, Department of Computer Science and Engineering, my project guide, for constantly monitoring thedevelopment of the project and setting up precise deadlines. Her valuable suggestions were the motivating factors in completing the work.

J KARTHIK SURYA
1NH19CS236

CONTENTS

LIST OF FIGURES

Chapter 1:

INTRODUCTION

1.1 PROBLEM DEFINITION

Loan processing carried out in quick time provides competitive advantages to NBFCs and MFIs and better utilization of time for the applicants. Hence, there is apressing need to have a technology that is time- saving for the institutions and convenient for potential borrowers. Many times, the NBFCs have to deal with process delays due to the manual loan processing system, which in some cases, results in losing their prospective customers altogether .In order to avoid this, most non-banking financial institutions and MFIs are going the way of an automated loan processing system, which in a way, helps both the customers andthe institutions. By cutting down on paperwork and manual process needed during the loan application processing period, a loan management system seeks to add immense business value to the MFI and elevate the overall customer experience the applicant receives.

1.2 OBJECTIVES

- Facility to calculate EMI based on loan amount and period of repayment
- Facility to keep record of all loans given by the bank
- Facility to generate different reports, which are helpful for the management in
- decision making.
- Authenticated accessibility and technology and customer service support.

1.3 EXPECTED OUTCOMES

- As a loan Handling Software, our first priority is safeguarding your data.
- It will check monthly rebate rate EMI, and calculate how much amount must be paid each month depending on the interest and time
- User-friendliness in navigation , layout and processing the output will be ,
- much faster expected .
- It eliminates the tedious tasks of sorting paperwork or documents.
- Simple and easier to use and calculates large number of loans too.

1.4 HARDWARE AND SOFTWARE REQUIREMENTS

HARDWARE REQUIREMENTS:

- Processor- Intel® Core™ i5- 9300HF CPU @ 1.80GHz 1.99 GHz⍰
- RAM- 8.00 GB⍰
- System Type- 64-bit operating system, x64-based processor

SOFTWARE REQUIREMENTS:

- Windows 10 Operating System
- Programming Language Used: Java
- Compiler: NetBeans Compiler
- IDE – NetBeans, Java JDK
- VS Code and appropriate use of Polymorphism and Multithreading

Chapter 2:

OOP's (Object Oriented Programming System)

Object suggests that a real-world entity like a pen, chair, table, watch, etc. Object Programming may be a methodology or paradigm to style a program victimization categories and object. It simplifies package development and maintenance by providing some concepts:

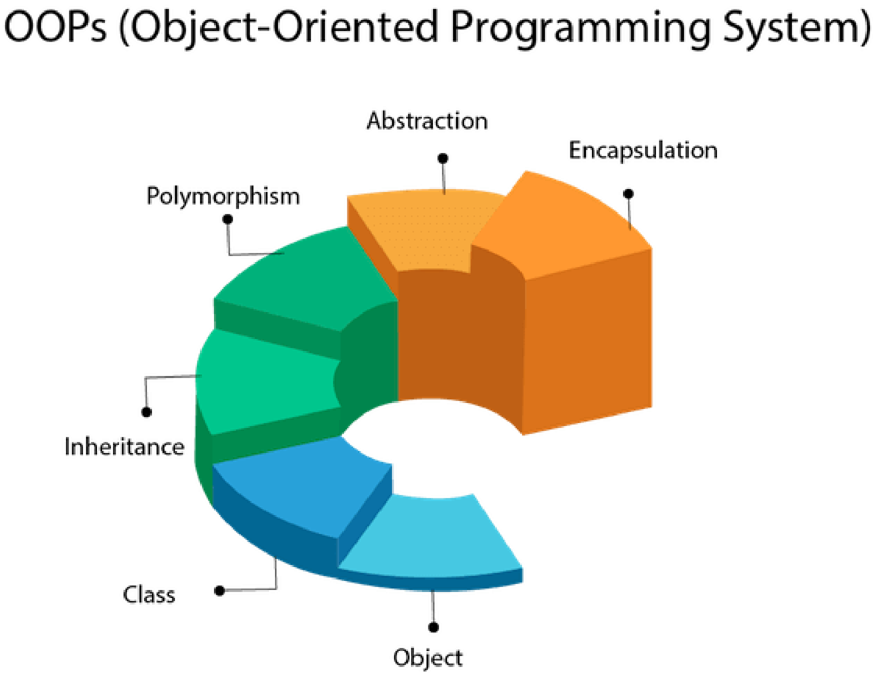


FIG 2.1

2.1 OBJECTS:

An Object may be outlined as an instance of a category. An Object contains an address and takes up some area in memory. Objects will communicate while not knowing the small print of every other's information or code. The sole necessary factor is that the kind of message accepted and also the kindof response came back by the objects. entity that It can takes up some space in memory. Objects can come back from the response.

Example: A dog is an object because it has particular breed, colour, name etc, aswell as behaviours like wagging the tail, barking, eating, etc.

2.2 CLASS:

Collection of objects is called class. It is a logical entity. A class can also be defined as a blueprint from which you can create an individual object. Class doesn't consume any space.

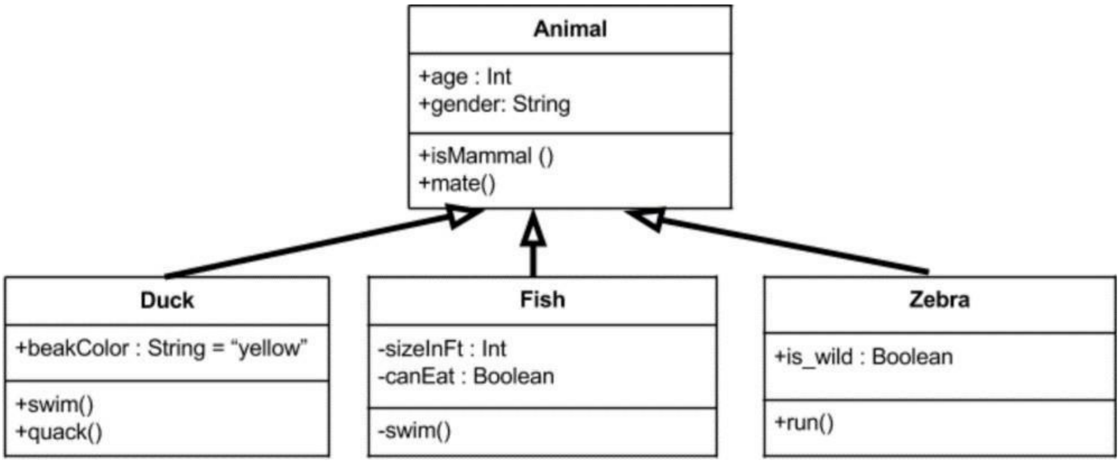


FIG 2.2

2.3 INHERITANCE

When one object acquires all the properties and behaviors of a parent object, its is referred to as inheritance. It provides code reusability. It is accustomed to deliver the goods runtime polymorphism.

2.4 POLYMORPHISM

If one task is performed in numerous ways then it is referred to as polymorphism. For example: to convert the client otherwise to draw one thing . For instance shape, triangle, square etc. In Java, we have a tendency to use technique predominant to attain polymorphism. Another instance, a cat speaks meows while a dog barks threads etc, this explains polymorphism.

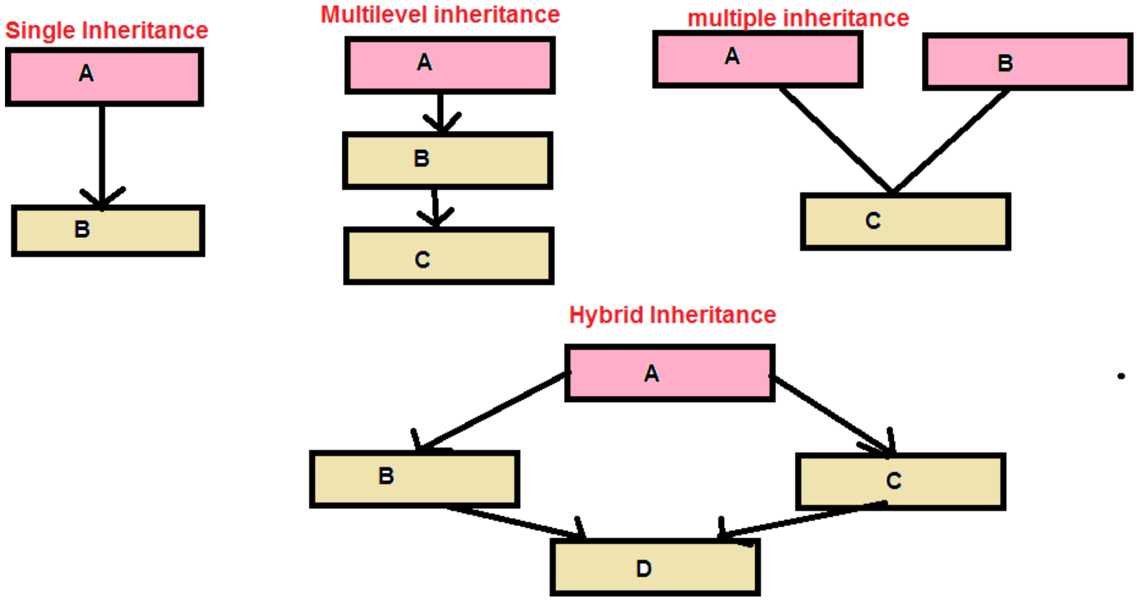


FIG 2.3

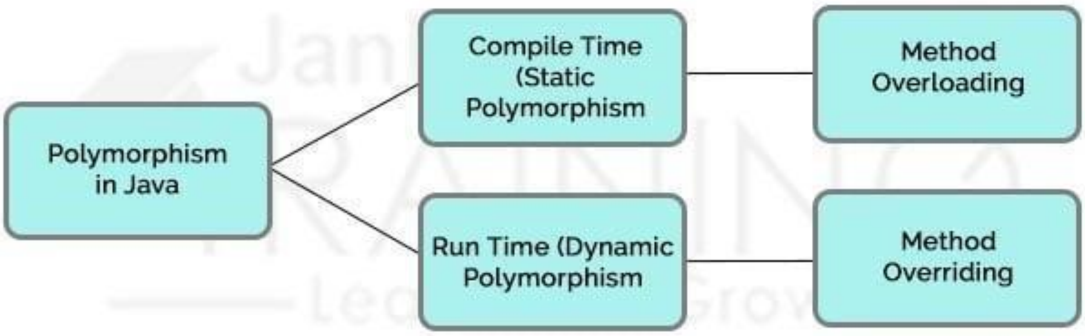

Polymorphism in Java
Compile Time (Static Polymorphism
Run Time (Dynamic Polymorphism
Method Overloading
Method Overriding

FIG 2.4

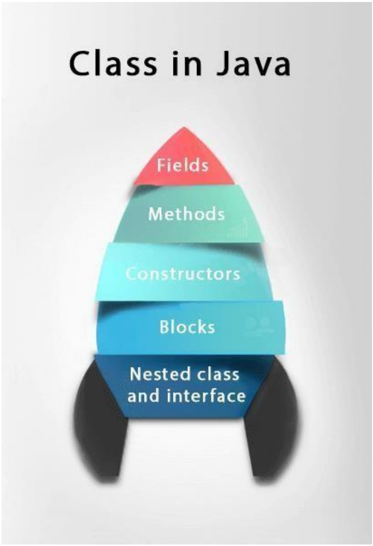


FIG 2.5.1

2.5 ABSTRACTION:

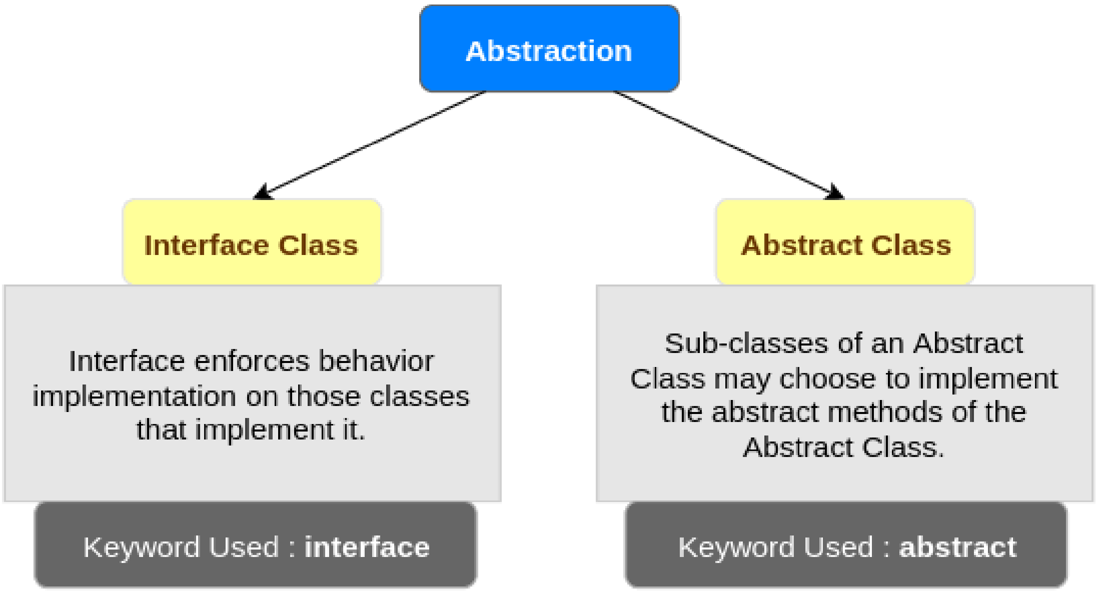
Hiding internal details and showing practicality is understood as abstraction, for instance telephony, we do not understand the interior process. In Java, we tend to use abstract category and interface to realize abstraction.

2.6 METHOD OVERLOADING:

If a class has multiple methods having same name but different in parameters, itis known as Method Overloading. If we have to perform only one operation, having same name of the methods increases the readability of the program.

Suppose you have to perform addition of the given numbers but there can be any number of arguments, if you write the method such as a(int,int) for two parameters, and b(int,int,int) for three parameters then it may be difficult for you as well as other programmers to understand the behavior of the methodbecause its name differs.

The simple and single advantage to method overloading is that it increases thereadability of the program.



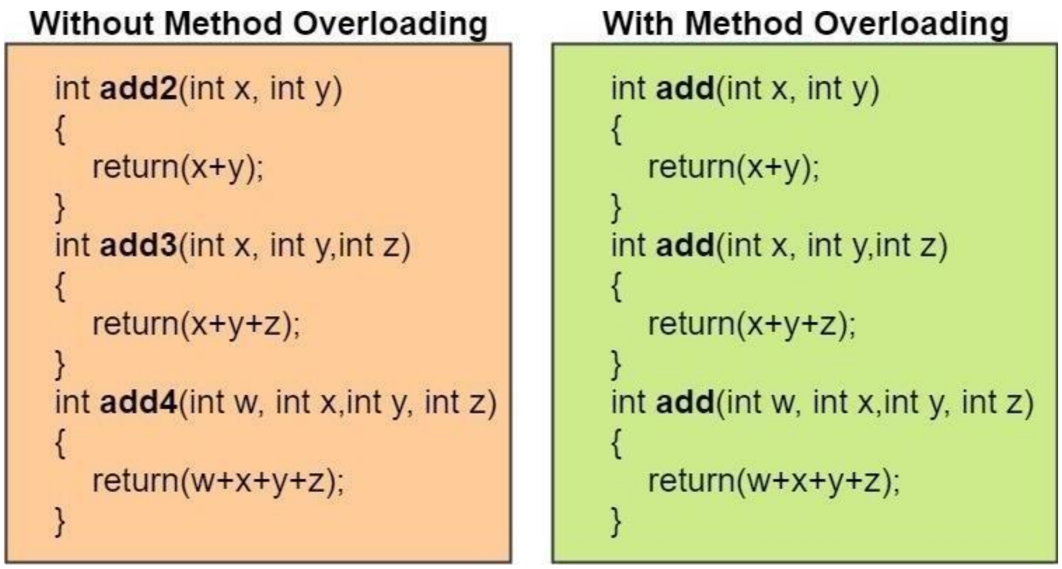
Interface enforces behavior implementation on those classes that implement it.

Keyword Used : **interface**

Sub-classes of an Abstract Class may choose to implement the abstract methods of the Abstract Class.

Keyword Used : **abstract**

2.5



Without Method Overloading

```
int add2(int x, int y)
{
   return(x+y);
}
int add3(int x, int y,int z)
{
   return(x+y+z);
}
int add4(int w, int x,int y, int z)
{
   return(w+x+y+z);
}
```

With Method Overloading

```
int add(int x, int y)
{
   return(x+y);
}
int add(int x, int y,int z)
{
   return(x+y+z);
}
int add(int w, int x,int y, int z)
{
   return(w+x+y+z);
}
```

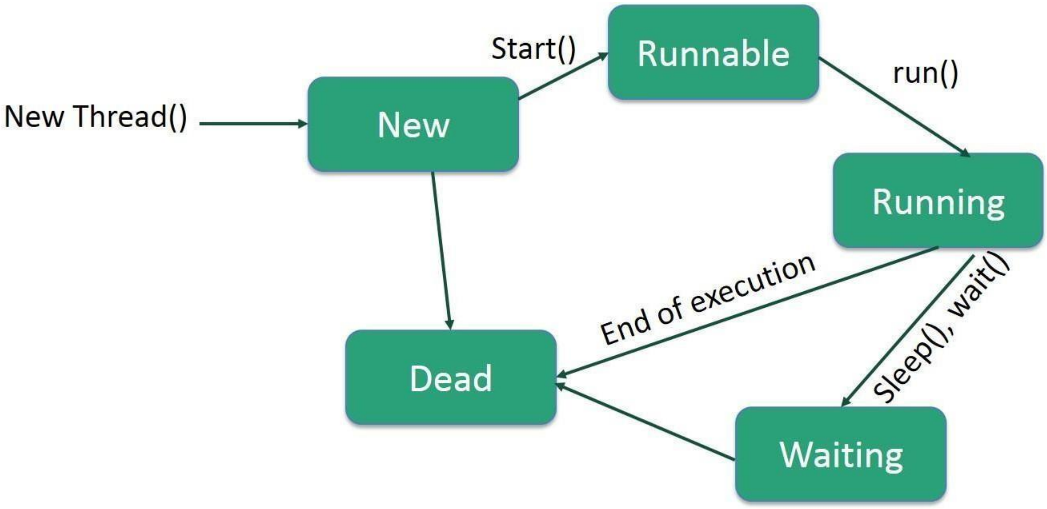
2.7\

2.7 Java JFrame:

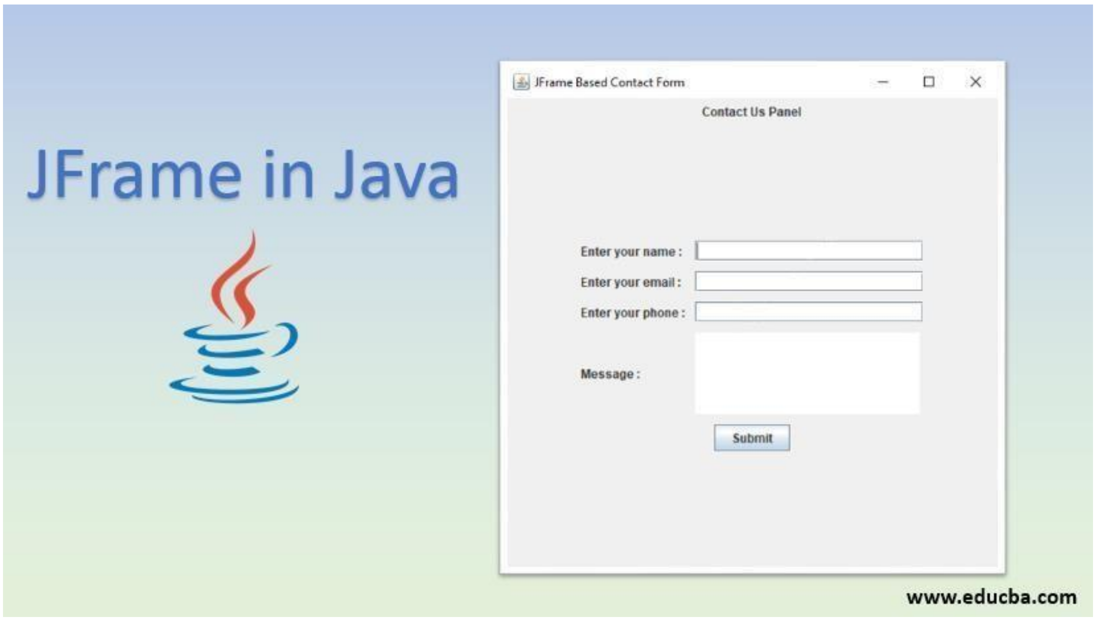
The javax.swing.JFrame class is a type of container which inherits the java.awt.Frame class. JFrame works like the main window where componentsLike labels, buttons, textfields are added to create a GUI. Unlike Frame, JFrame has the option to hide or close the window with the help of setDefaultCloseOperation(int) method.

2.8 MULTI THREADING:

It is a process of executing multiple threads simultaneously. A thread is a lightweight sub-process, the smallest unit of processing. Multiprocessing and multithreading, both are used to achieve multitasking. However, we use multithreading than multiprocessing because threads use ashared memory area. They don't allocate separate memory area so saves Memory, and context-switching between the threads takes less time than process. Java Multithreading is mostly used in games, animation, etc.

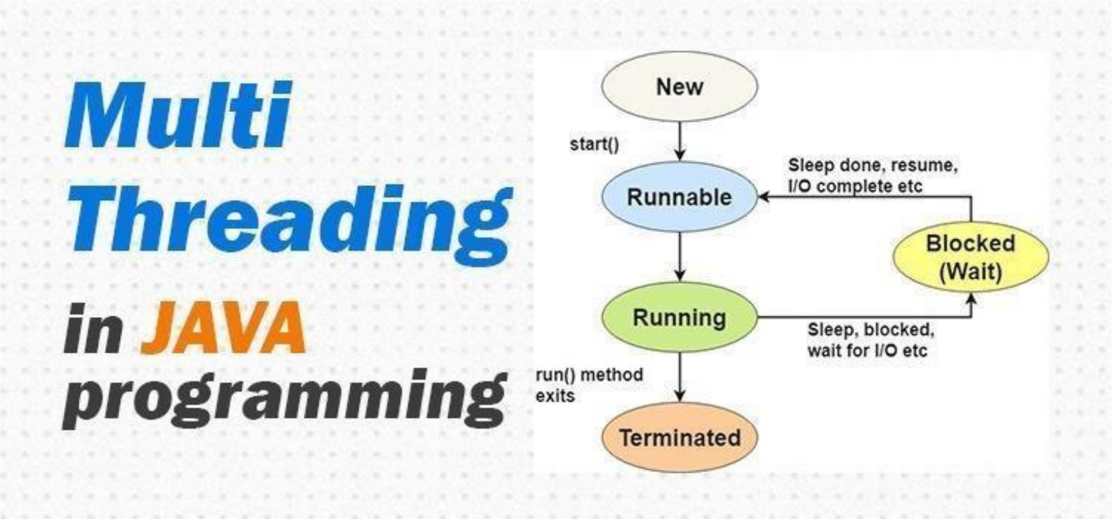


3.1



JFrame in Java
JFrame Based Contact Form
Contact Us Panel
Enter your name :
Enter your email :
Enter your phone :
Message :
Submit
www.educba.com

3.2



Multi
Threading
in JAVA
programming
New
start()
Runnable
Sleep done, resume,
I/O complete etc
Blocked
(Wait)
Running
Sleep, blocked,
wait for I/O etc
run() method
exits
Terminated

3.3

Chapter 3:

DESIGN

3.1 DESIGN GOALS :

This application has been designed in such a way that it makes it easier for the user to navigate through the various options available to them. It clearly asks for all the inputs required by the program and hence there is no loss or misuse of data taking place. Firstly it would ask the user to create a new profile thereby registering for a new account. Once you’re added inside our Loan Handling Software, you are given the option to input the amount of loan borrowed, interest rate and the number of payments which is the months due for the repayment, once done it allows to view your number of months for payment, payment per month and the total loan payment. These details are generated accurately.

3.2 ALGORITHM :

- If a user enters their details and the amount of loan, the application checksfor the loan() form for calculations.
- If none of the details are entered, a dialog box appears showing error fornot entering the values.
- It will ask for amount of loan, interest rate, number of payments, If all the details are entered, we click on the Loan calculator to generate the output.

```
payment = loan + ((loan * interest)/100);

MonthlyPayment = payment/ month;

String PayMonth = String.format("%.2f",MonthlyPayment);
```

- The above mentioned is a piece of logic from the code, which is used to calculate the loan and the desired details will be shown.
- Once done, the RESET button can be clicked to reset the values entered.
- EXIT

Chapter 4

IMPLEMENTATION

```
/*
 * 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 loan;

import javax.swing.JOptionPane;

/**
 *
 * @author Karthik Surya J
 */
public class loan extends javax.swing.JFrame {
double loan;
double interest;
double month;
double payment;
double MonthlyPayment;
String name;
String Account;
   /**
    * Creates new form loan
    */
   public loan() {
       initComponents();
   }

   /**
    * This method is called from within the constructor to initialize the form.
    * WARNING: Do NOT modify this code. The content of this method is always
    * regenerated by the Form Editor.
    */
   @SuppressWarnings("unchecked")
   // <editor-fold defaultstate="collapsed" desc="Generated Code">
   private void initComponents() {

       jPanel1 = new javax.swing.JPanel();
       jLabel11 = new javax.swing.JLabel();
       jPanel2 = new javax.swing.JPanel();
       jLabel1 = new javax.swing.JLabel();
       jLabel2 = new javax.swing.JLabel();
       jLabel3 = new javax.swing.JLabel();
       jLabel4 = new javax.swing.JLabel();
       jtxtLoan = new javax.swing.JTextField();
       jtxtInterest = new javax.swing.JTextField();
       jNumberofPayment = new javax.swing.JTextField();
       jtxtMonthlyPayment = new javax.swing.JTextField();
       jScrollPane1 = new javax.swing.JScrollPane();
       jLoanReport = new javax.swing.JTextArea();
```

```
        jPanel3 = new javax.swing.JPanel();

        jLabel5 = new  javax.swing.JLabel();

        jLabel6 = new  javax.swing.JLabel();

        jLabel7 = new  javax.swing.JLabel();

        jLabel8 = new  javax.swing.JLabel();

        jLabel9 = new javax.swing.JLabel();

        jLabel10 = new javax.swing.JLabel();

        jTextField5 = new javax.swing.JTextField();

        jtxtName = new javax.swing.JTextField();

        jtxtAccount = new javax.swing.JTextField();

        jTextField8 = new javax.swing.JTextField();

        jTextField9 = new javax.swing.JTextField();

        jTextField10 = new javax.swing.JTextField();

        jPanel4 = new javax.swing.JPanel();

        jLoanCalculate = new javax.swing.JButton();

        jReset = new javax.swing.JButton();

        jExit = new javax.swing.JButton();


        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        setPreferredSize(new java.awt.Dimension(1370, 700));


        jPanel1.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0, 0),
5));

        jPanel1.setFont(new java.awt.Font("Tahoma", 1, 36)); // NOI18N


        jLabel11.setFont(new java.awt.Font("Tahoma", 1, 48)); // NOI18N

        jLabel11.setText("Loan Handling Software");
        javax.swing.GroupLayout jPanel1Layout = new javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(
            jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(378, 378, 378)
                .addComponent(jLabel11, javax.swing.GroupLayout.PREFERRED_SIZE, 601,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
        );
        jPanel1Layout.setVerticalGroup(
            jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel1Layout.createSequentialGroup()
                .addGap(22, 22, 22)
                .addComponent(jLabel11, javax.swing.GroupLayout.PREFERRED_SIZE, 66,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(34, Short.MAX_VALUE))
        );

        jPanel2.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0, 0),
5));

        jLabel1.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jLabel1.setText("Amount of Loan");

        jLabel2.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jLabel2.setText("Interest Rate");
        jLabel3.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jLabel3.setText("Number of Payments");

        jLabel4.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jLabel4.setText("Monthly Payment");

        jtxtLoan.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jtxtLoan.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0, 0),
4));

        jtxtInterest.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jtxtInterest.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0,
0), 4));
        jtxtInterest.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jtxtInterestActionPerformed(evt);
            }
        });

        jNumberofPayment.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jNumberofPayment.setBorder(javax.swing.BorderFactory.createLineBorder(new
java.awt.Color(0, 0, 0), 4));

        jtxtMonthlyPayment.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jtxtMonthlyPayment.setBorder(javax.swing.BorderFactory.createLineBorder(new
java.awt.Color(0, 0, 0), 4));
        jtxtMonthlyPayment.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
```

```
            jtxtMonthlyPaymentActionPerformed(evt);
          }
        });

        jLoanReport.setColumns(20);
        jLoanReport.setRows(5);
        jScrollPane1.setViewportView(jLoanReport);

        javax.swing.GroupLayout jPanel2Layout = new javax.swing.GroupLayout(jPanel2);
        jPanel2.setLayout(jPanel2Layout);
        jPanel2Layout.setHorizontalGroup(
          jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
          .addGroup(jPanel2Layout.createSequentialGroup()
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
              .addGroup(jPanel2Layout.createSequentialGroup()
                .addGap(19, 19, 19)
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING,
false)
                  .addGroup(jPanel2Layout.createSequentialGroup()
                    .addComponent(jLabel1)
                    .addGap(168, 168, 168)
                    .addComponent(jtxtLoan))
                  .addGroup(jPanel2Layout.createSequentialGroup()
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                      .addComponent(jLabel2)
                      .addComponent(jLabel4))
.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING,
false)
                              .addGroup(jPanel2Layout.createSequentialGroup()
                                .addGap(152, 152, 152)
                                .addComponent(jtxtInterest, javax.swing.GroupLayout.PREFERRED_SIZE,
283, javax.swing.GroupLayout.PREFERRED_SIZE))
                              .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel2Layout.createSequentialGroup()

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                                .addComponent(jtxtMonthlyPayment,
javax.swing.GroupLayout.PREFERRED_SIZE, 283, javax.swing.GroupLayout.PREFERRED_SIZE))))
                          .addGroup(jPanel2Layout.createSequentialGroup()
                            .addComponent(jLabel3)
                            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                            .addComponent(jNumberofPayment,
javax.swing.GroupLayout.PREFERRED_SIZE, 283, javax.swing.GroupLayout.PREFERRED_SIZE))))
                      .addGroup(jPanel2Layout.createSequentialGroup()
                        .addContainerGap()
                        .addComponent(jScrollPane1, javax.swing.GroupLayout.PREFERRED_SIZE, 764,
javax.swing.GroupLayout.PREFERRED_SIZE)))
                    .addContainerGap(44, Short.MAX_VALUE))
        );
        jPanel2Layout.setVerticalGroup(
            jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel2Layout.createSequentialGroup()
                .addGap(36, 36, 36)

.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                    .addComponent(jLabel1)

                    .addComponent(jtxtLoan, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))

                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)


.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

                    .addComponent(jLabel2)

                    .addComponent(jtxtInterest, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))

                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)


.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

                    .addComponent(jLabel3)

                    .addComponent(jNumberofPayment, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))

                .addGap(9, 9, 9)


.addGroup(jPanel2Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)

                    .addComponent(jLabel4)

                    .addComponent(jtxtMonthlyPayment, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))

                .addGap(10, 10, 10)

                .addComponent(jScrollPane1)

                .addContainerGap())

        );


        jPanel3.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0, 0),
5));


        jLabel5.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N

        jLabel5.setText("Full Name");
        jLabel6.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jLabel6.setText("Address");

        jLabel7.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jLabel7.setText("Account Type");

        jLabel8.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jLabel8.setText("Withdrawal");

        jLabel9.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jLabel9.setText("Deposit");

        jLabel10.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jLabel10.setText("Overdraft Required?");

        jTextField5.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jTextField5.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0,
    0), 4));

        jtxtName.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N
        jtxtName.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0,
    0), 4));
        jtxtName.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jtxtNameActionPerformed(evt);
            }
        });
        jtxtAccount.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N

        jtxtAccount.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0,
0), 4));


        jTextField8.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N

        jTextField8.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0,
0), 4));


        jTextField9.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N

        jTextField9.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0,
0), 4));


        jTextField10.setFont(new java.awt.Font("Tahoma", 1, 18)); // NOI18N

        jTextField10.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0,
0, 0), 4));


        javax.swing.GroupLayout jPanel3Layout = new javax.swing.GroupLayout(jPanel3);

        jPanel3.setLayout(jPanel3Layout);

        jPanel3Layout.setHorizontalGroup(

            jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

            .addGroup(jPanel3Layout.createSequentialGroup()

                .addContainerGap()

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

                    .addComponent(jLabel10)

                    .addComponent(jLabel9)

                    .addComponent(jLabel8)

                    .addComponent(jLabel7)
                    .addComponent(jLabel6)
                    .addComponent(jLabel5))
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 113,
Short.MAX_VALUE)

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING,
false)
                    .addComponent(jtxtName)
                    .addComponent(jTextField5)
                    .addComponent(jtxtAccount)
                    .addComponent(jTextField9)
                    .addComponent(jTextField10, javax.swing.GroupLayout.DEFAULT_SIZE, 238,
Short.MAX_VALUE)
                    .addComponent(jTextField8))
                .addGap(82, 82, 82))
        );
        jPanel3Layout.setVerticalGroup(
            jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel3Layout.createSequentialGroup()

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(jPanel3Layout.createSequentialGroup()
                        .addGap(31, 31, 31)
                        .addComponent(jLabel5)
                        .addGap(25, 25, 25))
                    .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel3Layout.createSequentialGroup()
                        .addContainerGap()
                        .addComponent(jtxtName, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
                    .addGap(23, 23, 23)))

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING,
false)
                .addGroup(jPanel3Layout.createSequentialGroup()
                    .addGap(5, 5, 5)
                    .addComponent(jLabel6)
                    .addGap(34, 34, 34)
                    .addComponent(jLabel7))
                .addGroup(javax.swing.GroupLayout.Alignment.LEADING,
jPanel3Layout.createSequentialGroup()
                    .addComponent(jTextField5, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
                    .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                    .addComponent(jtxtAccount, javax.swing.GroupLayout.PREFERRED_SIZE, 28,
javax.swing.GroupLayout.PREFERRED_SIZE)))
            .addGap(28, 28, 28)

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(jLabel8)
                .addComponent(jTextField8, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
            .addGap(36, 36, 36)

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                .addComponent(jLabel9)
                .addComponent(jTextField9, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))

.addGroup(jPanel3Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                .addGroup(jPanel3Layout.createSequentialGroup()
            .addGap(34, 34, 34)
            .addComponent(jLabel10))
          .addGroup(javax.swing.GroupLayout.Alignment.TRAILING,
jPanel3Layout.createSequentialGroup()
            .addGap(26, 26, 26)
            .addComponent(jTextField10, javax.swing.GroupLayout.PREFERRED_SIZE, 30,
javax.swing.GroupLayout.PREFERRED_SIZE)))
        .addContainerGap(70, Short.MAX_VALUE))
    );

    jPanel4.setBorder(javax.swing.BorderFactory.createLineBorder(new java.awt.Color(0, 0, 0),
5));

    jLoanCalculate.setFont(new java.awt.Font("Tahoma", 1, 24)); // NOI18N
    jLoanCalculate.setText("Loan Calculator");
    jLoanCalculate.addActionListener(new java.awt.event.ActionListener() {
      public void actionPerformed(java.awt.event.ActionEvent evt) {
        jLoanCalculateActionPerformed(evt);
      }
    });

    jReset.setFont(new java.awt.Font("Tahoma", 1, 24)); // NOI18N
    jReset.setText("Reset");
    jReset.addActionListener(new java.awt.event.ActionListener() {
      public void actionPerformed(java.awt.event.ActionEvent evt) {
        jResetActionPerformed(evt);
      }
    });
```

```
        jExit.setFont(new java.awt.Font("Tahoma", 1, 24)); // NOI18N
        jExit.setText("Exit");
        jExit.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jExitActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout jPanel4Layout = new javax.swing.GroupLayout(jPanel4);
        jPanel4.setLayout(jPanel4Layout);
        jPanel4Layout.setHorizontalGroup(
            jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel4Layout.createSequentialGroup()
                .addGap(76, 76, 76)
                .addComponent(jLoanCalculate, javax.swing.GroupLayout.PREFERRED_SIZE, 264,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
                .addComponent(jReset, javax.swing.GroupLayout.PREFERRED_SIZE, 124,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(358, 358, 358)
                .addComponent(jExit, javax.swing.GroupLayout.PREFERRED_SIZE, 190,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(211, 211, 211))
        );
        jPanel4Layout.setVerticalGroup(
            jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(jPanel4Layout.createSequentialGroup()
        .addGap(46, 46, 46)

.addGroup(jPanel4Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
          .addComponent(jLoanCalculate, javax.swing.GroupLayout.PREFERRED_SIZE, 49,
javax.swing.GroupLayout.PREFERRED_SIZE)
          .addComponent(jReset, javax.swing.GroupLayout.PREFERRED_SIZE, 49,
javax.swing.GroupLayout.PREFERRED_SIZE)
          .addComponent(jExit, javax.swing.GroupLayout.PREFERRED_SIZE, 49,
javax.swing.GroupLayout.PREFERRED_SIZE))
        .addContainerGap(40, Short.MAX_VALUE))
    );

    javax.swing.GroupLayout layout = new javax.swing.GroupLayout(getContentPane());
    getContentPane().setLayout(layout);
    layout.setHorizontalGroup(
      layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
      .addGroup(layout.createSequentialGroup()
        .addContainerGap()
        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING,
false)
          .addGroup(layout.createSequentialGroup()
            .addComponent(jPanel3, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
            .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
            .addComponent(jPanel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
          .addComponent(jPanel4, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
          .addComponent(jPanel1, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
        .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
    );
    layout.setVerticalGroup(
      layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
      .addGroup(layout.createSequentialGroup()
        .addGap(26, 26, 26)
        .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE)
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
        .addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING,
false)
          .addComponent(jPanel3, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)
          .addComponent(jPanel2, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))
        .addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
        .addComponent(jPanel4, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,  javax.swing.GroupLayout.PREFERRED_SIZE)
        .addContainerGap(41, Short.MAX_VALUE))
    );

    pack();
  }// </editor-fold>

  private void jExitActionPerformed(java.awt.event.ActionEvent evt) {
    System.exit(0);
  }

  private void jLoanCalculateActionPerformed(java.awt.event.ActionEvent evt) {
```

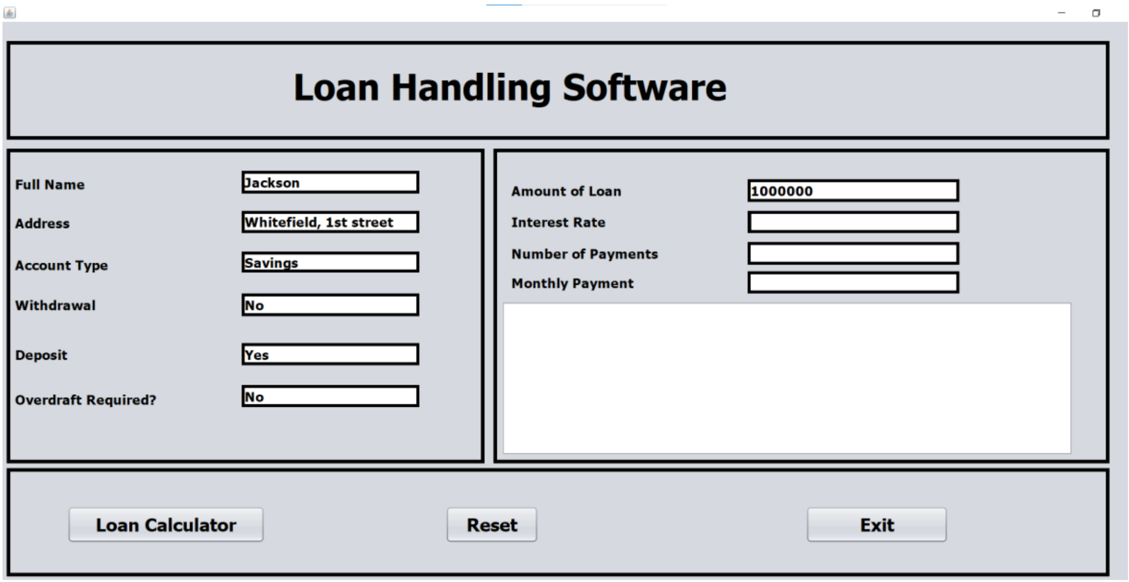
```
String iMonthPayment = String.format(jtxtMonthlyPayment.getText());

if (jtxtLoan.getText().equals(""))
{
   JOptionPane.showMessageDialog(null,"You must enter amount of loan to borrow",
           "Loan software",JOptionPane.INFORMATION_MESSAGE);
}
else
{
   loan = Double.parseDouble(jtxtLoan.getText());
    String Balance = String.format(jtxtLoan.getText());
}
//////////////////////////////////////////////////////////////////


if (jtxtInterest.getText().equals(""))
{
   JOptionPane.showMessageDialog(null,"You must enter Interest Rate",
           "Loan software",JOptionPane.INFORMATION_MESSAGE);
}
else
{
   interest = Double.parseDouble(jtxtInterest.getText());
    String iInterest = String.format(jtxtInterest.getText());
}
```

```
 ///////////////////////////////////////////////////////////////


if (jNumberofPayment.getText().equals(""))
{
   JOptionPane.showMessageDialog(null,"You must enter Number of Payment",
           "Loan software",JOptionPane.INFORMATION_MESSAGE);
}
else
{
   month = Double.parseDouble(jNumberofPayment.getText());
    String iMonth = String.format(jNumberofPayment.getText());
}

payment = loan + ((loan * interest)/100);

MonthlyPayment = payment/ month;
String PayMonth = String.format("%.2f",MonthlyPayment);
jtxtMonthlyPayment.setText(PayMonth);

name = String.format(jtxtName.getText());
Account = String.format(jtxtAccount.getText());

jLoanReport.append("\t\nLoan Handling Software:\n\n" +
"Customer's Name:\t " + name +
"\tAccount Type:\t " + Account +
    "Amount of Loan:\t\t Rs " + loan +
    "\nNumber of Payment:\t\t Rs "+ interest +
    "\nMonthly Payment:\t\t Rs "+ month +
    "\nNumber of Month for Payment:\t\t Rs "+ month +
            "\nPayment per Month:\t\t Rs "+ PayMonth +
    "\nTotal Loan Payment:\t\t Rs "+ payment +
    "\n\nThanks for using Karthik Surya's Loan Handling Software");





}

private void jResetActionPerformed(java.awt.event.ActionEvent evt) {
    jtxtLoan.setText("");
    jtxtInterest.setText("");
    jNumberofPayment.setText("");
    jtxtAccount.setText("");
    jtxtName.setText("");
}

private void jtxtNameActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
}

private void jtxtMonthlyPaymentActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    }

    private void jtxtInterestActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
    }

    /**
     * @param args the command line arguments
     */
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
        /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
         * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
         */
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(loan.class.getName()).log(java.util.logging.Level.SEVERE, null,
ex);
        } catch (InstantiationException ex) {
```

```
java.util.logging.Logger.getLogger(loan.class.getName()).log(java.util.logging.Level.SEVERE, null, 
ex);
        } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(loan.class.getName()).log(java.util.logging.Level.SEVERE, null, 
ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(loan.class.getName()).log(java.util.logging.Level.SEVERE, null, 
ex);
        }
        //</editor-fold>


        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new loan().setVisible(true);
            }
        });
    }


    // Variables declaration - do not modify
    private javax.swing.JButton jExit;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel10;
    private javax.swing.JLabel jLabel11;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JLabel jLabel5;
    private javax.swing.JLabel jLabel6;
    private javax.swing.JLabel jLabel7;
    private javax.swing.JLabel jLabel8;
    private javax.swing.JLabel jLabel9;
    private  javax.swing.JButton jLoanCalculate;
    private  javax.swing.JTextArea  jLoanReport;
    private javax.swing.JTextField jNumberofPayment;
    private javax.swing.JPanel jPanel1;
    private javax.swing.JPanel jPanel2;
    private javax.swing.JPanel jPanel3;
    private javax.swing.JPanel jPanel4;
    private javax.swing.JButton jReset;
    private javax.swing.JScrollPane jScrollPane1;
    private javax.swing.JTextField jTextField10;
    private javax.swing.JTextField jTextField5;
    private javax.swing.JTextField jTextField8;
    private javax.swing.JTextField jTextField9;
    private javax.swing.JTextField jtxtAccount;
    private javax.swing.JTextField jtxtInterest;
    private javax.swing.JTextField jtxtLoan;
    private javax.swing.JTextField jtxtMonthlyPayment;
    private javax.swing.JTextField jtxtName;
    // End of variables declaration
}
```

Chapter 5:

RESULTS

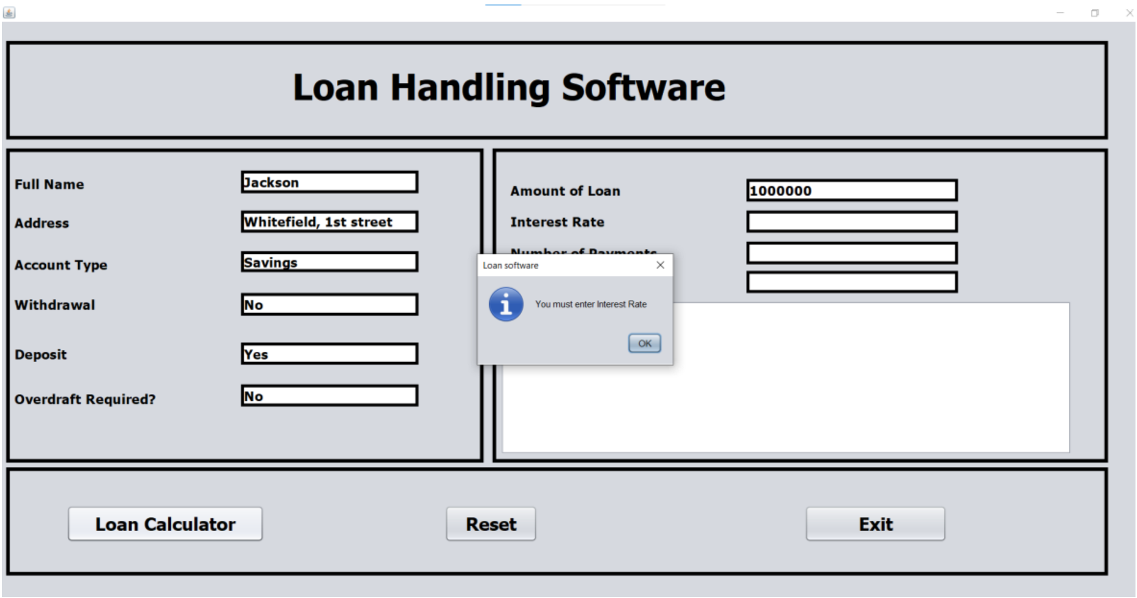


Loan Handling Software

Full Name	Jackson
Address	Whitefield, 1st street
Account Type	Savings
Withdrawal	No
Deposit	Yes
Overdraft Required?	No

Amount of Loan	1000000
Interest Rate	
Number of Payments	
Monthly Payment	

FIG 4.1



Loan Handling Software

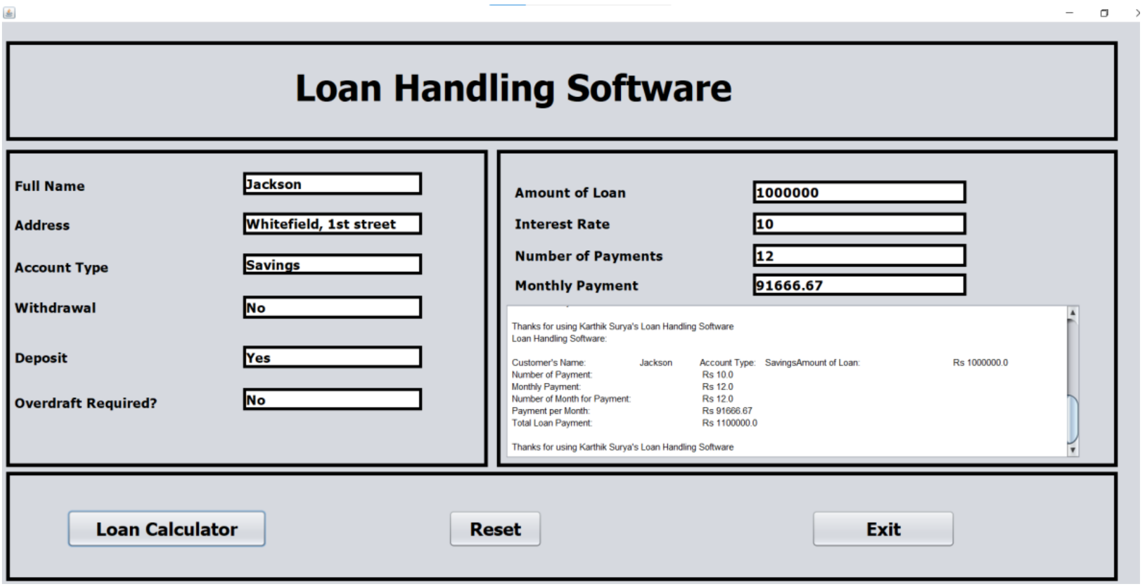
Full Name	Jackson
Address	Whitefield, 1st street
Account Type	Savings
Withdrawal	No
Deposit	Yes
Overdraft Required?	No

Amount of Loan	1000000
Interest Rate	
Number of Payments	

Loan software

You must enter Interest Rate

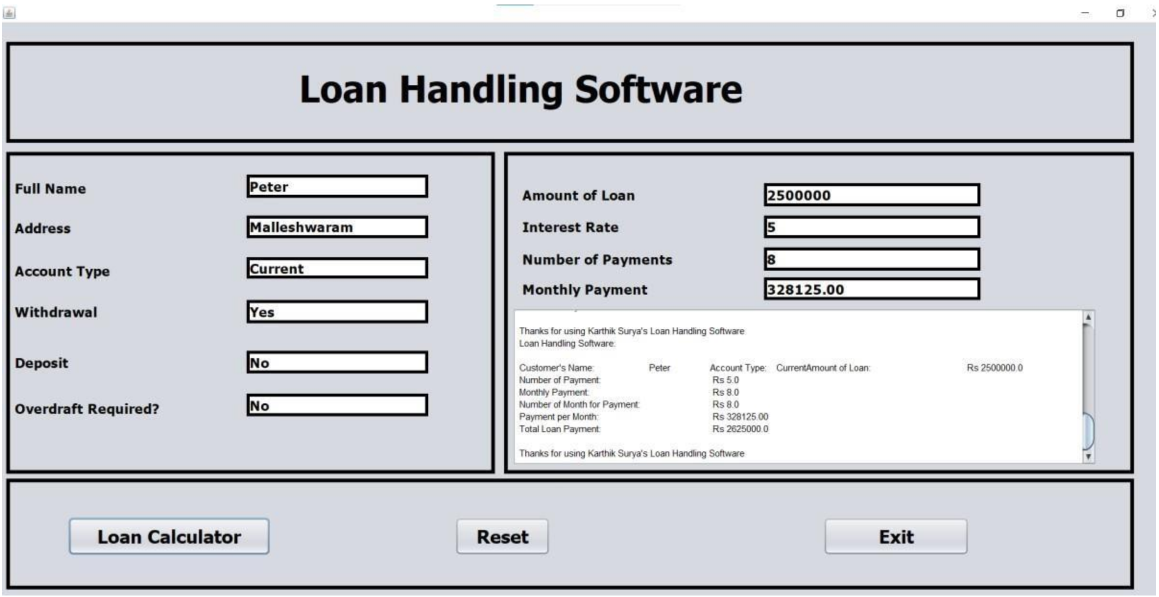
FIG 4.2



Full Name	Jackson
Address	Whitefield, 1st street
Account Type	Savings
Withdrawal	No
Deposit	Yes
Overdraft Required?	No
Amount of Loan	1000000
Interest Rate	10
Number of Payments	12
Monthly Payment	91666.67

```
Thanks for using Karthik Surya's Loan Handling Software
Loan Handling Software:

Customer's Name:          Jackson      Account Type:   SavingsAmount of Loan:              Rs 1000000.0
Number of Payment:                      Rs 10.0
Monthly Payment:                        Rs 12.0
Number of Month for Payment:            Rs 12.0
Payment per Month:                      Rs 91666.67
Total Loan Payment:                     Rs 1100000.0

Thanks for using Karthik Surya's Loan Handling Software
```

FIG 4.3



Full Name	Peter
Address	Malleshwaram
Account Type	Current
Withdrawal	Yes
Deposit	No
Overdraft Required?	No
Amount of Loan	2500000
Interest Rate	5
Number of Payments	8
Monthly Payment	328125.00

```
Thanks for using Karthik Surya's Loan Handling Software
Loan Handling Software:

Customer's Name:          Peter        Account Type:   CurrentAmount of Loan:              Rs 2500000.0
Number of Payment:                      Rs 5.0
Monthly Payment:                        Rs 8.0
Number of Month for Payment:            Rs 8.0
Payment per Month:                      Rs 328125.00
Total Loan Payment:                     Rs 2625000.0

Thanks for using Karthik Surya's Loan Handling Software
```

FIG 4.4

Chapter 6:

CONCLUSION

Loan Handling Software, the end of all the exertions in dire straits is here. Its software system that helps the user figure with the various banks and their branches simply. The Loan Handling Software reduces the number of manual information entry and offers large potency. It is simple to use and easy to explore around the beautiful UI application even if it's a core structure.

The program of its very friendly and may be simply employed by anyone. It conjointly decreases the number of your time taken to put in writing client details and different modules. In the end, we are able to say that the software system is playing all the tasks accurately and is doing the work that its created.

REFERENCES

- Bass, L., Clements, P. & Kazman, R. Software Architecture inPractice. 2nd ed.Boston: Addison Wesley. 2003
- Ivanecky, N. 2016. Crash Article in Agile Development. Medium. Accessed 2018. https://medium.com/open- product-management/crash-article-in-agile-development- da960861259e
- React. No date. Accessed 2018. https://reactjs.org
- React. No date. React- component. Accessed 2018. https://reactjs.org/docs/react-component.html
- JSX. 2014. JSX Specification. Accessed 2018. https://facebook.github.io/jsx/
- MDN web docs. No date. Introduction to the DOM. Accessed 2018.https://developer.mozilla.org/en-US/docs/Web/API/Document_Object_Model/Introduction
- Redux. No date. Accessed 2018. https://redux.js.org/
- GitHub 2017. Usage. Webpack. Accessed 2018. https://github.com/webpack/docs/wiki/usage
- Atlassian. No date. Accessed 2018. https://www.atlassian.com/software/jira
- VSCode. 2019. Accessed 2019. https://code.visualstudio.com/
- Geary D. 2016. Manage State with Redux-Part 1, IBMdeveloperWorks.
- Accessed 2018.https://developer.ibm.com/tutorials/wa-manage-state-with-redux-p1-david-geary/
- Crockford, D. JavaScript: The Good Parts. 1st ed. O’ReillyMedia: O’Reilly. 2008