COMPREHENSIVE ASSIGNMENT

OBJECT ORIENTED PROGRAMMING

(2CS302)

TOPIC: Develop the Java program for the home loan portal With Following Functionalities:

* Scan the user details from the user and store it to UserDetails.txt file.
* Scan the Loan Payment Details from the user and store it to LoanPaymentDetails.txt file.
* Display the summary details of loan repayment for each loan year-wise.
* Display the summary details of loan repayment for each loan year-wise month-wise.

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1. MAINSYSTEM.JAVA

This Class Contains main method And It Takes Input From the user of user details and bank transaction. The 2 Arrays of Object Of Class Account has been Created here to take seprate input of user details and transaction details.

It Also Calls the method to display all the details month wise and year wise .The Code is menu Driven.

CODE:

package Package;  
import java.util.Scanner;  
import java.io.\*;  
public class MainSystem {  
  
 public static void main(String[] args) throws IOException {  
 Scanner sc = new Scanner(System.*in*);  
 Account acc = new Account();//Object for Reading and Writing User Details  
 Account acc\_1=new Account();//Object for Reading and Writing Transaction Details  
 System.*out*.println("Welcome to Home Loan Portal!");  
 int choice;  
 while(true)  
 {  
 System.*out*.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");  
   
 System.*out*.println("1. Create New Account");  
   
 System.*out*.println("2.Add Transaction ");  
   
 System.*out*.println("3.Exit This Portal");  
   
 System.*out*.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");  
   
 System.*out*.println("Enter Your Choice");  
 choice = sc.nextInt();  
 if(choice==1) {  
 acc.add();//Adds User Details to the file  
 }  
 else if(choice==2)  
 {  
 String tmp;  
 System.*out*.println("Enter Your User Id:");  
 tmp=sc.next();  
 System.*out*.println("Enter Your Password:");  
 String tmp1=sc.next();  
 /\*  
 If the User id and password matches then only user can enter details in the file  
 traverse the whole file userdetails.txt and by string split method if the data matches then user can enter details  
 \*/  
 Boolean ok=false;  
 String s9="";  
 String[] words9;  
 FileReader fr9= null;  
 try {  
 fr9 = new FileReader("A:\\Comprehensive Assignment\\OOP\\UserDetails.txt");  
 } catch (FileNotFoundException e) {  
 e.printStackTrace();  
 }  
 BufferedReader br9 = new BufferedReader(fr9);  
 while(true)  
 {  
 try {  
 if ((s9 = br9.readLine()) == null) break;  
 } catch (IOException e) {  
 e.printStackTrace();  
 }  
 words9=s9.split("\\|");  
 if(words9[0].equals(tmp)&&words9[2].equals(tmp1))  
 {  
 ok=true;  
 }  
 }  
  
 if(ok==true)  
 {  
 System.*out*.println("User Validated Successfully");  
 System.*out*.println("Now You Can Deposit Your Money");  
 acc\_1.add\_Payment();  
 }  
 else  
 {  
 System.*out*.println("Wrong Userid Or Password");  
 }  
 }  
 else if(choice==3)  
 break;  
 }  
  
 acc.write\_txt();  
 acc\_1.write\_Payment\_Details();  
  
 Loan\_Payment lp = new Loan\_Payment();  
 int choice1;  
 while(true)  
 {  
 System.*out*.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");  
   
 System.*out*.println("1.Year Wise Transaction");  
   
 System.*out*.println("2.Monthly Transaction");  
   
 System.*out*.println("3.Exit");  
   
 System.*out*.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");  
   
 System.*out*.println("Enter Your Choice");  
 choice1= sc.nextInt();  
 if(choice1==1)  
 lp.Year\_wise();  
 //Prints All the Transactions Yearwise  
 else if(choice1==2)  
 {  
 lp.month\_wise();  
 //Prints All the Transactions Of The Year Month Wise  
 }  
 else  
 break;  
 }  
  
 }  
  
}

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1. ACCOUNT.JAVA

This Class Contains Arrays Of Objects of Class Loan\_Payment .This Class Contains methods like Add User Details, Payment Details, and Write method which is to write user details in the file

package Package;  
  
public class Account  
{  
 Loan\_Payment[] account = new Loan\_Payment[50];  
 Loan\_Payment[] account\_1 =new Loan\_Payment[50];  
 int n=0;//Keeping The Track Of Number Of Records  
 int n1=0;//Keeping The Record Of Payment  
 /\*  
 METHOD TO ADD USER DETAILS IN TXT FILE  
 \*/  
 void add()  
 {  
 account[n]=new Loan\_Payment();  
 System.*out*.println("Enter Detalis for Account "+(n+1));  
 account[n++].scan(); //calling scan() function to scan details from user  
 System.*out*.println();  
   
 }  
 //METHOD TO ADD  
 void add\_Payment()  
 {  
 account\_1[n1]=new Loan\_Payment();  
 System.*out*.println("Enter Payment Details for Account ");  
 account\_1[n1++].scan\_Payment\_Details(); //calling scan() function to scan details from user  
 System.*out*.println();   
 }  
 void write\_Payment\_Details()  
 {  
 for(int i=0;i<n1;i++)  
 {  
 account\_1[i].write\_Payment\_Details();  
 }  
 }  
   
 void display()  
 {  
 if(this.n == 0)  
 {  
 System.*out*.println("No Accounts Available !\n");  
 return;  
 }  
 //loop to call display function in Person class through Atm\_Bank\_Interface2 object   
 for(int i=0;i<n;i++)  
 {  
 System.*out*.println("|| Account "+(i+1)+" Details ||");  
 account[i].display(i+1);  
 System.*out*.println();  
 System.*out*.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");  
 }  
 System.*out*.println();   
 }  
   
   
 void write\_txt()  
 {  
 for(int i=0;i<n;i++)  
 {  
 account[i].write();  
 }  
 }  
   
}

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1. PERSON CLASS:

This Class Contains Scan Method And Write Method to take input from the user Write Contents in userdetails.txt file

CODE:

package Package;  
import java.util.Scanner;  
import java.io.\*;  
public class Person {  
 Scanner sc = new Scanner(System.*in*);  
 //Initializing variables required for storing Account Holder Details  
 String userid;   
 String name;   
 String password;  
   
 double total\_loan;   
 double remaining\_loan;   
 int n=0;//Keeping The Track Of Number Of Records  
 int n1=0;//Keeping The Record Of Payment  
 //CONSTRUCTOR TO INITIALIZE ALL THE VALUE TO ZERO  
 Person()  
 {  
 this.userid="";  
 this.name="";  
 this.password="";  
 this.total\_loan=0;  
 this.remaining\_loan=0;  
 }  
 // SCANNING ALL THE DETAILS FROM THE USER  
 void scan()  
 {  
 System.*out*.println("Enter The Name ");  
 this.name=sc.nextLine();  
   
 System.*out*.println("Enter Your Userid:");  
 this.userid=sc.nextLine();  
   
 System.*out*.println("Enter The Password You Want To Keep:");  
 this.password=sc.nextLine();  
   
 System.*out*.println("Enter The Total Amount Of Loan To Be Taken:");  
 this.total\_loan=sc.nextInt();  
   
 System.*out*.println("Enter The Remaining Amount To Be Paid:");  
 this.remaining\_loan=sc.nextInt();  
 }  
 void display(int n)   
 {  
 System.*out*.println("The Account Details Of User"+n+1);  
 System.*out*.println("The Name Of The Account Holder"+this.name);  
 System.*out*.println("The User ID :"+this.userid);  
 System.*out*.println("Home Loan Amount"+this.total\_loan);  
 System.*out*.println("Remaining Loan "+this.remaining\_loan);   
 }  
 void write()   
 { String name\_1=this.name;  
 String userid\_1=this.userid;  
 String password\_1=this.password;  
 double total\_loan\_1=this.total\_loan;  
 double remaining\_loan\_1=this.remaining\_loan;  
 String d=userid\_1+'|'+name\_1+'|'+password\_1+'|'+total\_loan\_1+'|'+remaining\_loan\_1+"\n";  
   
 try{  
 BufferedWriter f= new BufferedWriter(new FileWriter("A:\\Comprehensive Assignment\\OOP\\UserDetails.txt",true));  
 f.write(d);  
 f.close();  
 }  
 catch(Exception e) //Exception if file is not found   
 {   
 System.*out*.println("Error!! File not found");  
 }   
  
 }  
  
   
}

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1. LOAN\_PAYMENT.JAVA

This Class Is A Sub Class Of Class Person .It has methods like Scan\_payment\_details which scans all the transactions after validating the userid and password. Write\_payment\_details writes all the transactions In The File Loan\_Payment\_Details.txt.

The Year wise method prints all the details of all the transactions made by a particular user in that year

The Month Wise Method prints all the details of the transactions made in all the months of a particular year entrered by the user.

CODE:

package Package;  
import java.io.\*;  
import java.util.Arrays;  
import java.util.Scanner;  
public class Loan\_Payment extends Person  
{  
 Scanner sca = new Scanner(System.*in*);  
 int date;  
 int month;  
 int year;  
 int deposit;  
 String Payment\_Description;  
 String userid\_1;  
 //CONSTRUCTOR METHOD TO INITIALIZE ALL THE VALUES TO EITHER ZERO OR NULL  
 void Load\_Payment()  
 {  
 this.userid\_1="";  
 this.deposit=0;  
 this.Payment\_Description="";  
 this.date=0;  
 this.month=0;  
 this.year=0;  
 }  
 //SCAN THE LOAN REPAYMENT DETAILS FROM THE USER  
 void scan\_Payment\_Details()  
 {  
 System.*out*.println("Enter The User ID ");  
 this.userid\_1=sca.nextLine();  
  
 System.*out*.println("Enter The Payment Description:");  
 this.Payment\_Description=sca.nextLine();  
  
 System.*out*.println("Enter The Amount You Will Deposit");  
 this.deposit=sca.nextInt();  
  
 System.*out*.println("Enter The Date:");  
 this.date=sca.nextInt();  
  
 System.*out*.println("Enter The Month:");  
 this.month=sca.nextInt();  
  
 System.*out*.println("Enter The Year:");  
 this.year=sca.nextInt();  
 }  
 /\*  
 This Method is used to Write The Loan Repayment Details In The FILE LOAN PAYMENT DETAILS  
 \*/  
 void write\_Payment\_Details()  
 {  
  
 int date\_1=this.date;  
 int month\_1=this.month;  
 int year\_1=this.year;  
 int deposit\_1=this.deposit;  
 String Payment\_Description\_1=this.Payment\_Description;  
 String userid\_2=this.userid\_1;  
 Boolean ok=false;  
 String s7="";  
 String[] words7;  
 /\*  
 THIS CHECKS IF THE USER ID IS PRESENT OR NOT , IF THE USER ID AND PASSWORD IS MATCHED THEN ONLY THE DETAILS  
 WILL BE WRITTEN IN TXT FILE  
 \*/  
 FileReader fr7= null;  
 try {  
 fr7 = new FileReader("A:\\Comprehensive Assignment\\OOP\\UserDetails.txt");  
 } catch (FileNotFoundException e) {  
 e.printStackTrace();  
 }  
 BufferedReader br7 = new BufferedReader(fr7);  
 while(true)  
 {  
 try {  
 if ((s7 = br7.readLine()) == null) break;  
 } catch (IOException e) {  
 e.printStackTrace();  
 }  
 words7=s7.split("\\|");  
 if(words7[0].equals(userid\_2))  
 {  
 ok=true;  
 }  
 }  
 /\*  
 IF THE PARTICULAR USER ID AND PASSSWORD DETAILS MATCHES THEN OK=TRUE AND THE DETAILS WILL BE WRITTEN IN  
 THE TXT FILE else the details will not be written in transaction.txt file  
 \*/  
 if(ok==true)  
 {  
 //Adding All the details in the file  
 String d=userid\_2+'|'+deposit\_1+'|'+Payment\_Description\_1+'|'+date\_1+'|'+month\_1+'|'+year\_1+'\n';  
 try{  
 BufferedWriter f= new BufferedWriter(new FileWriter("A:\\Comprehensive Assignment\\OOP\\LoanPaymentDetails.txt",true));  
 f.write(d);  
 f.close();  
 }  
 catch(Exception e) //Exception if file is not found  
 {  
 System.*out*.println("Error!! File not found");  
 }  
 }  
 else  
 {  
 System.*out*.println("No Data Exists For Such Userid");  
 }  
  
  
 }  
 /\*  
 THIS METHOD PRINTS ALL THE USERS DATA THAT HAVE DEPOSITED MONEY IN THAT PARTICULAR YEAR  
 \*/  
 public void Year\_wise() throws IOException  
 {  
 Scanner sca = new Scanner(System.*in*);  
 System.*out*.println("Enter The Year For Which You Want To See Transaction:");  
 String year\_r = sca.next();  
 /\*  
 FOR PRINTING ALL THE USER DATA ACCORDING TO THAT DATA STORE IN THE FILE USER.TXT  
 \*/  
 /\*  
 FOR FINDING ALL THE NUMBER OF USERS WE WILL ITERATE THROUGH USERDETAILS.TXT FILE AND  
 ITERATE OVER ALL THE USER AND FOR EVERY USER PRINT ALL THE DETAILS YEAR WISE  
 FOR THIS PURPOSE WE HAVE TO ITERATE THROUGH TWO FILES OUTER FILE USERDETAILS AND INNER FILE FOR TRANSACTIONDETAILS  
 WE WILL USE SPLIT STRING METHOD TO GET USERID AND TRANSACTION DETAILS  
 \*/  
 FileReader fr1=new FileReader("A:\\Comprehensive Assignment\\OOP\\UserDetails.txt");/\*openingThe File User Details.txt\*/  
 String s1,s2,s3;  
 String[] words1;//Array of strings to split the string  
 String s;  
 String[] words;  
 BufferedReader br1 = new BufferedReader(fr1);  
  
 while((s1=br1.readLine()) != null)  
 {  
 words1=s1.split("\\|");  
 s2=words1[3];//total loan  
 s3=words1[4];//remaining amount  
 FileReader fr=new FileReader("A:\\Comprehensive Assignment\\OOP\\LoanPaymentDetails.txt");  
 /\* Opening the Loan Payment Details file to print all the transaction of a  
 current particular person from user details.txt\*/  
 BufferedReader br = new BufferedReader(fr);  
 while ((s= br.readLine())!=null) {  
 words = s.split("\\|");  
  
 if (words[0].equals(words1[0])) {  
 for (String word : words) {  
 if (word.equals(year\_r)) {  
 System.*out*.println("Year: " + words[5]);  
 System.*out*.println("Name: " + words1[1]);  
 System.*out*.println("Amount Deposited: " + words[1]);  
 System.*out*.println("TOTAL LOAN:"+s2);  
 System.*out*.println("Previous Remaining Amount"+s3);  
 int amount=Integer.*parseInt*(s3)-Integer.*parseInt*(words[1]);  
 /\* Integer.parseInt Converts the String Into Integers\*/  
 System.*out*.println("CURRENT REMAINING LOAN PAYMENT"+amount);  
 System.*out*.println(Arrays.*toString*(words));  
 }  
 }  
 }  
 }  
 }  
  
 }  
 /\*  
 THIS METHOD PRINTS ALL THE AMOUNT COLLECTED IN THE PARTICULAR YEAR MONTH WISE  
 \*/  
 public void month\_wise() throws IOException  
 {  
  
 System.*out*.println("Enter The Year For Which You Want To See All The Months Transaction:");  
 String year\_r = sca.next();  
 //TAKING THE INPUT FROM THE USER FOR WHICH YEAR'S DATA TO BE PRINTED ON CONSOLE  
 FileReader fr=new FileReader("A:\\Comprehensive Assignment\\OOP\\LoanPaymentDetails.txt");  
 String s;  
 int[] arr=new int [13];  
 for(int i=0;i<13;i++)  
 {  
 arr[i]=0;  
 }//INITIALISING THE ARRAY AS ZERO  
 String[] words;  
 /\*  
 ITERATE THROUGH TRANSACTIONDETAILS.TXT FILE AND KEEP THE TRACK OF PARTICULAR MONTH AND YEAR AND  
 ADD THEM TO GET ALL THE NECESSARY DETAILS  
 \*/  
 BufferedReader br = new BufferedReader(fr);  
 while ((s= br.readLine())!=null)  
 {  
 words=s.split("\\|");  
 for (String word: words)  
 {  
 if (word.equals(year\_r))  
 {  
 //System.out.println(Arrays.toString(words));  
 int k=Integer.*parseInt*(words[1]);  
 int index=Integer.*parseInt*(words[4]);  
 System.*out*.println(index+" "+k);  
 arr[index]+=k;  
 }  
 }  
 }  
 //PRINTING THE AMOUNT DEPOSITED YEAR WISE  
 System.*out*.println("Now Priting The Amount Deposited Year :"+year\_r);  
 int sum=0;  
 System.*out*.println("Collection For January Month:"+arr[1]);sum+=arr[1];  
 System.*out*.println("Collection For February Month:"+arr[2]);sum+=arr[2];  
 System.*out*.println("Collection For March Month:"+arr[3]);sum+=arr[3];  
 System.*out*.println("Collection For April Month:"+arr[4]);sum+=arr[4];  
 System.*out*.println("Collection For May Month:"+arr[5]);sum+=arr[5];  
 System.*out*.println("Collection For June Month:"+arr[6]);sum+=arr[6];  
 System.*out*.println("Collection For July Month:"+arr[7]);sum+=arr[7];  
 System.*out*.println("Collection For August Month:"+arr[8]);sum+=arr[8];  
 System.*out*.println("Collection For September Month:"+arr[9]);sum+=arr[9];  
 System.*out*.println("Collection For October Month:"+arr[10]);sum+=arr[10];  
 System.*out*.println("Collection For November Month:"+arr[11]);sum+=arr[11];  
 System.*out*.println("Collection For December Month:"+arr[12]);sum+=arr[12];  
  
 System.*out*.println("Total Deposition Of Money In The Year "+year\_r+":"+sum);  
 }  
  
  
}

5.User\_Details.txt:All the Data Of a particular user like username,id,password,total loan is printed in this file seprated by pipe symbol.

aayush1|AayushKansara|aayushpass|89000.0|78456.0

shivam2|ShivamPatel|shivampass|87654.0|78000.0

aarav3|AaravSharma|aaravpass|100500.0|90000.0

sneha|SnehaGupta|snehapassword|25000.0|21364.0

dipen18|Dipenpatel|dipenpassword|65000.0|49000.0

In This Project All the main concepts of java like Inheritance, File Handling, Exception Handling, has been implemented Successfully.

6.Transactions\_Details.txt:All the transactions made is displayed in this file

aayush1|12000|April Payment 2020|6|4|2020

aayush1|23150|May Payment 2019|6|5|2019

shivam2|8540|April Payment 2020|4|4|2020

shivam2|8950|JUly Payment 2020|2|7|2020

aarav3|5120|December Payment 2020|12|12|2020

sneha|2310|October Payment 2020|12|10|2020

sneha|5641|December Payment 2019|2|12|2019

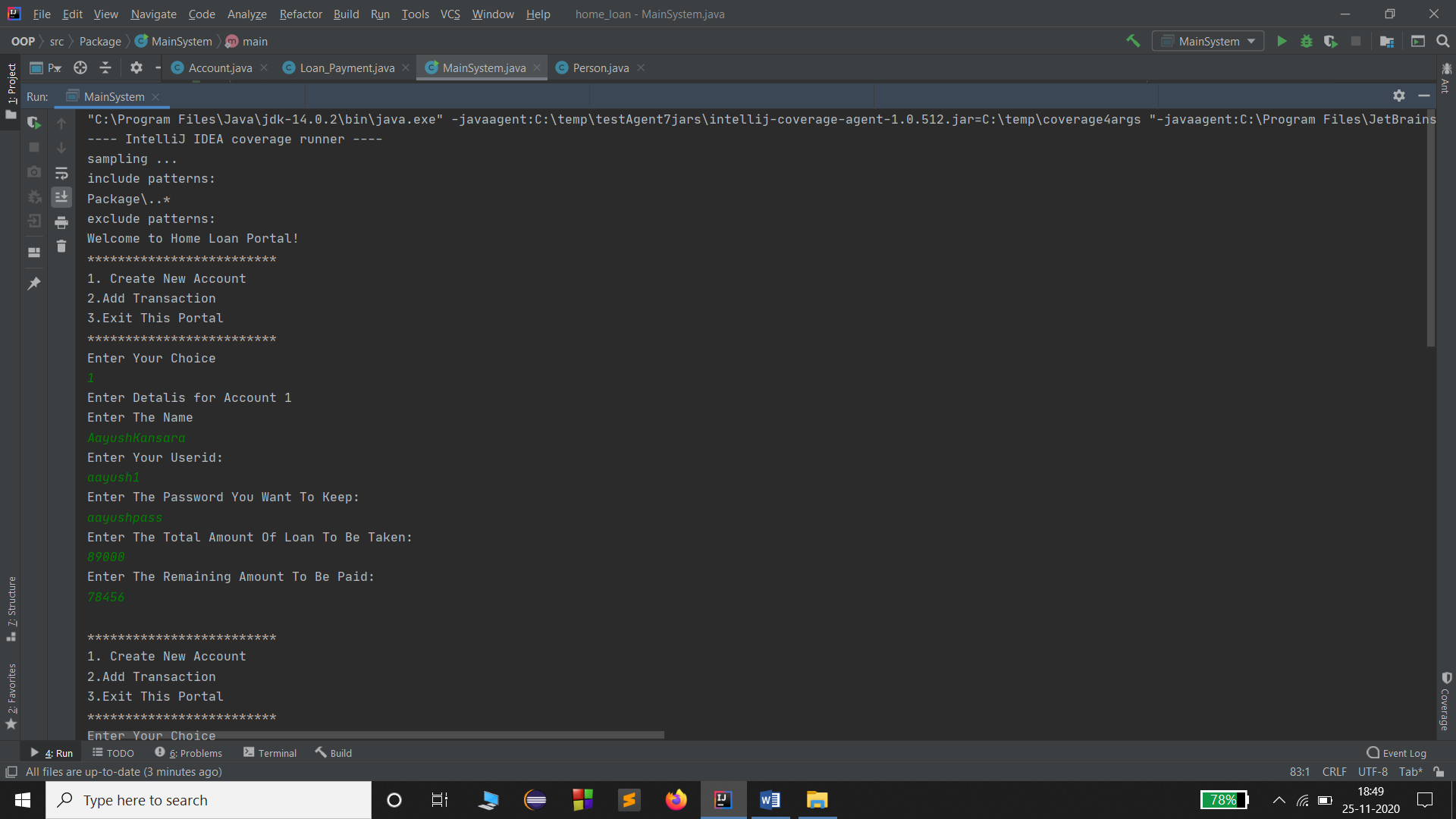
dipen18|1230|January Payment 2019|12|1|2020

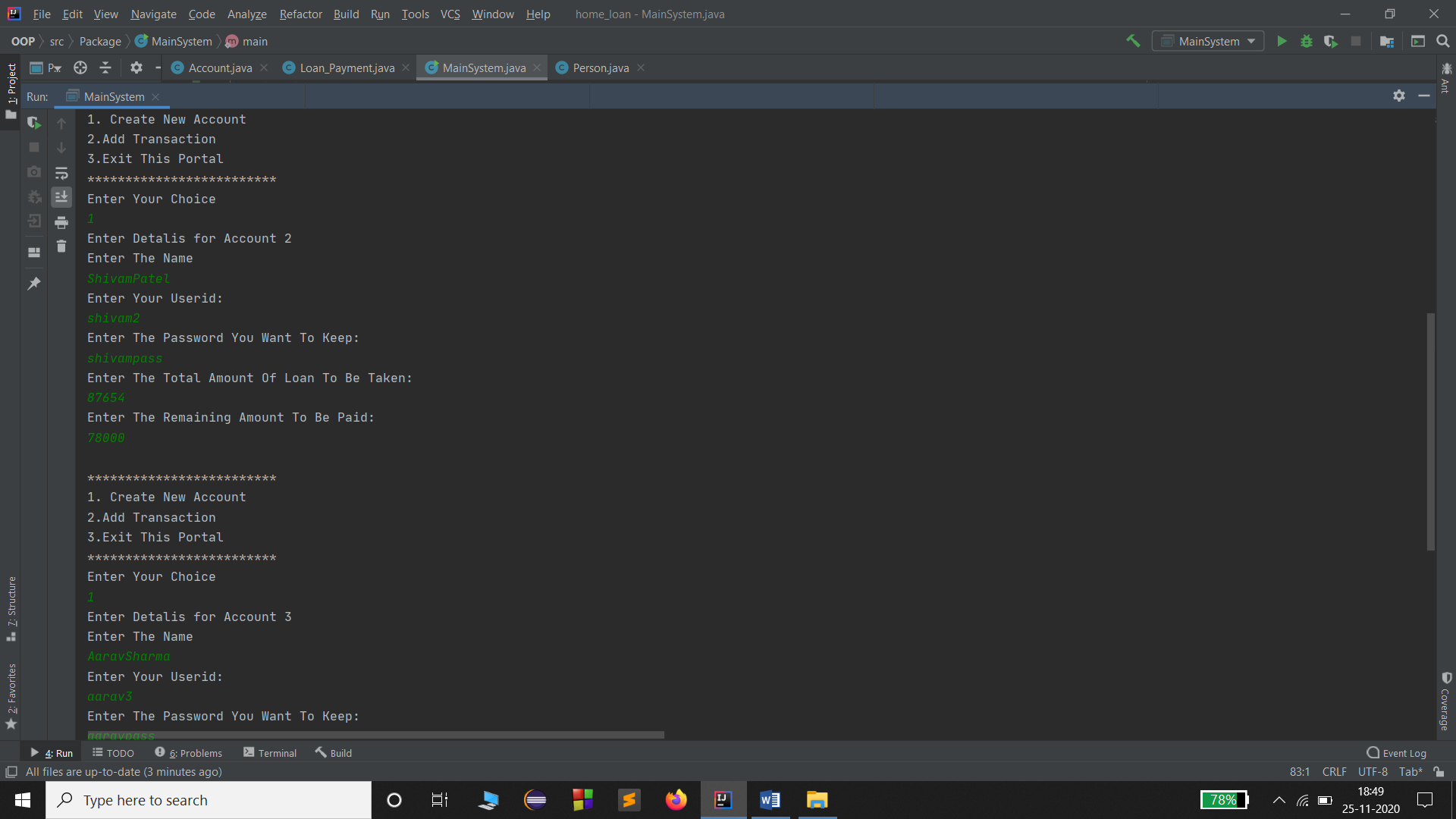
dipen18|6541|March Payment 2020|3|3|2020

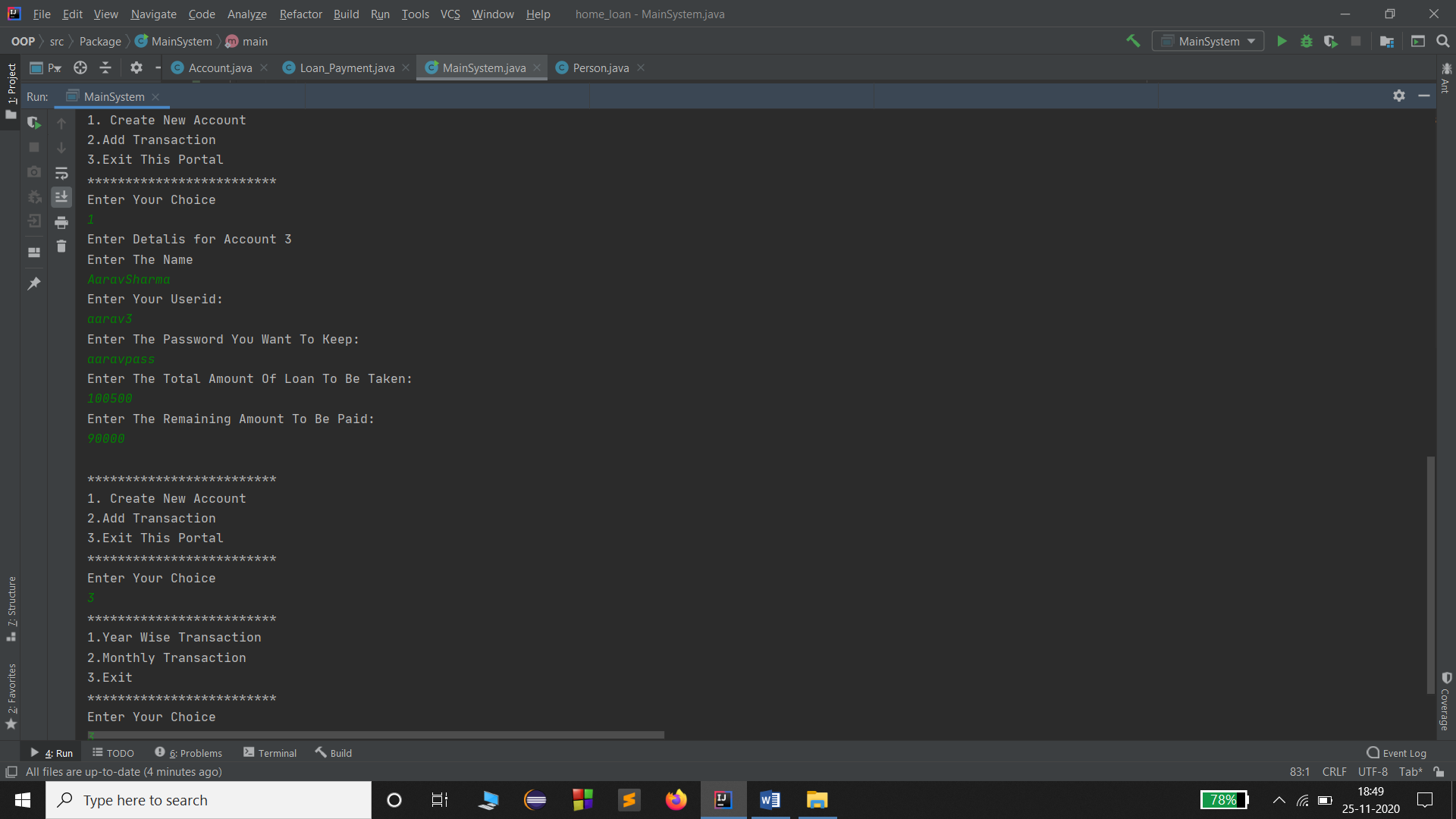
----------------------------------END OF CODE------------------------------

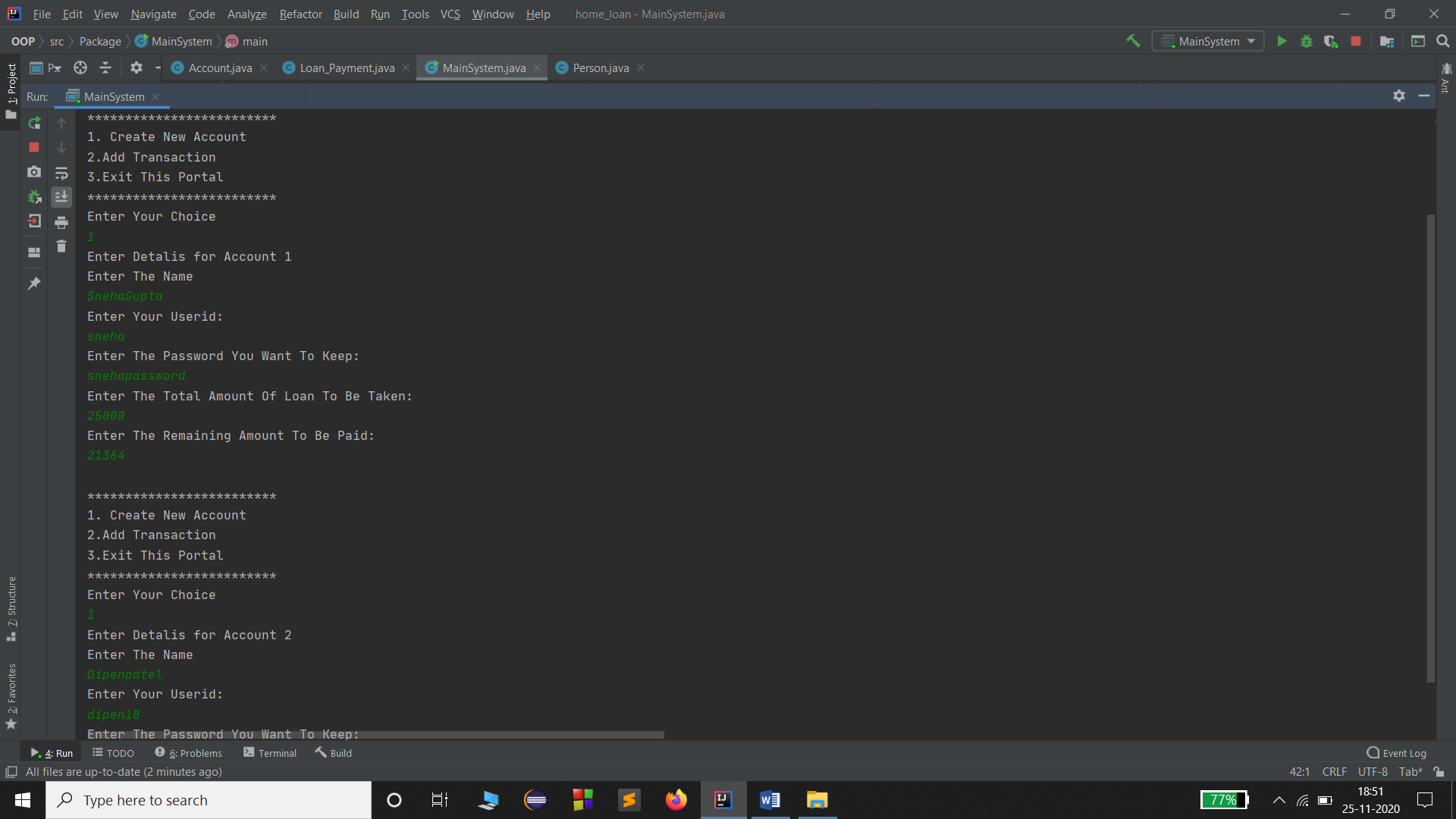
All the Important Concepts Of OOP like inheritance ,exception handling ,inheritance ,file handling has been implemented successfully

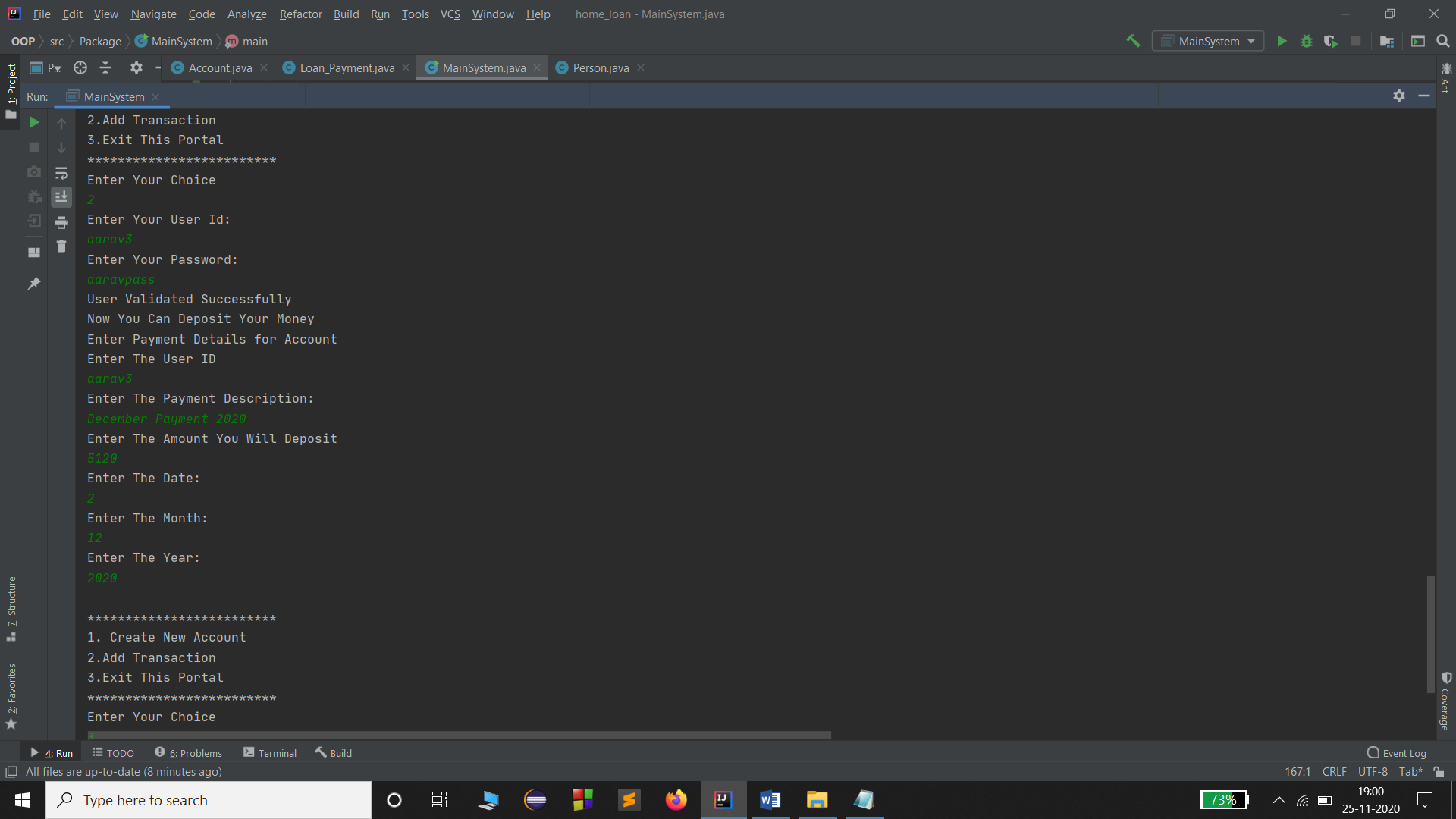
SCREENSHOTS:

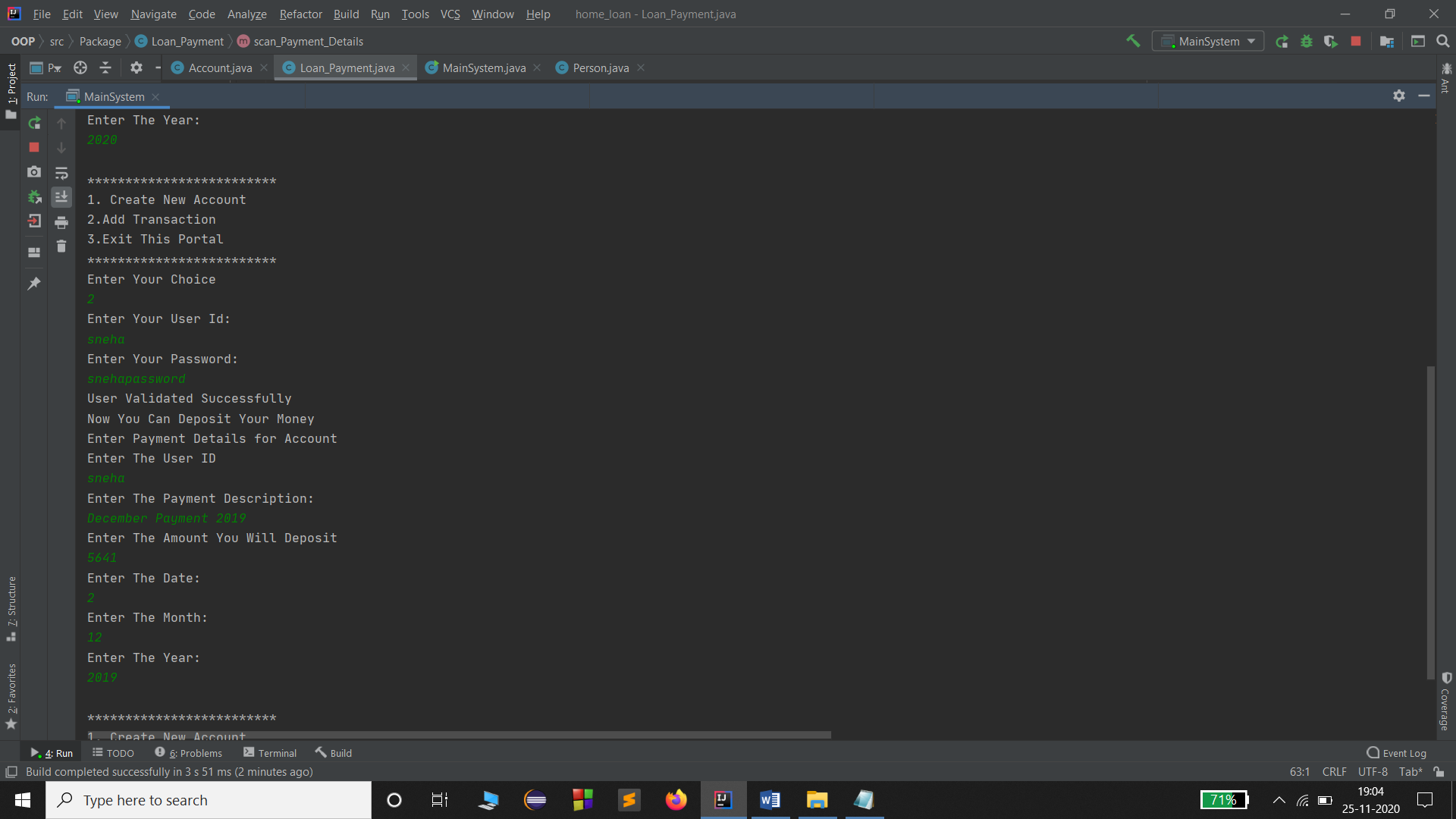


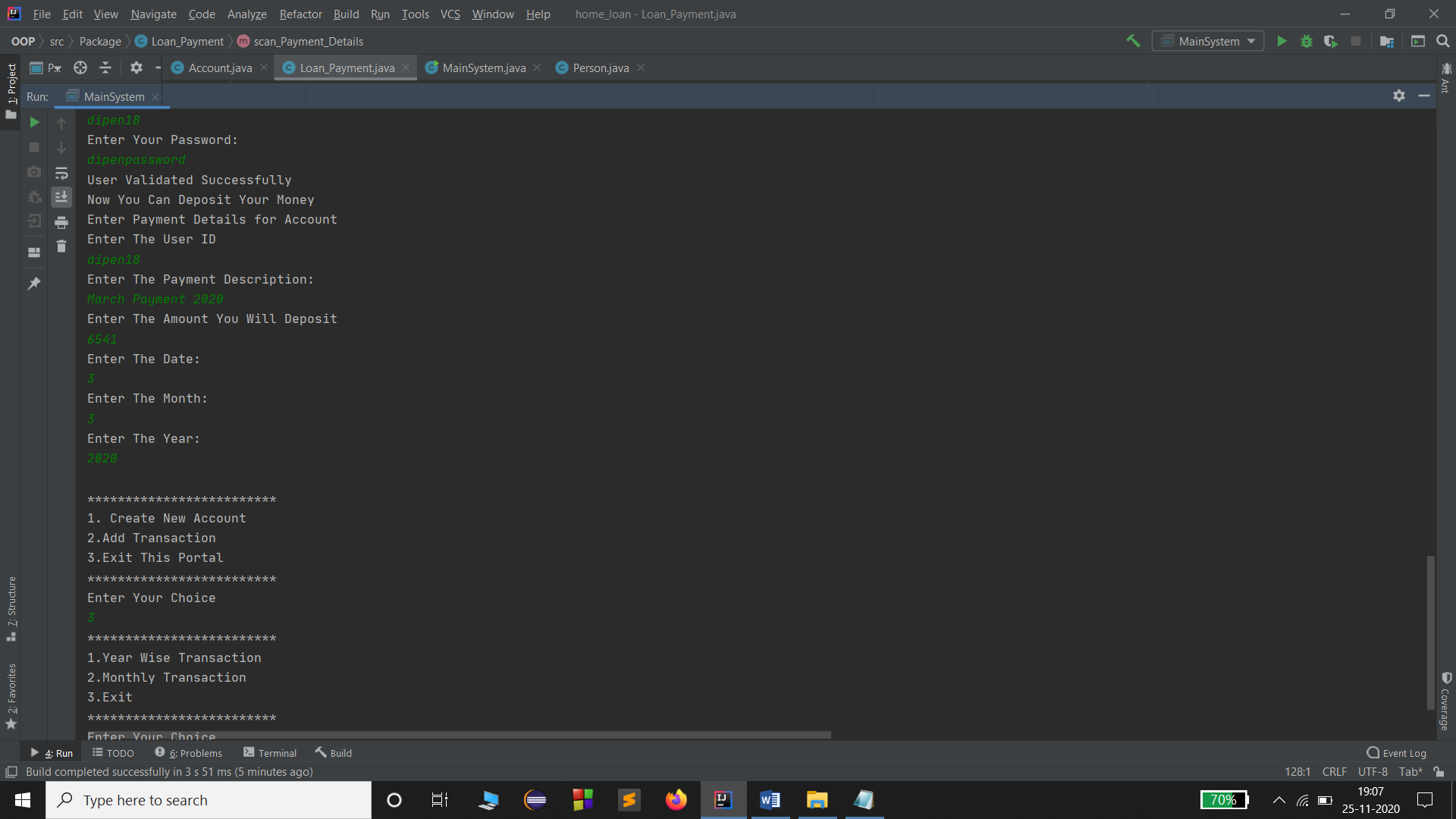


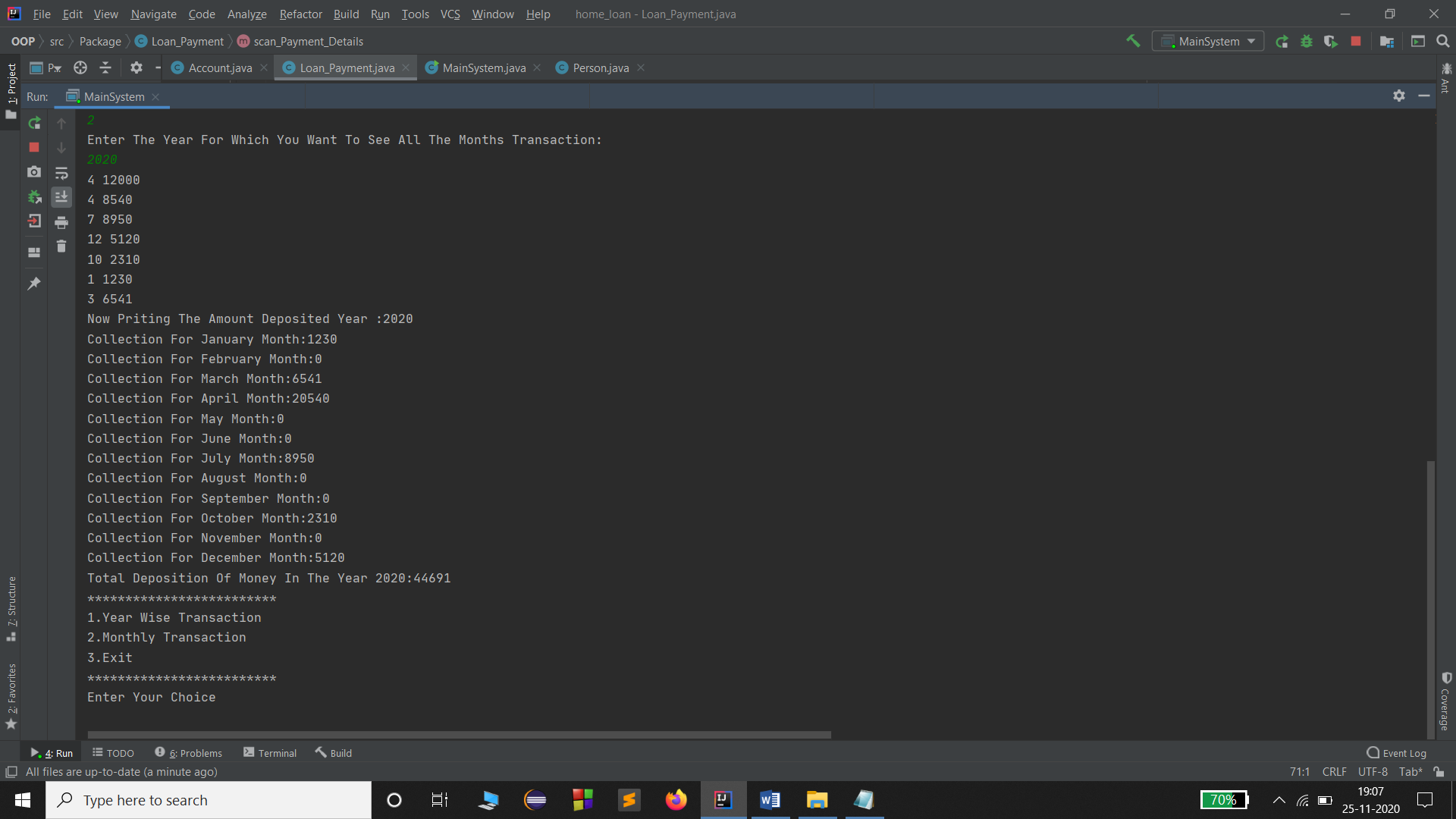


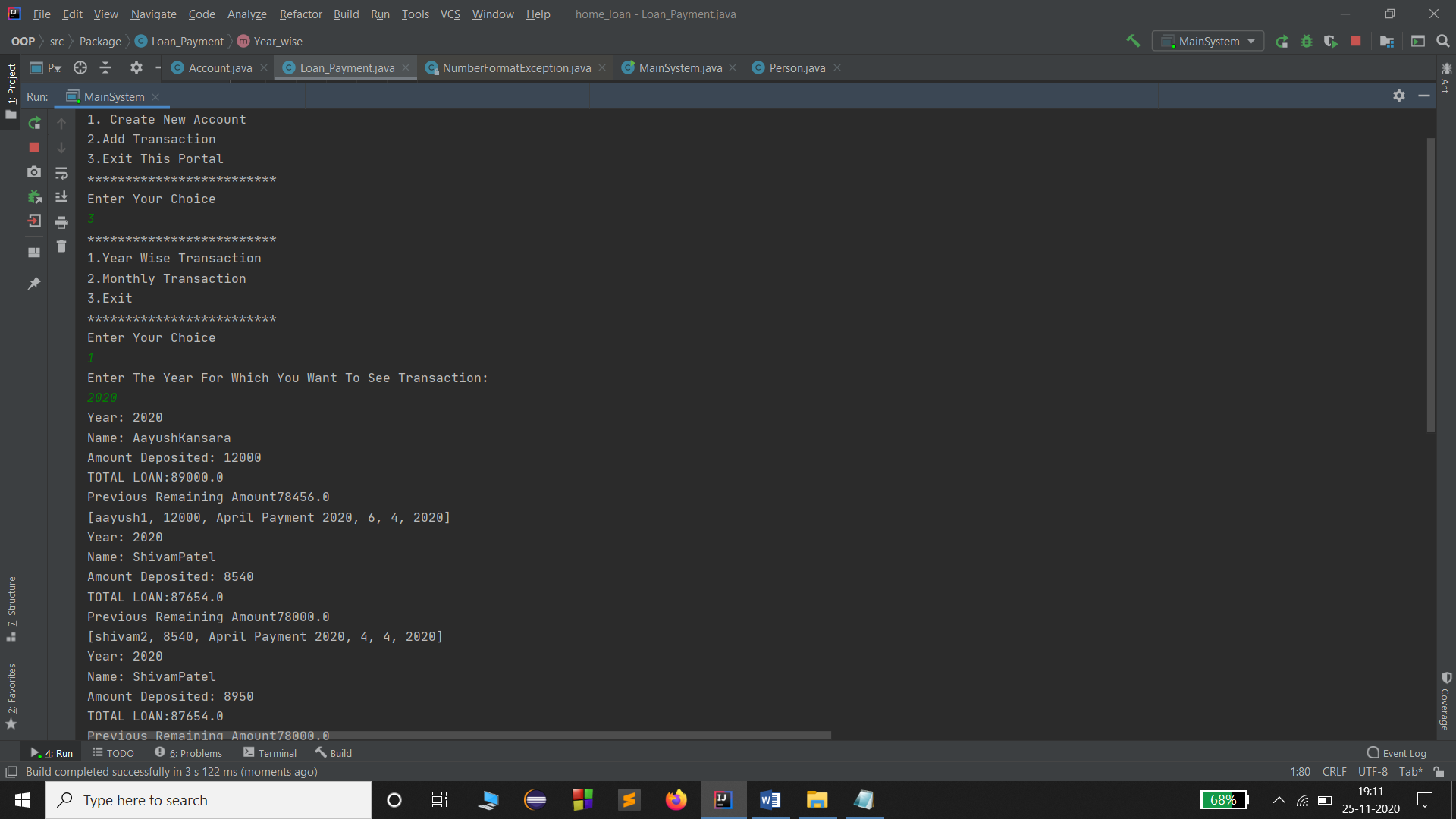


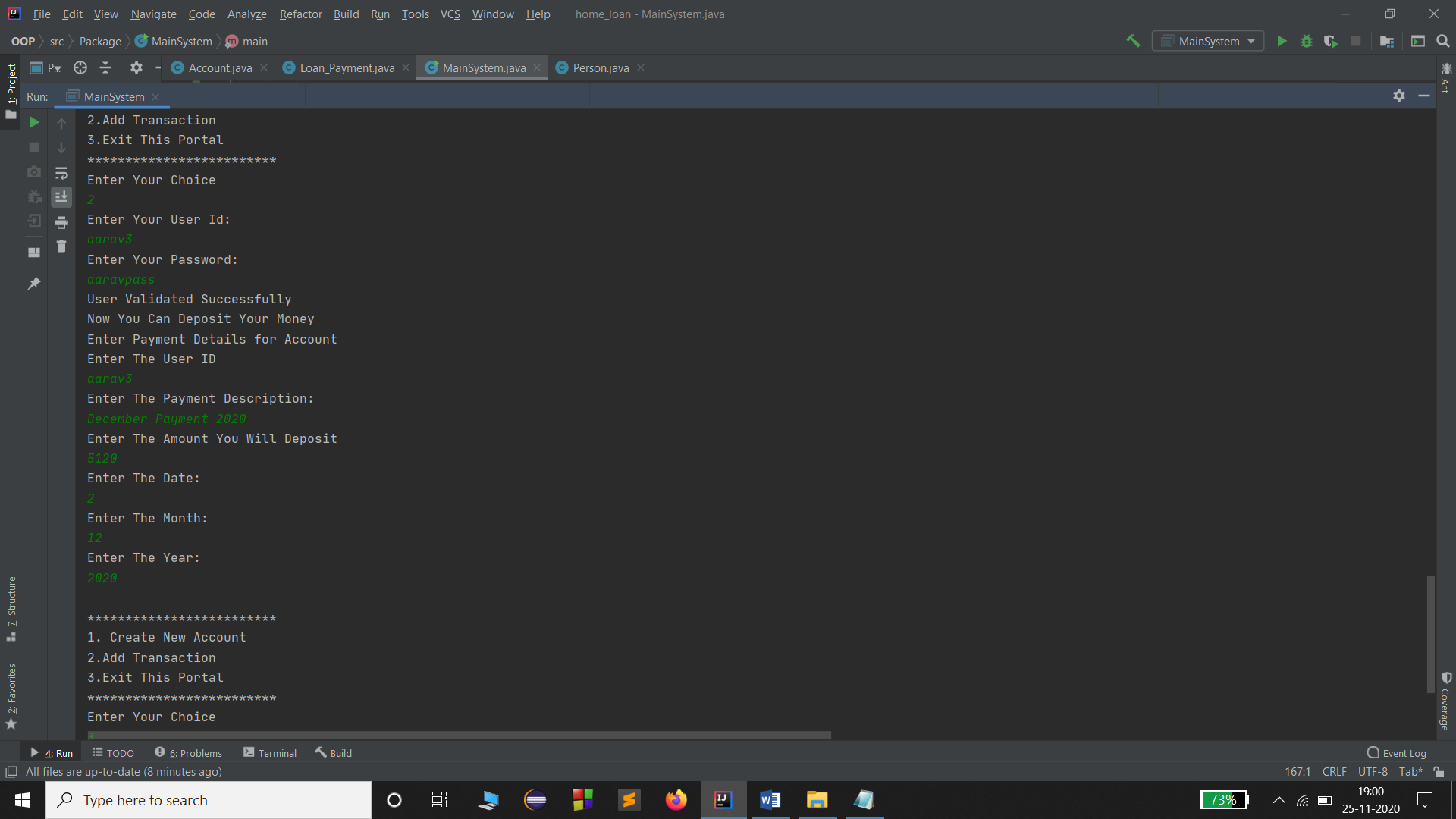


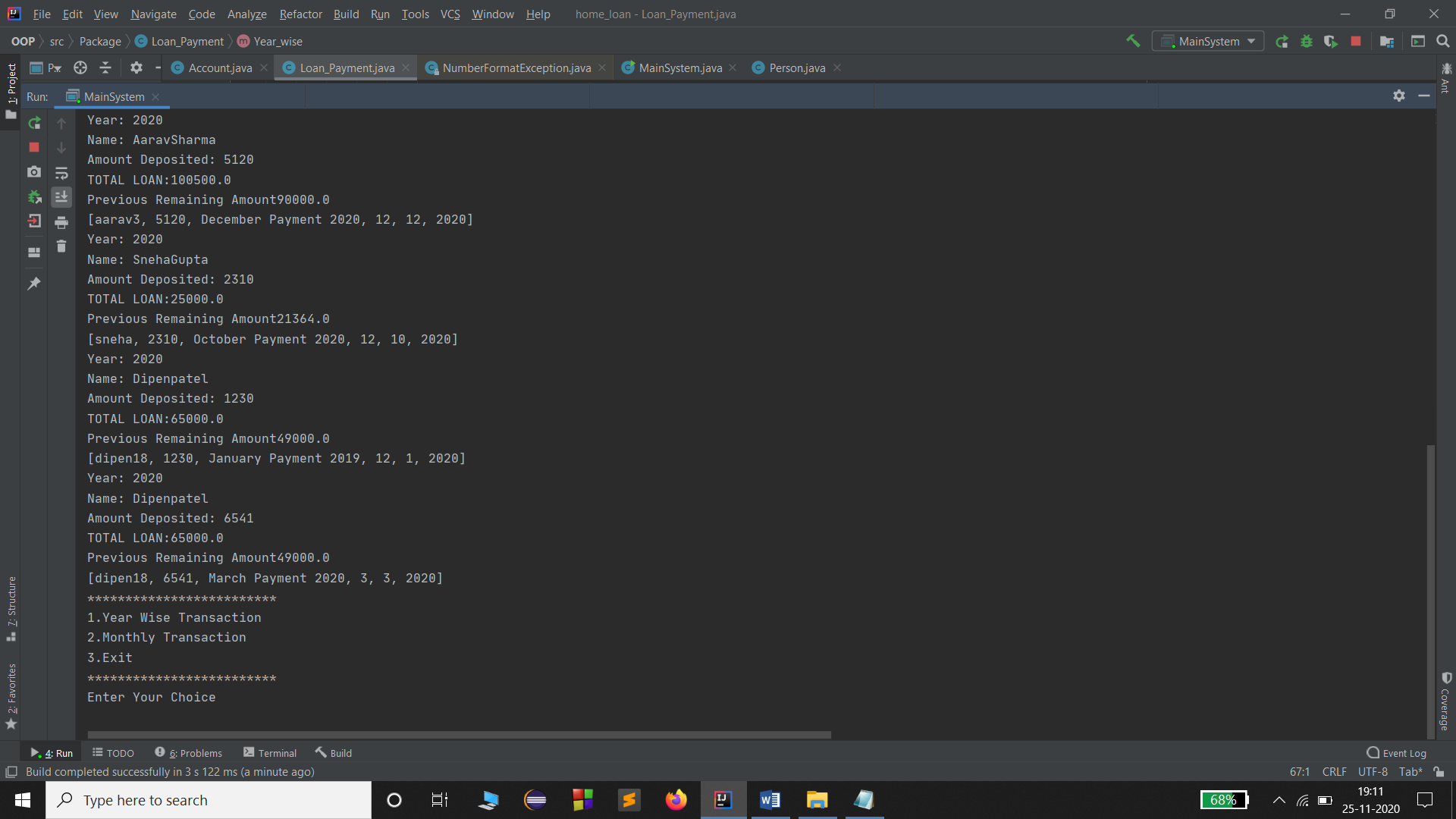
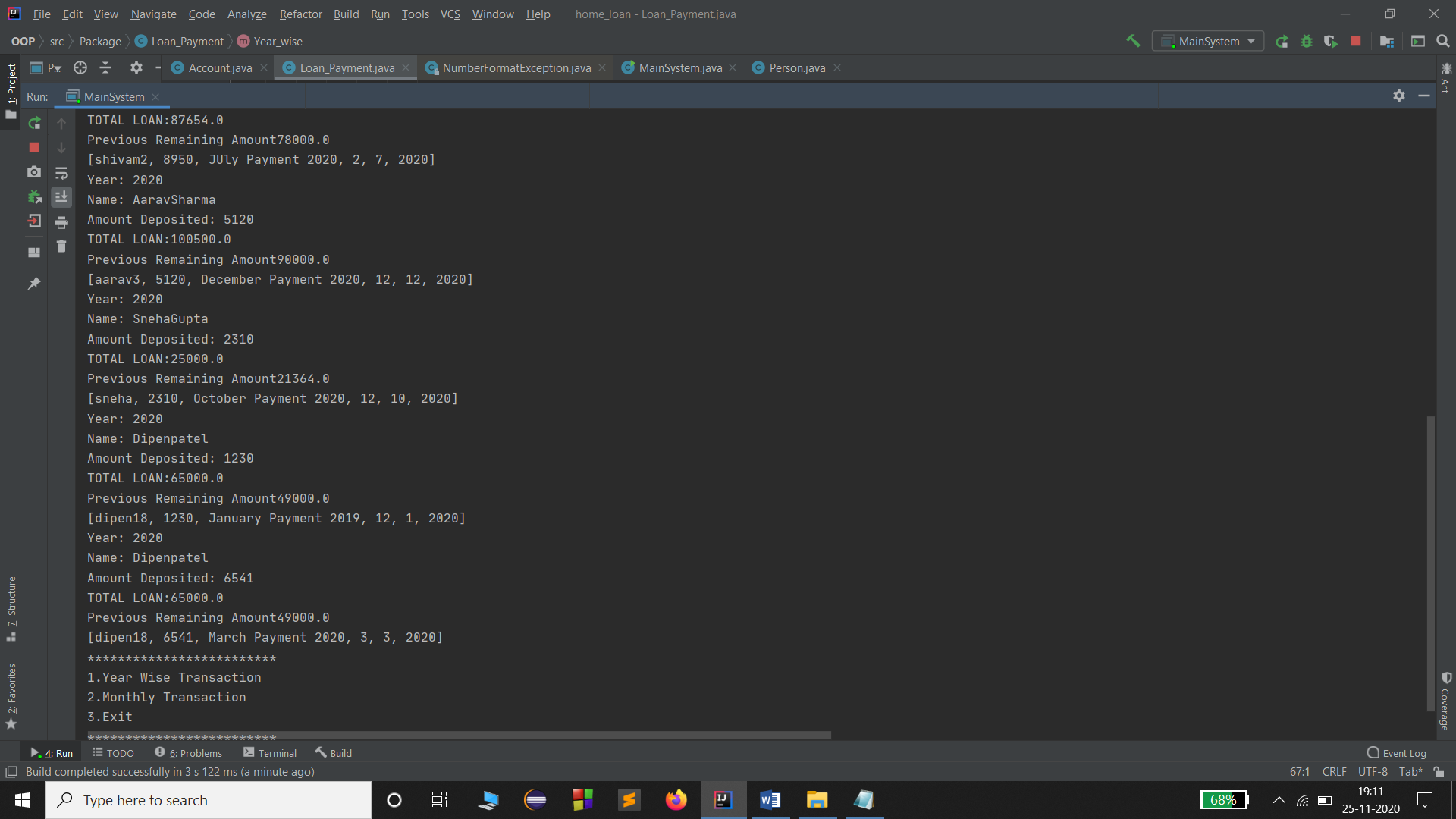


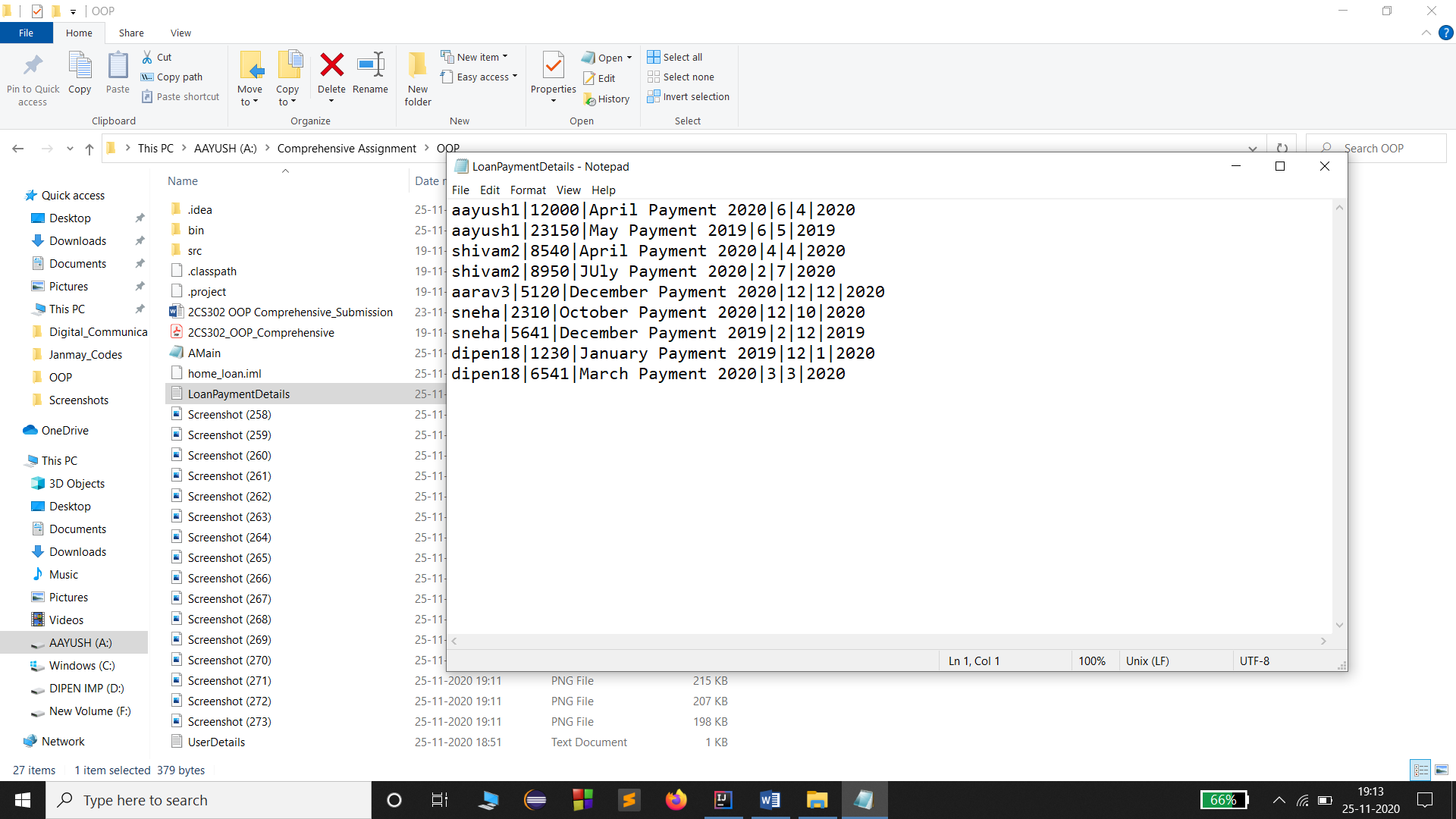




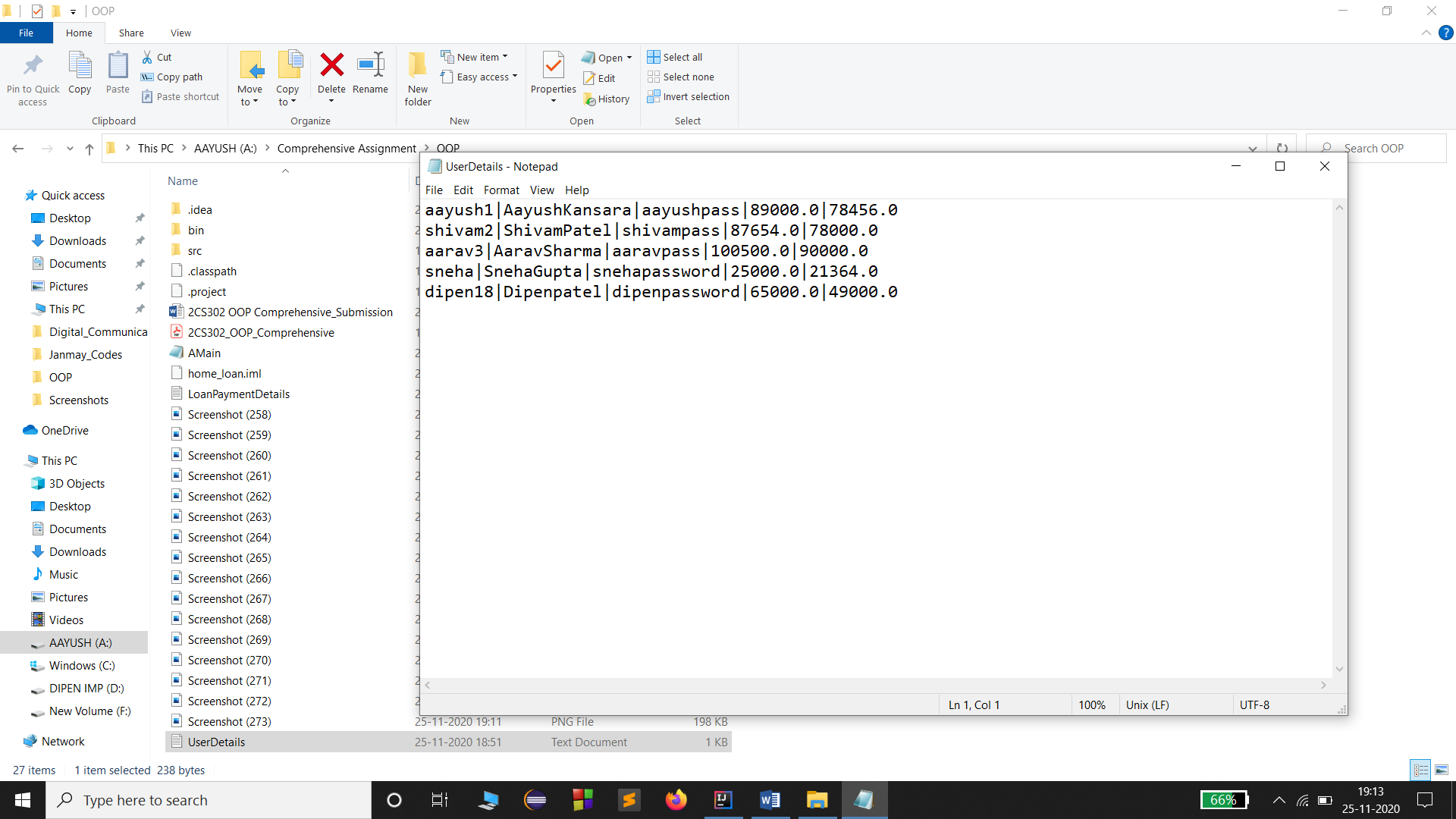








(LOANPAYMENT\_DETAILS.TXT FILE HAS BEEN CREATED)



(UserDetails\_Txt File Has Been Created in the same folder)