

The ER diagram illustrates the following entities and their attributes:

- EMPLOYEE** (Primary Key: E_ID): ADDRESS, PHONE, QUALIFICATION, DEPARTMENT, E_FNAME, E_LNAME, EXPERIENCE, SALARY, ADHAR_NO.
- BRANCH** (Primary Key: BNAME): BLOCATION, LICENSENUM, GST_NO, BPHONE_NO.
- PRODUCT** (Primary Key: PRODUCT_ID): QUANTITY, PREVIOUS_PRICE, RUNNING_PRICE.
- SUPPLIER** (Primary Key: S_ID): DL_NO, S_GST, S_TYPE, COMPANY_NAME, CONTACT_NO.
- CUSTOMER** (Primary Key: C_ID): CPHONE, CUST_NAME, TYPE, PAYMENT_MODE.
- DEPENDENTS** (Primary Key: FNAME): LNAME, (NAME), PHONE_NO, RELATION.
- ACCOUNT** (Primary Key: ACCOUNT_ID): CASH_RECEIVED, DEBIT_BANK, CREDIT_BANK, DATE.

The relationships and their cardinalities are as follows:

- WORKS_FOR** (1:N): Connects EMPLOYEE and BRANCH.
- DEPENDENTS_OF** (1:N): Connects EMPLOYEE and DEPENDENTS.
- OWNS** (1:N): Connects BRANCH and PRODUCT.
- HAS** (1:1): Connects BRANCH and ACCOUNT.
- SUPPLIES** (1:N): Connects SUPPLIER and PRODUCT.
- ORDERS** (N:1): Connects CUSTOMER and BILL.

No changes in the normalization.

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Question1: Give the SQL statement(s) used to create the Oracle/MySQL database tables needed to implement the normalized relational schema.

create table Branch (

License_no varchar2(20) primary key,

Branch_name varchar2(30) not null,

Branch_loc varchar2(40),

Branch_phone varchar2(20),

GST_No varchar2(50));

create table Employee(

Emp_id varchar2(20) primary key,

Emp_fname varchar2(30),

Emp_lname varchar2(30),

Dept varchar2(30),

Salary int,

Experience int,

Qualification varchar2(40),

Emp_Phone varchar2(20),

Address varchar2(50)

License_no varchar2(20);

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```
create table Customers(  
Cust_id varchar2(20) primary key,  
Cust_name varchar2(30),  
Cust_type varchar2(20),  
Cust_phone varchar2(20),  
Payment_mode varchar2(20));
```

```
create table Supplier(  
S_GSTno varchar2(20) primary key,  
Company_name varchar2(40),  
Supplier_type varchar2(30),  
DL_no varchar2(20),  
Contact_No varchar2(20));
```

```
create table Products(  
Product_id varchar2(20) primary key,  
Quantity int,  
Running_price float,  
Previous_price float,  
License_no varchar2(20),  
foreign key(License_no)references  
Branch(License_no),  
S_GSTno varchar2(20),
```

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foreign key(S_GSTno) references

Supplier(S_GSTno));

create table Account(

Trans_date date ,

License_no varchar2(20),

primary key(Trans_date,License_no),

Credit_bank int,

Debit_bank int,

Cash_received float,

foreign key(License_no)references

Branch(License_no));

create table Dependants(

Dep_name varchar2(40),

Emp_id varchar2(20),

primary key(Dep_name,Emp_id),

foreign key (Emp_id) references

Employee(Emp_id),

Dep_Phone varchar2(20),

Relation varchar2(20));

create table bill(

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```

cust_id varchar2(20),
product_id varchar2(60),
quantity int,
amount float,
date date,
bill(cust_id) foreign key references customers(cust_id),
bill(product_id) foreign key references product(product_id)
primary key(cust_id,product_id,date));

```

Question2: Give the actual data stored in each table of the database.

select * from branch;

LICENSE_NO	BRANCH_NAME	BRANCH_LOC	BRANCH_PHONE	GST_NO
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confidential

select * from employee;

EMP_ID	EMP_FNAME	EMP_LNAME	DEPT	SALARY_IN_RUPEES	EXPERIENCE	QUALIFICATION	EMP_PHONE	ADDRESS	LICENSE_NO
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Confidential;

select * from customers;

CUST_ID	CUST_NAME	CUST_TYPE	CUST_PHONE	PAYMENT_MODE
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select * from products;

PRODUCT_ID	RUNNING_PRICE	PREVIOUS_PRICE	LICENSE_NO	S_GSTNO
------------	---------------	----------------	------------	---------

select * from account;

TRANS_DATE	LICENSE_NO	CREDIT_BANK	DEBIT_BANK	CASH_RECEIVED
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select * from supplier;

S_GSTNO	COMPANY_NAME	SUPPLIER_TYPE	DL_NO	CONTACT_NO
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select * from dependents;

D_NAME	EMP_ID	DEP_PHONE	RELATION
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select * from bill;

CUST_ID	PRODUCT_ID	QUANTITY	AMOUNT	TDATE	BILLNO
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Question3: Give the snapshots, description and SQL queries for each of the user interface forms for your application. (Create the front end using python or java and hook it up to the SQL.)

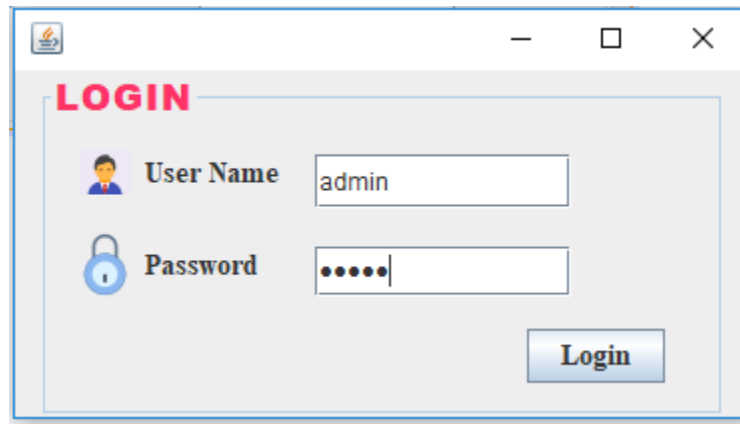


Figure 1: Login Screen to access the database.

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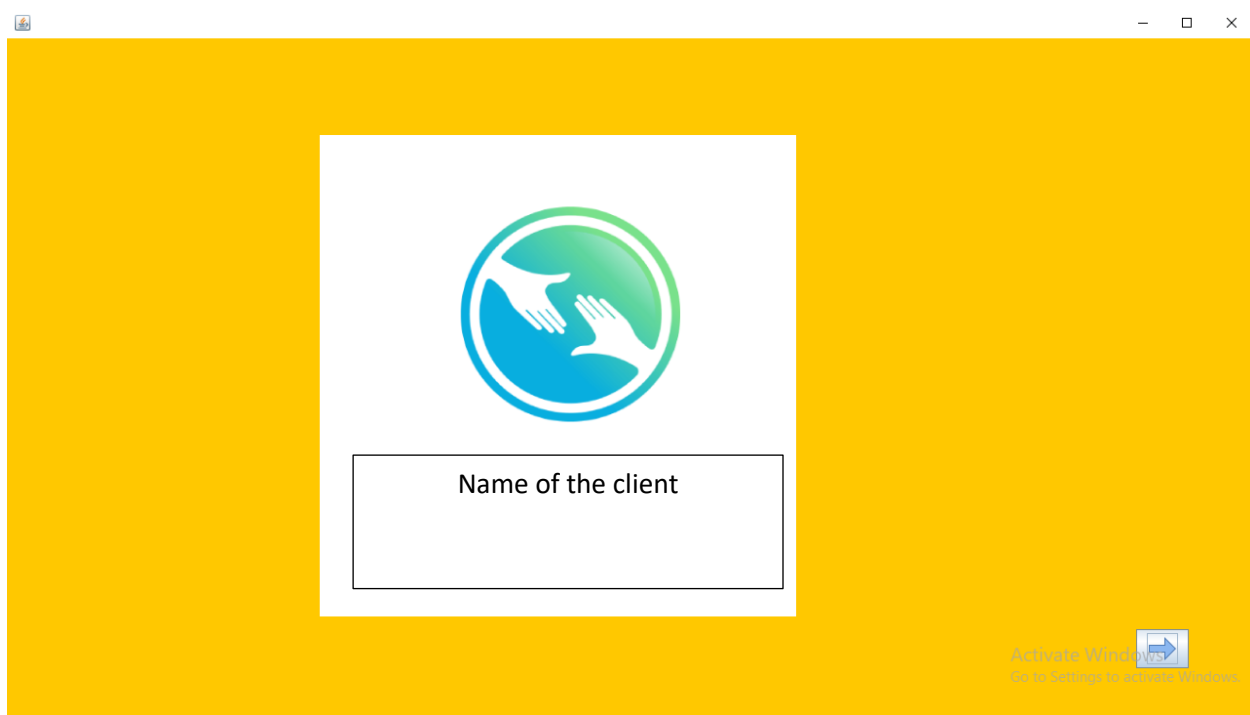


Figure 2: Welcome page of the database.

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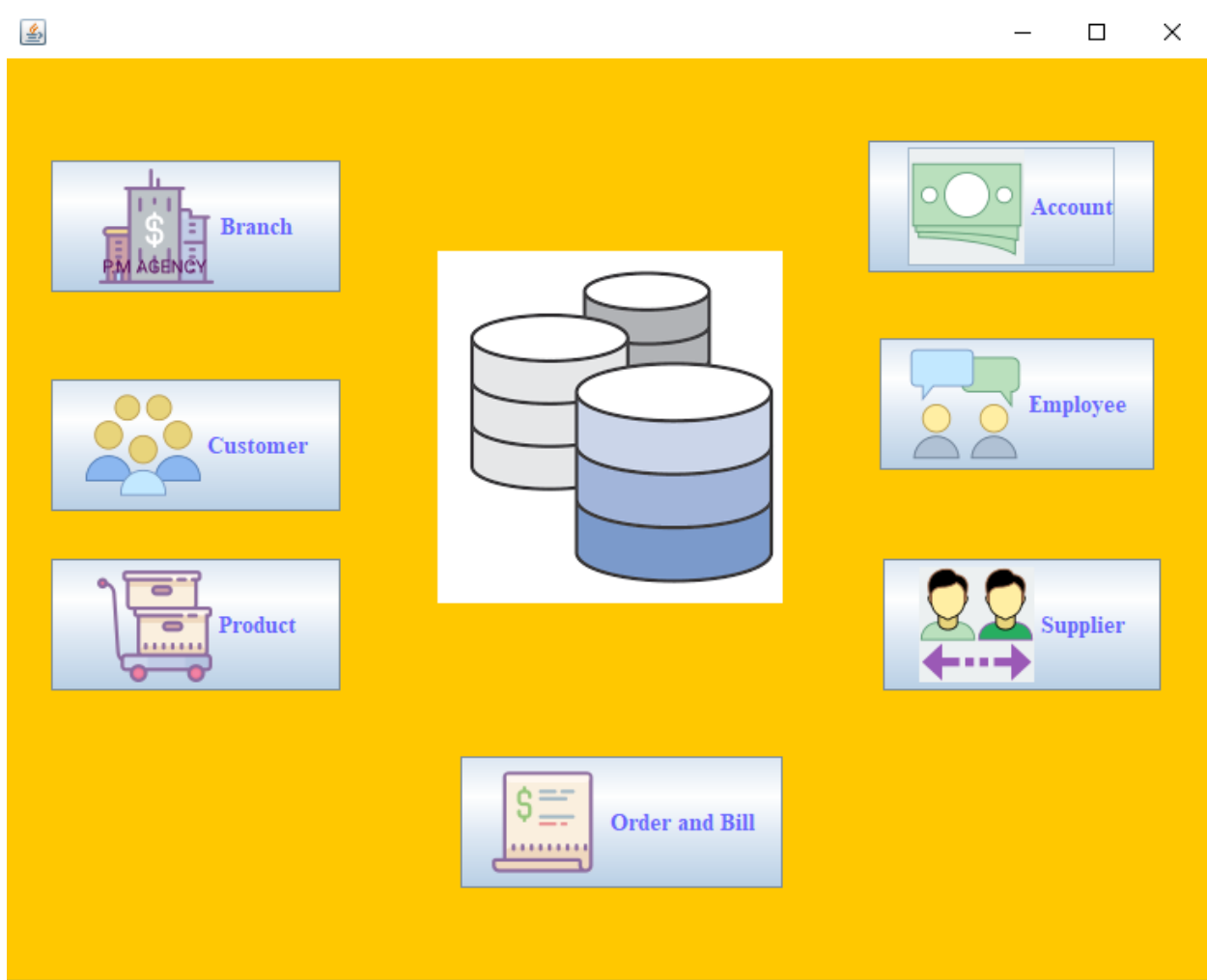
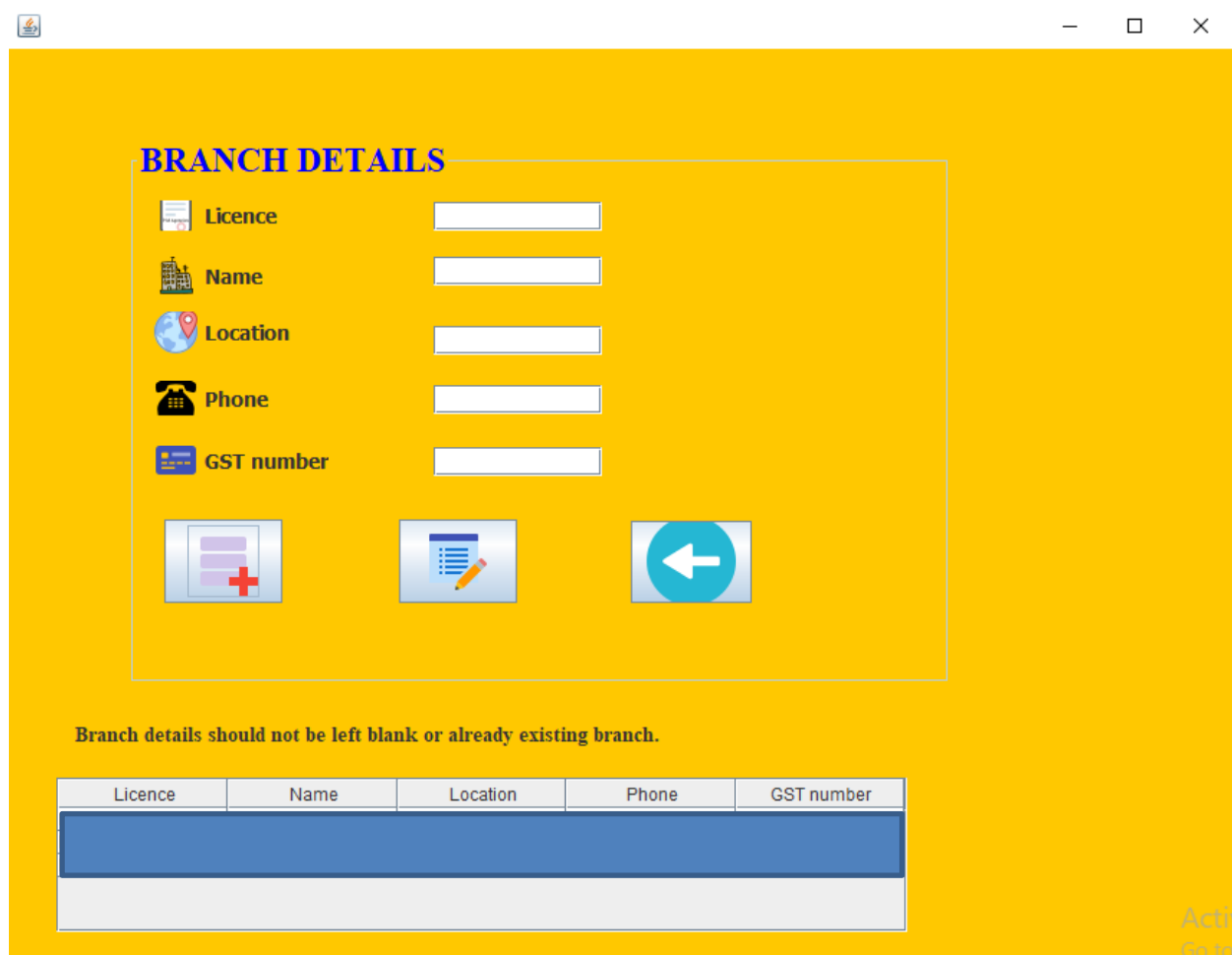


Figure 3: Different functionalities of database.

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BRANCH DETAILS

Licence

Name

Location

Phone

GST number

Branch details should not be left blank or already existing branch.

Licence	Name	Location	Phone	GST number

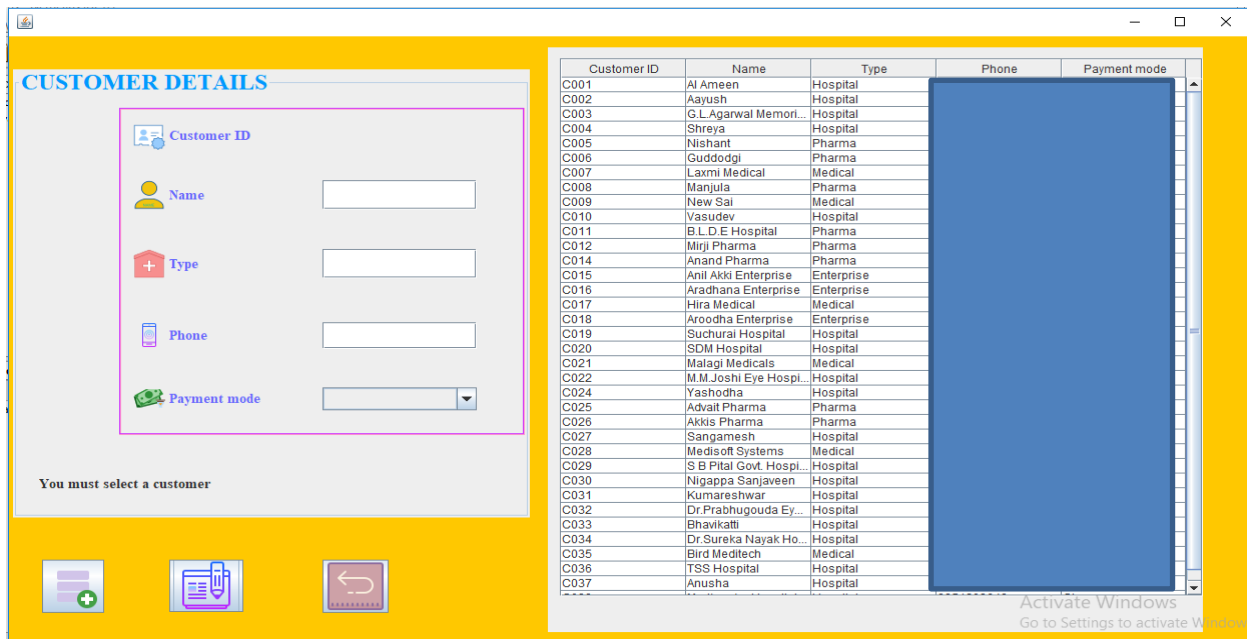
Figure 4: Screen to update or insert the information of branches.

Queries:

Insert query: `state.executeQuery("insert into branch values('"+f1+"','"+f2+"','"+f3+"','"+f4+"','"+f5+"')");`

Update query: `ResultSet rs=s.executeQuery("update branch set
branch_name='"+f2+"',branch_loc='"+f3+"',branch_phone='"+f4+"',gst_no='"+f5+"' where
license_no='"+f1+"'");`

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CUSTOMER DETAILS

Customer ID:

Name:

Type:

Phone:

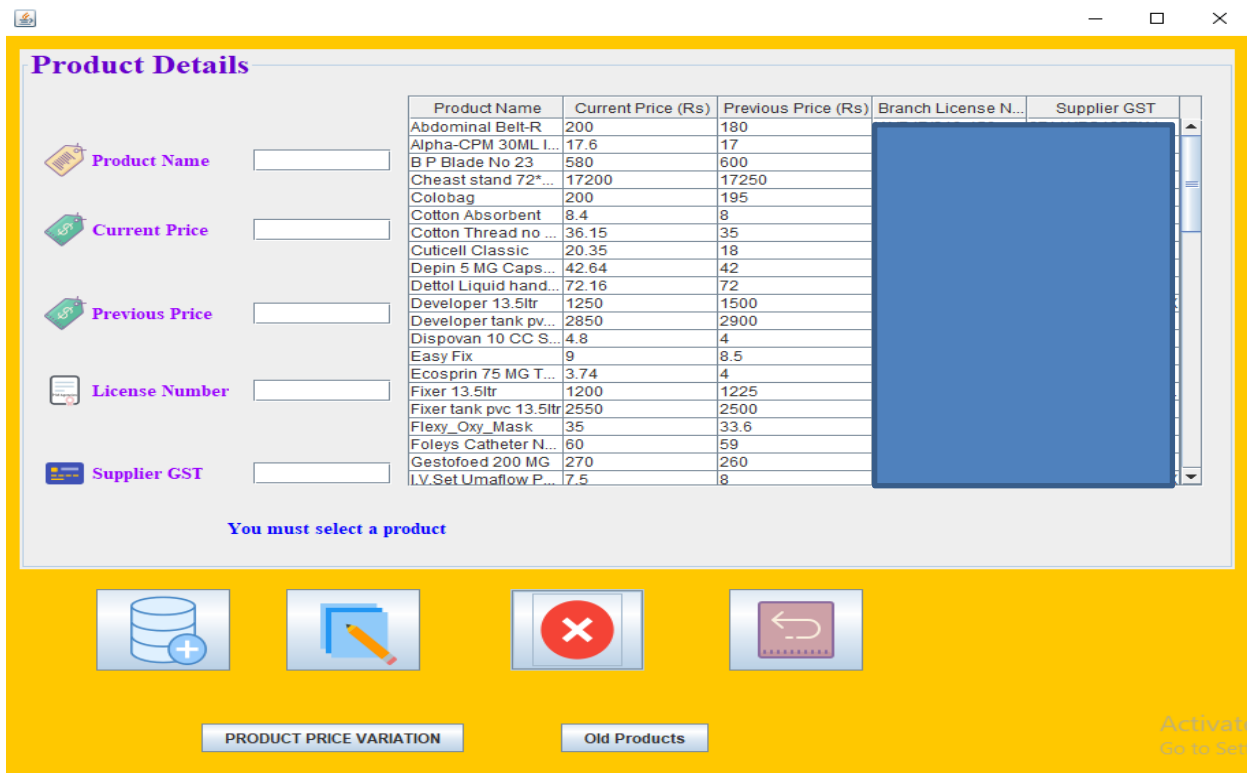
Payment mode:

You must select a customer

Customer ID	Name	Type	Phone	Payment mode
C001	Al Ameen	Hospital		
C002	Aayush	Hospital		
C003	G.L.Agarwal Memori...	Hospital		
C004	Shreya	Hospital		
C005	Nishant	Pharma		
C006	Guddodgi	Pharma		
C007	Laxmi Medical	Medical		
C008	Manjula	Pharma		
C009	New Sai	Medical		
C010	Vasudev	Hospital		
C011	B L D E Hospital	Pharma		
C012	Mirji Pharma	Pharma		
C014	Anand Pharma	Pharma		
C015	Anil Akki Enterprise	Enterprise		
C016	Aradhana Enterprise	Enterprise		
C017	Hira Medical	Medical		
C018	Aroodha Enterprise	Enterprise		
C019	Suchurai Hospital	Hospital		
C020	SDM Hospital	Hospital		
C021	Malagi Medicals	Medical		
C022	M.M.Joshi Eye Hospi...	Hospital		
C024	Yashodha	Hospital		
C025	Advat Pharma	Pharma		
C026	Akkis Pharma	Pharma		
C027	Sangamesh	Hospital		
C028	Medisoft Systems	Medical		
C029	S B Pital Govt. Hospi...	Hospital		
C030	Nigappa Sanjaveen	Hospital		
C031	Kumareswar	Hospital		
C032	Dr.Prabhugouda Ey...	Hospital		
C033	Bhavikatti	Hospital		
C034	Dr.Sureka Nayak Ho...	Hospital		
C035	Bird Meditech	Medical		
C036	TSS Hospital	Hospital		
C037	Anusha	Hospital		

Activate Windows
Go to Settings to activate Windows

Figure 5: Screen to insert and update customer details.



Product Details

Product Name:

Current Price:

Previous Price:

License Number:

Supplier GST:

You must select a product

Product Name	Current Price (Rs)	Previous Price (Rs)	Branch License N...	Supplier GST
Abdominal Belt-R	200	180		
Alpha-CPM 30ML I...	17.6	17		
B P Blade No 23	580	600		
Cheast stand 72*...	17200	17250		
Colobag	200	195		
Cotton Absorbent	8.4	8		
Cotton Thread no ...	36.15	35		
Cuticell Classic	20.35	18		
Depin 5 MG Caps...	42.64	42		
Dettol Liquid hand...	72.16	72		
Developer 13.5ltr	1250	1500		
Developer tank pv...	2850	2900		
Dispovan 10 CC S...	4.8	4		
Easy Fix	9	8.5		
Ecosprin 75 MG T...	3.74	4		
Fixer 13.5ltr	1200	1225		
Fixer tank pvc 13.5ltr	2550	2500		
Flexy_Oxy_Mask	35	33.6		
Foleys Catheter N...	60	59		
Gestofoed 200 MG	270	260		
I.V.Set Umaflow P...	7.5	8		

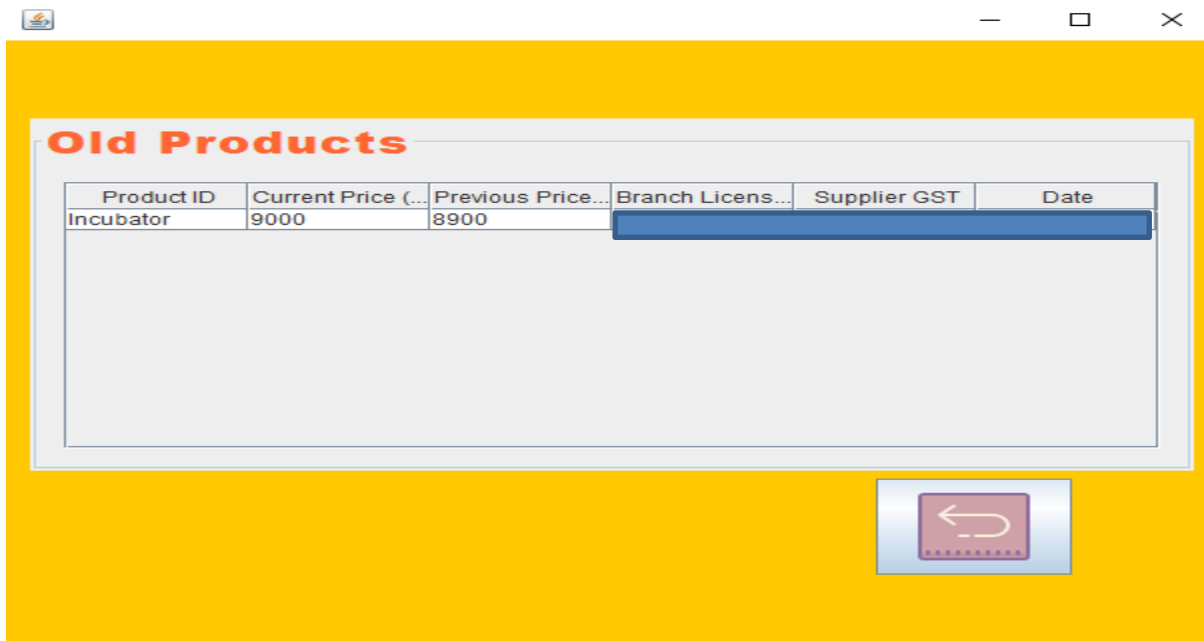
PRODUCT PRICE VARIATION

Old Products

Activate Windows
Go to Settings to activate Windows

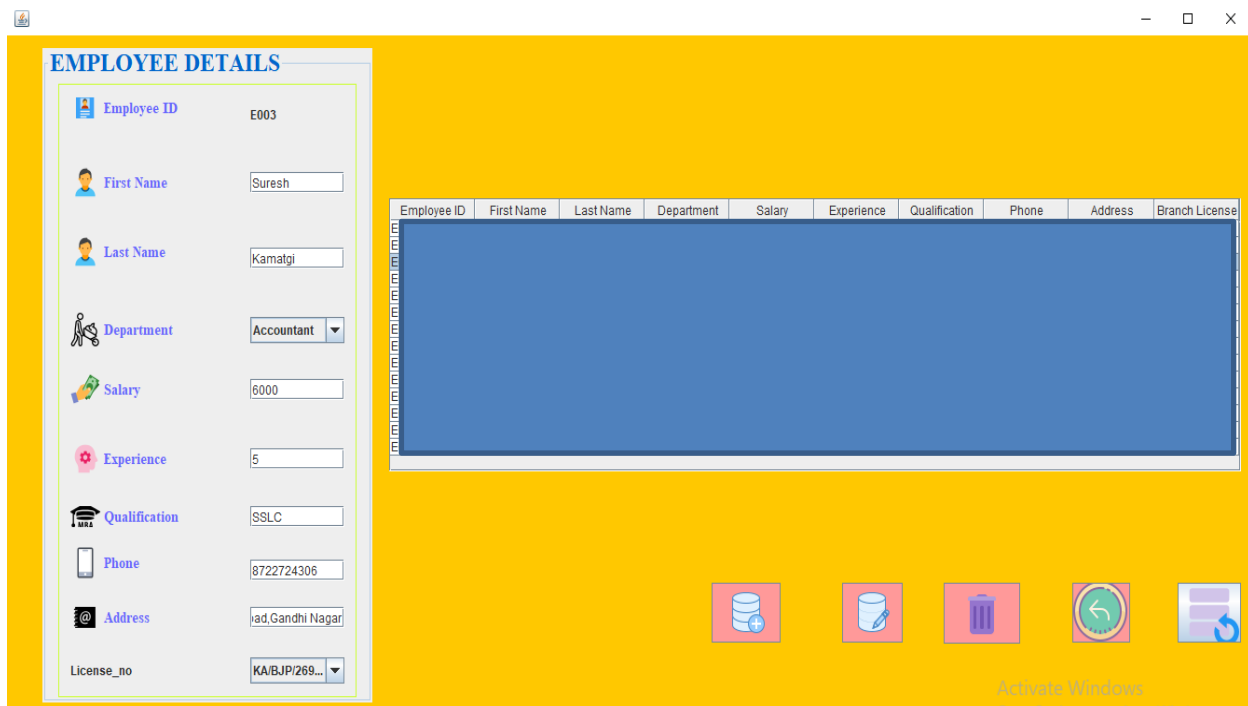
Figure 6: Screen to insert, update and delete product details.

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Product ID	Current Price (...)	Previous Price...	Branch Licens...	Supplier GST	Date
Incubator	9000	8900			

Figure 7: Old products back up.



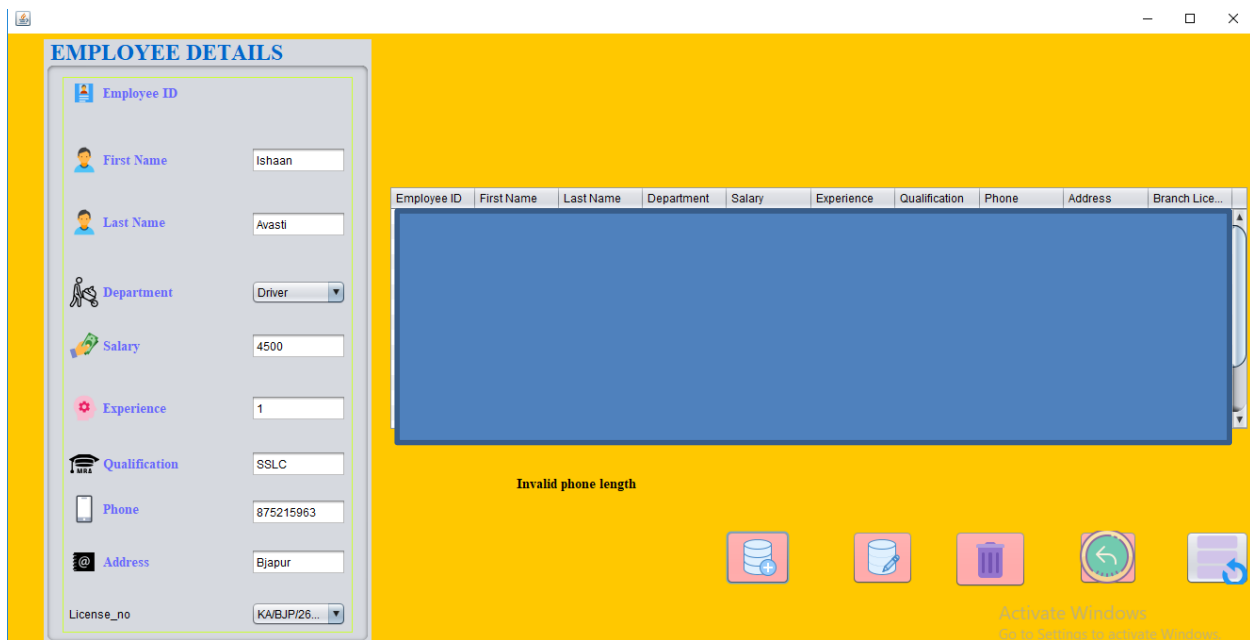
EMPLOYEE DETAILS

Employee ID: E003
First Name: Suresh
Last Name: Kamatgi
Department: Accountant
Salary: 6000
Experience: 5
Qualification: SSLC
Phone: 8722724306
Address: ad,Gandhi Nagar
License_no: KA/BJP/269...

Employee ID	First Name	Last Name	Department	Salary	Experience	Qualification	Phone	Address	Branch License

Figure 8: Screen to insert, update and delete the employee details.

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EMPLOYEE DETAILS

Employee ID

First Name: Ishaan

Last Name: Avasth

Department: Driver

Salary: 4500

Experience: 1

Qualification: SSLC

Phone: 875215963

Address: Bapapur

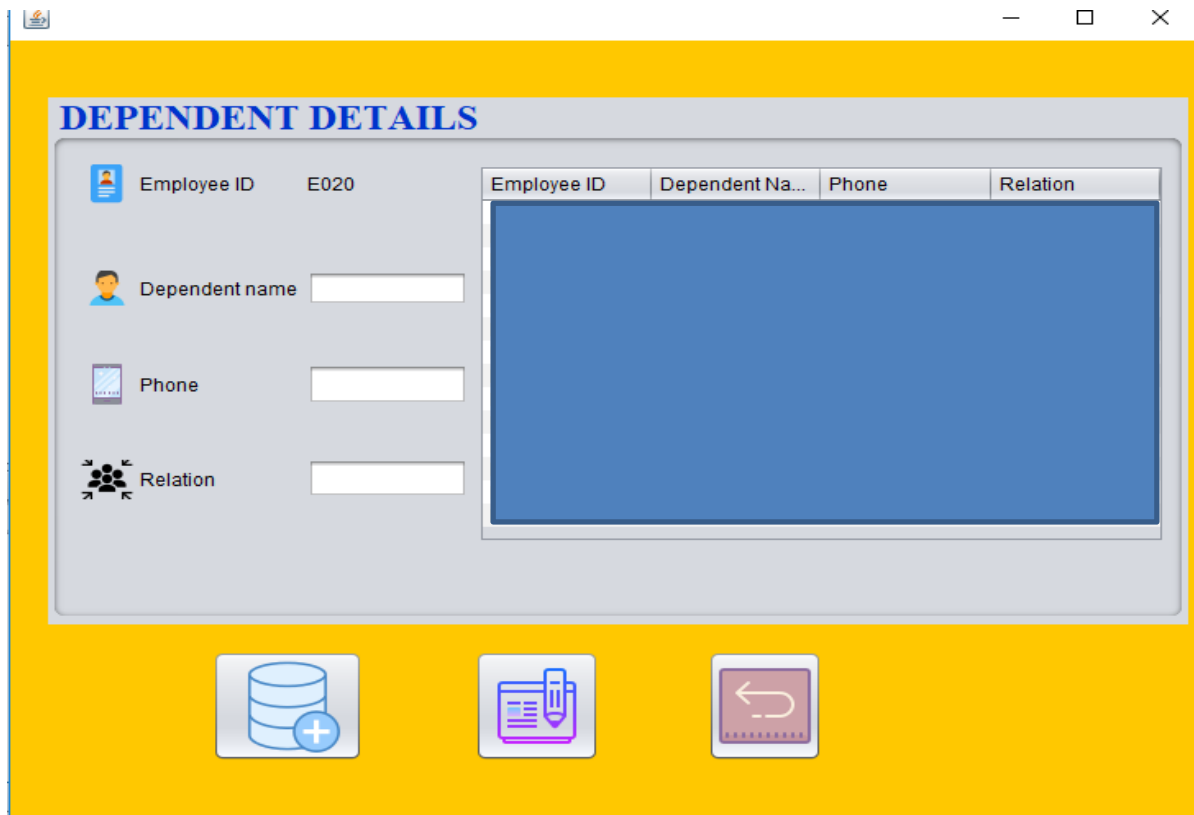
License_no: KA/BJP/25...

Invalid phone length

Employee ID	First Name	Last Name	Department	Salary	Experience	Qualification	Phone	Address	Branch Lice...
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Activate Windows
Go to Settings to activate Windows.

Figure 9 :Invalid Phone length



DEPENDENT DETAILS

Employee ID: E020

Dependent name:

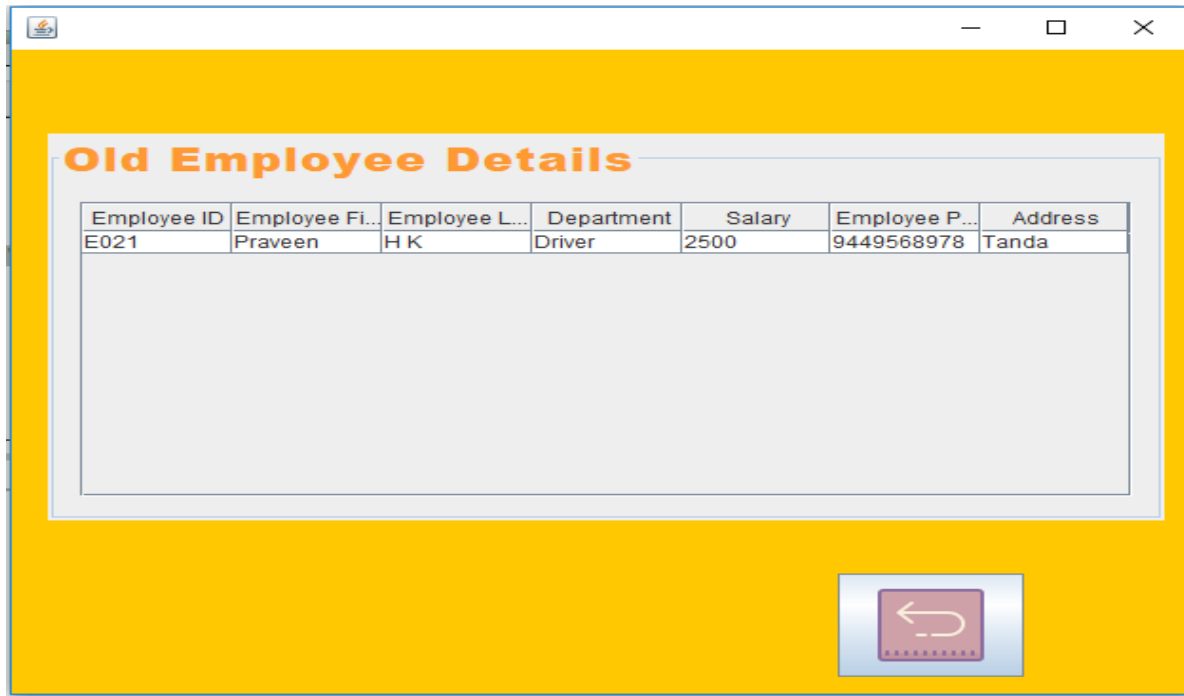
Phone:

Relation:

Employee ID	Dependent Na...	Phone	Relation
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Figure 10: Dependent Screen

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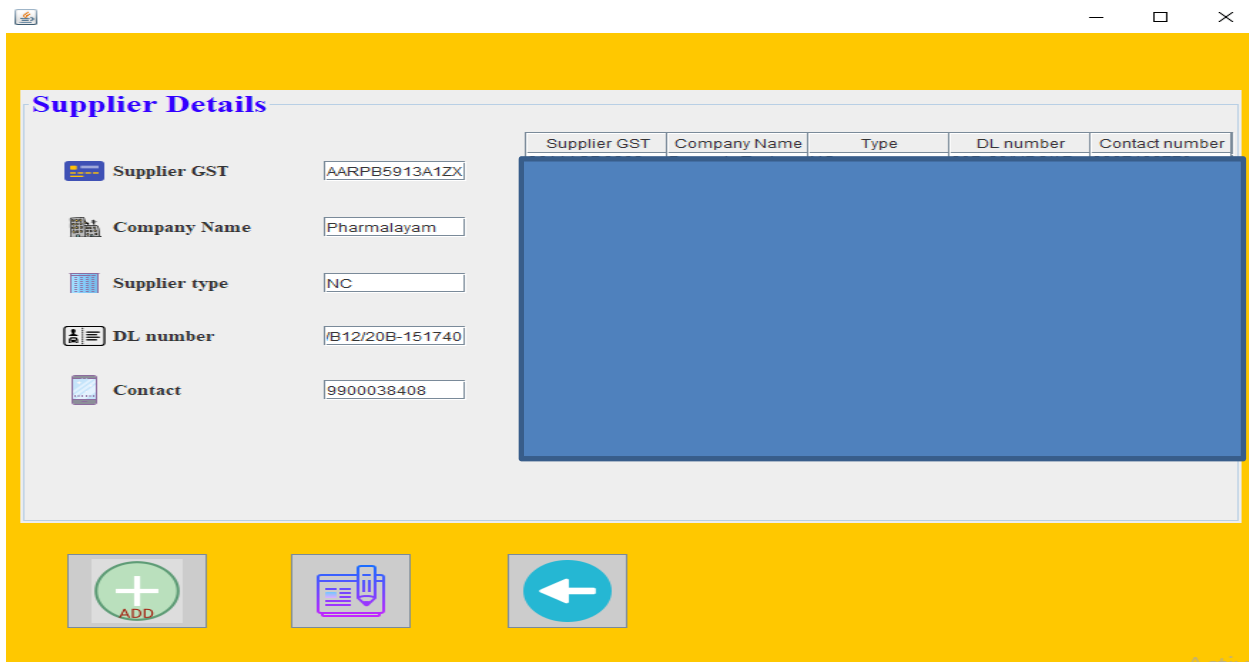


Old Employee Details

Employee ID	Employee Fi...	Employee L...	Department	Salary	Employee P...	Address
E021	Praveen	H K	Driver	2500	9449568978	Tanda

Navigation buttons: Back, Forward, Refresh, etc.

Figure 11: Table to store deleted employee details.



Supplier Details

Supplier GST: AARPB5913A1ZX

Company Name: Pharmalayam

Supplier type: NC

DL number: /B12/20B-151740

Contact: 9900038408

Supplier GST	Company Name	Type	DL number	Contact number
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Navigation buttons: Add, Edit, Back, etc.

Figure 12: Screen to insert or update the information of the supplier.

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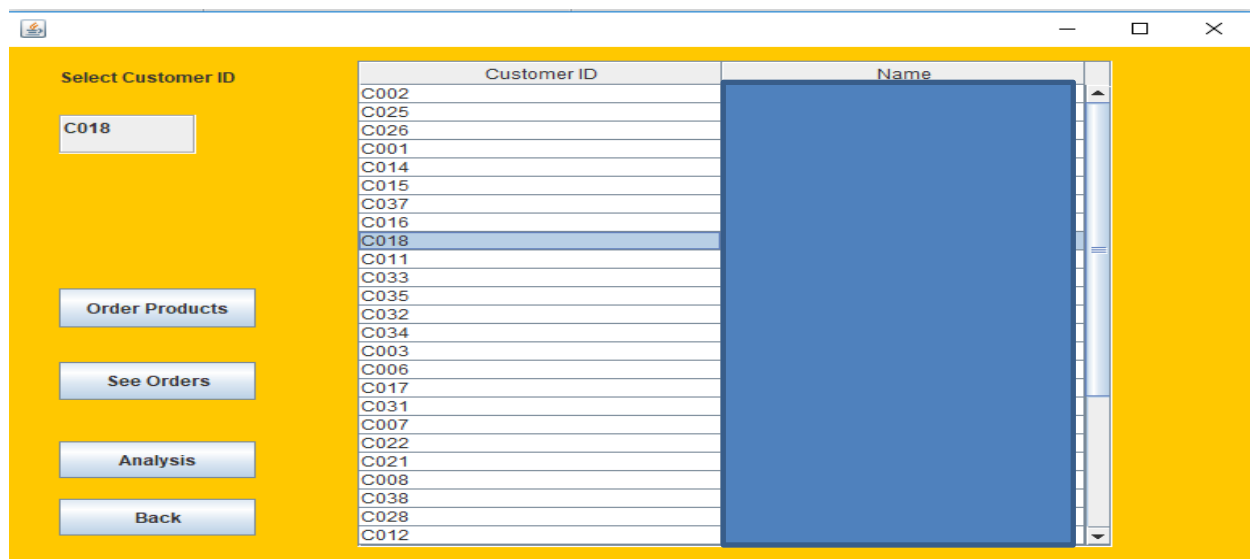
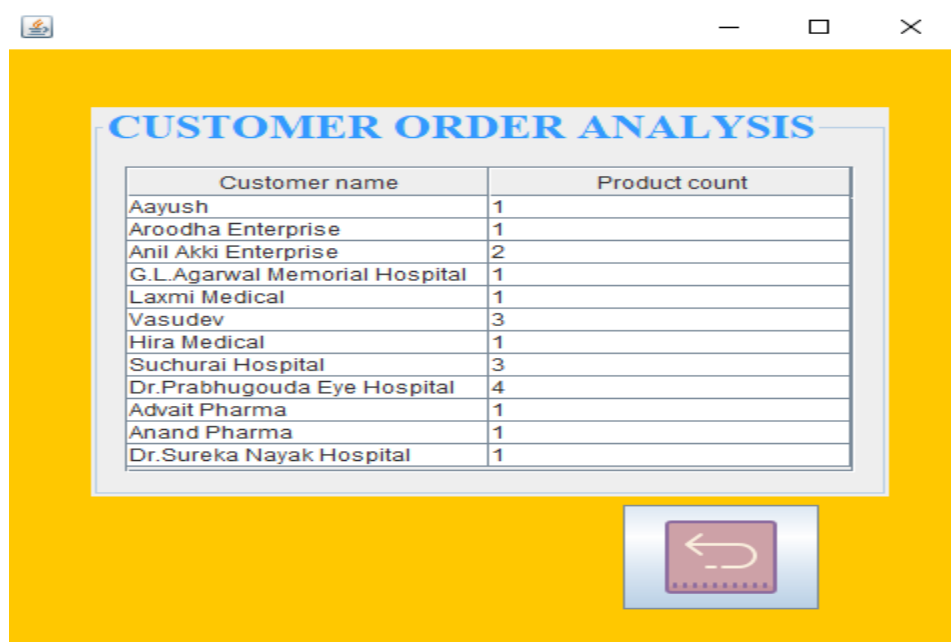


Figure 13: Screen to select the customer to order products or see their previous order.



Figure 14: Screen to display the order history of selected customer.

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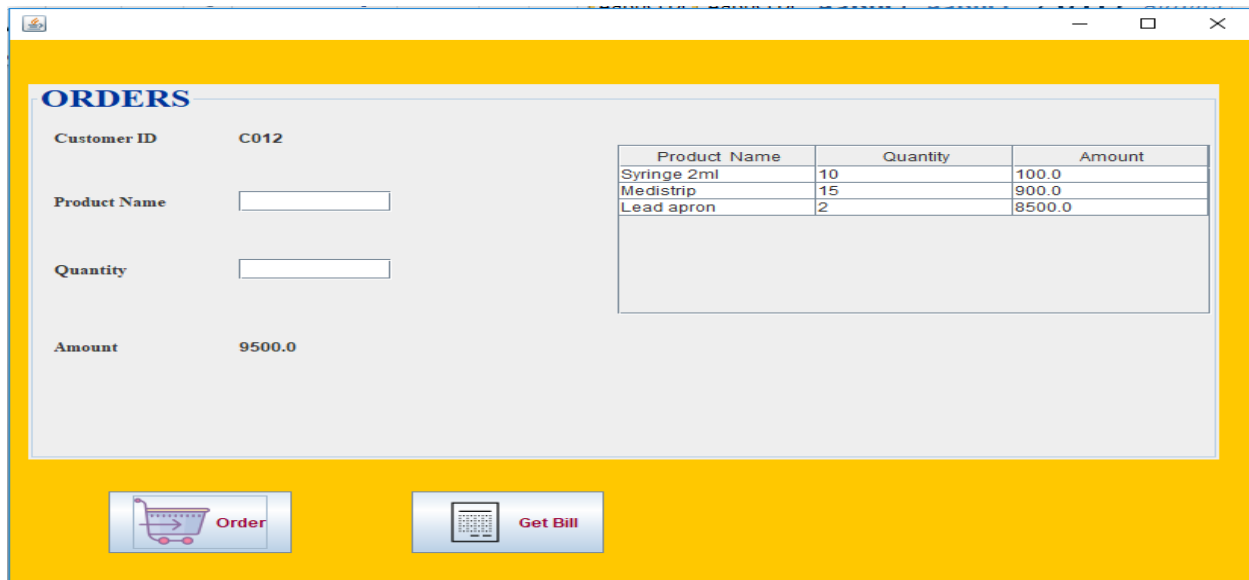


Customer name	Product count
Aayush	1
Aroodha Enterprise	1
Anil Akki Enterprise	2
G.L.Agarwal Memorial Hospital	1
Laxmi Medical	1
Vasudev	3
Hira Medical	1
Suchurai Hospital	3
Dr.Prabhugouda Eye Hospital	4
Advait Pharma	1
Anand Pharma	1
Dr.Sureka Nayak Hospital	1

Figure 15: Screen to display the customer analysis along with the number of products bought.

Query:

```
ResultSet rs= state.executeQuery("select c.cust_name as name,count(*) as products_count from customers c,bill b where c.cust_id=b.cust_id group by c.cust_name");
```



ORDERS

Customer ID: C012

Product Name:

Quantity:

Amount: 9500.0

Product Name	Quantity	Amount
Syringe 2ml	10	100.0
Medistrip	15	900.0
Lead apron	2	8500.0



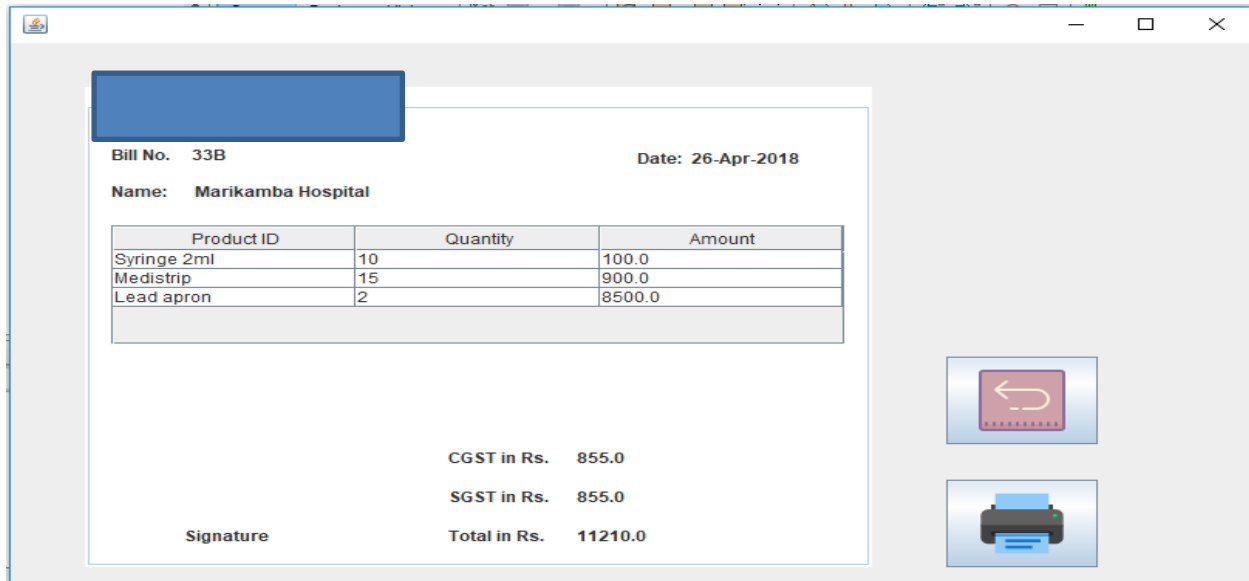
 Order  Get Bill

Figure 16: Screen to store the orders given by the customers and generate bill.

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Bill No. 33B **Date:** 26-Apr-2018

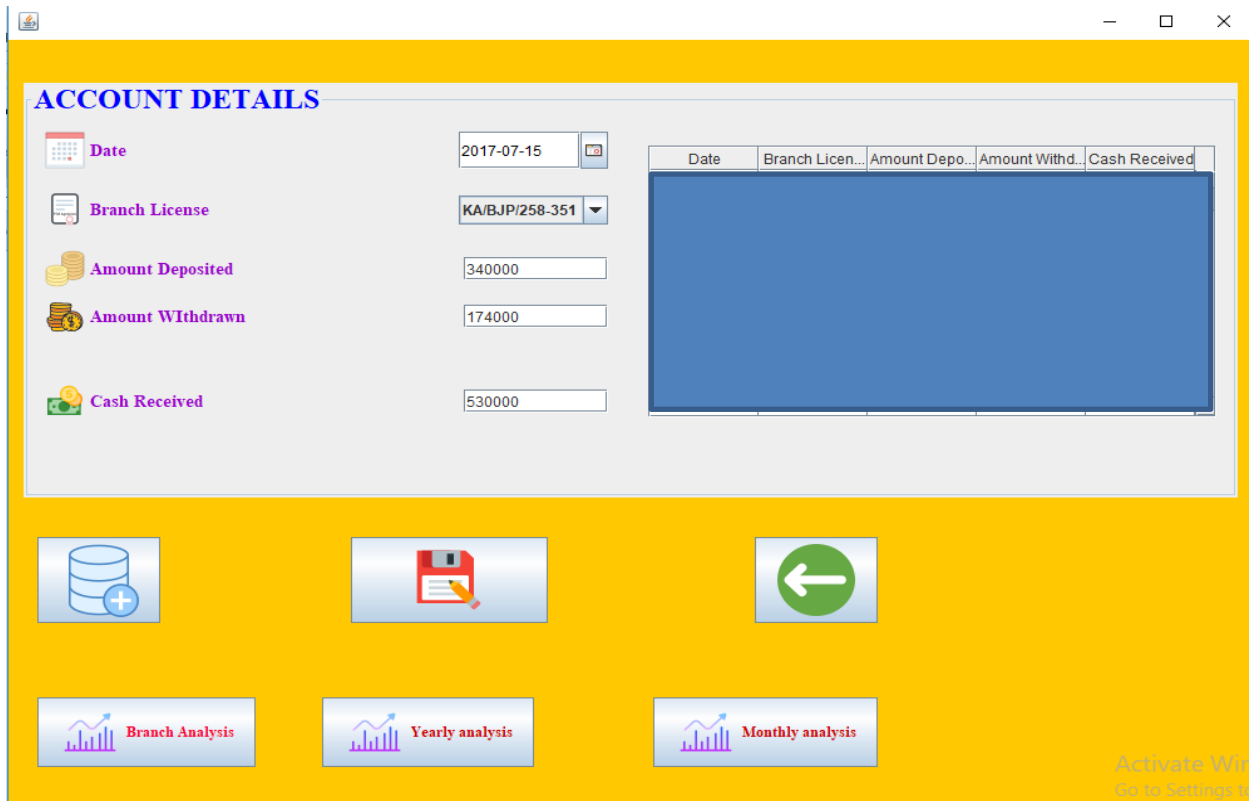
Name: Marikamba Hospital

Product ID	Quantity	Amount
Syringe 2ml	10	100.0
Medistrip	15	900.0
Lead apron	2	8500.0

CGST in Rs. 855.0
SGST in Rs. 855.0
Total in Rs. 11210.0

Signature

Figure 17: Screen to print the bill.



ACCOUNT DETAILS

Date 2017-07-15

Branch License KA/BJP/258-351

Amount Deposited 340000

Amount Withdrawn 174000

Cash Received 530000

Date	Branch Licen...	Amount Depo...	Amount Withd...	Cash Received

Branch Analysis **Yearly analysis** **Monthly analysis**

Figure 18: Screen to insert and update the account details of the branch and analyze income each branch.

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Query:

```
ResultSet r=s.executeQuery("select sum(cash_received),license_no from account group by license_no");
```

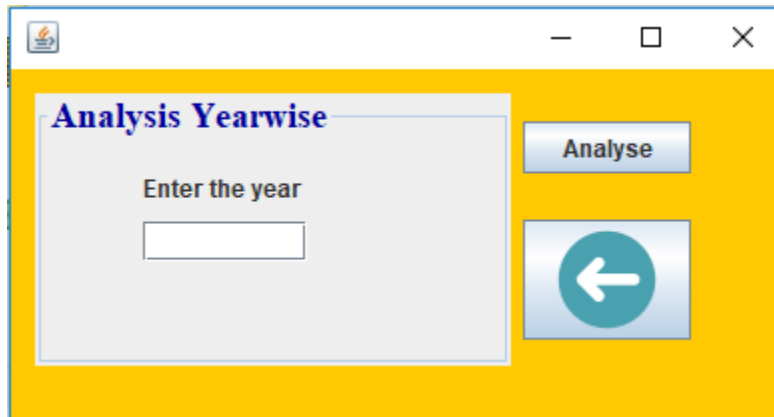


Figure 19: Screen to enter the year to plot the graph year wise.

Query:

```
ResultSet r=s.executeQuery("select license_no,sum(cash_received)from account where  
ltrim(to_char(trans_date,'yyyy'),'0')='"+d+"'group by license_no");
```

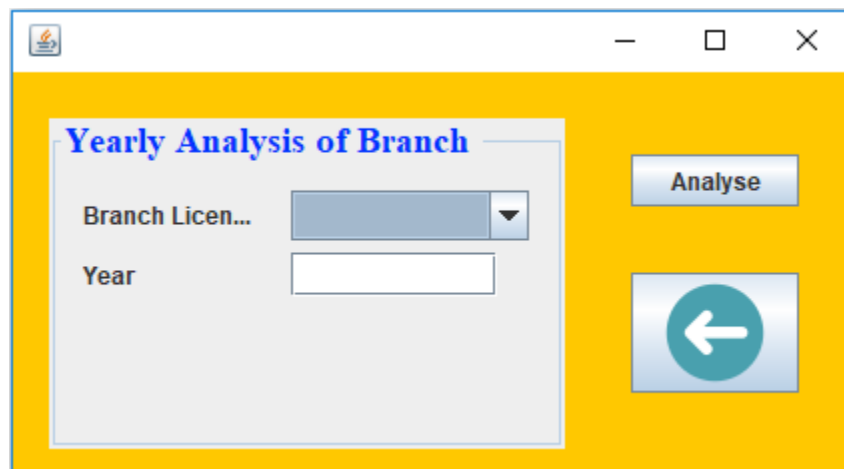


Figure 20: Screen to enter the year and branch to get the graph month wise.

Query:

```
ResultSet r=s.executeQuery("select sum(cash_received),ltrim(to_char(trans_date,'MM'),'0') as month  
from account where license_no='"+branch+"' and ltrim(to_char(trans_date,'yyyy'),'0')='"+year+"' group  
by ltrim(to_char(trans_date,'MM'),'0')");
```

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bill.pdf

//C:/Users/Anusha/Desktop/bill.pdf

Bill No. 25B **Date: 25-Apr-2018**

Name: Anil Akki Enterprise

Product ID	Quantity	Amount
Syringe 2ml	20	200.0
Medistrip	10	600.0

CGST in Rs. 72.0

SGST in Rs. 72.0

Signature **Total in Rs. 944.0**

Acti
Go to

Figure 21: Bill

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Question4: Give all possible final reports and graphs obtained by your application.

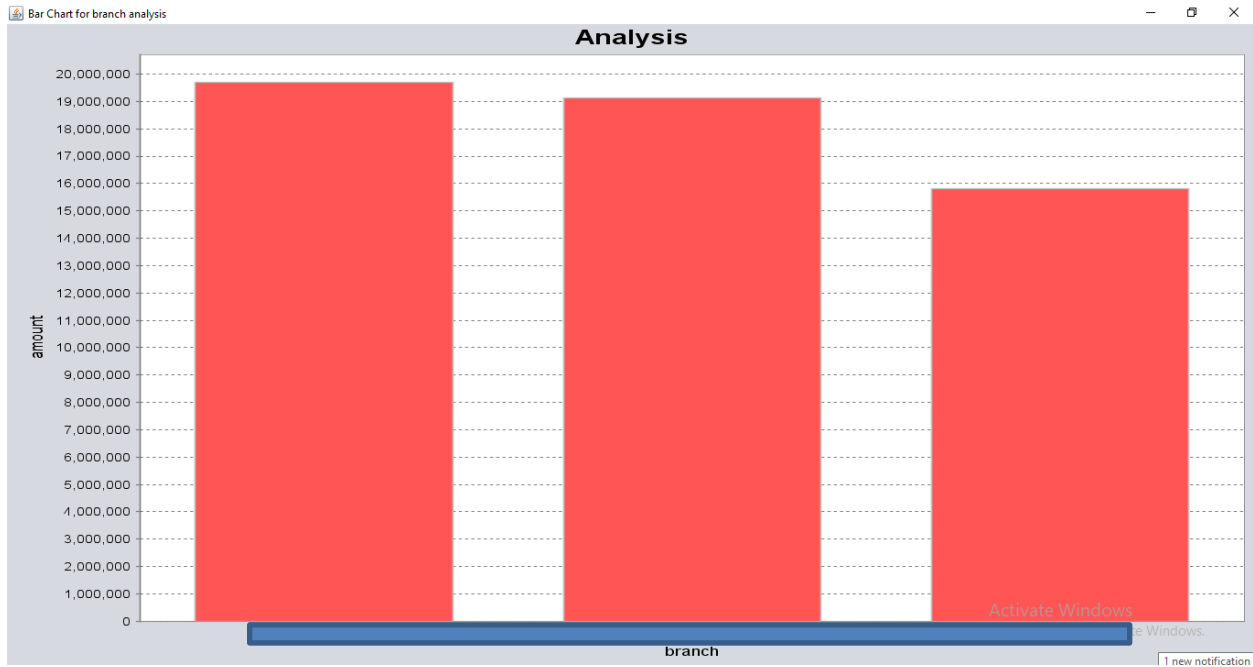


Figure 22: Branch Income Analysis

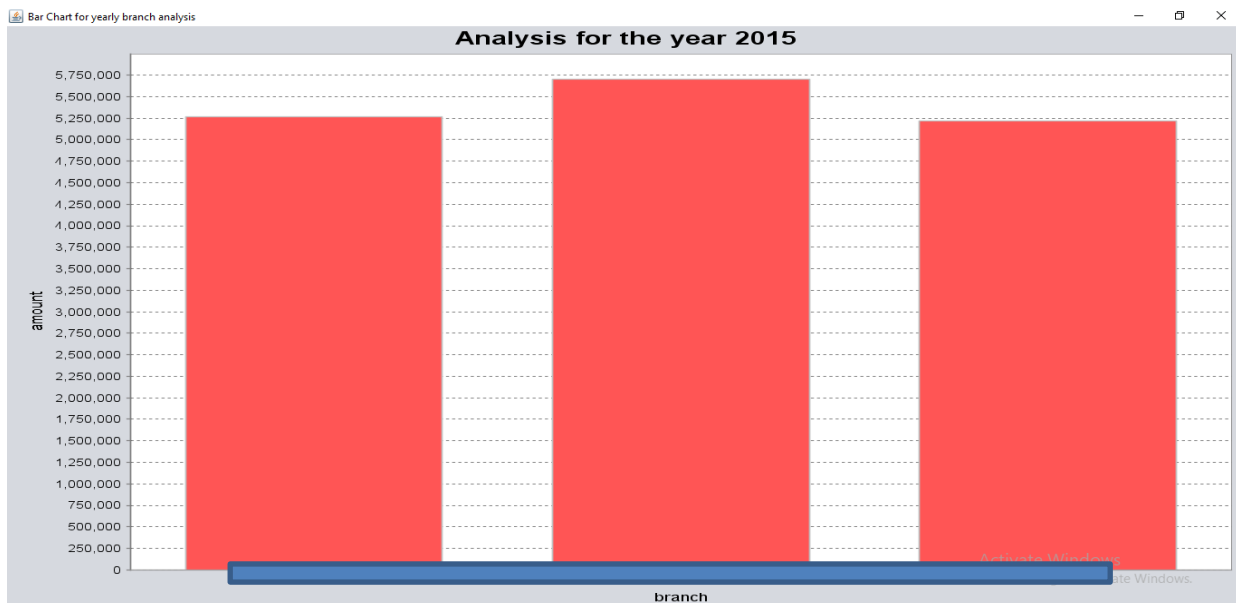


Figure 23: Branch Income Analysis for the year 2015

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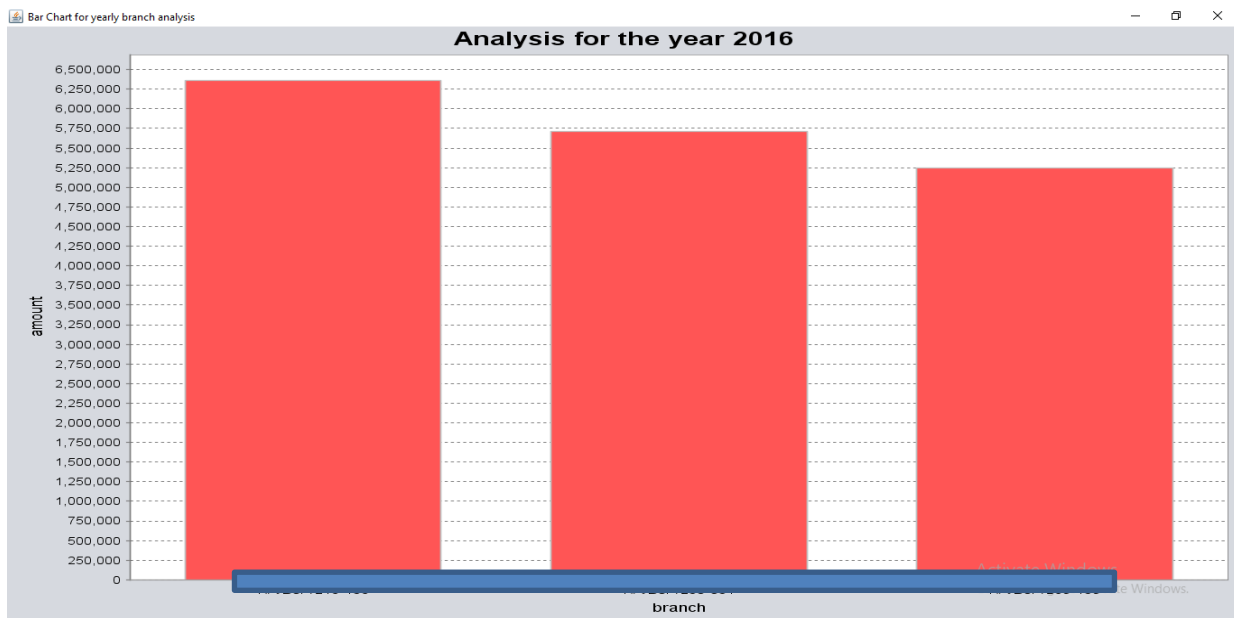


Figure 24: Branch Analysis for the year 2016

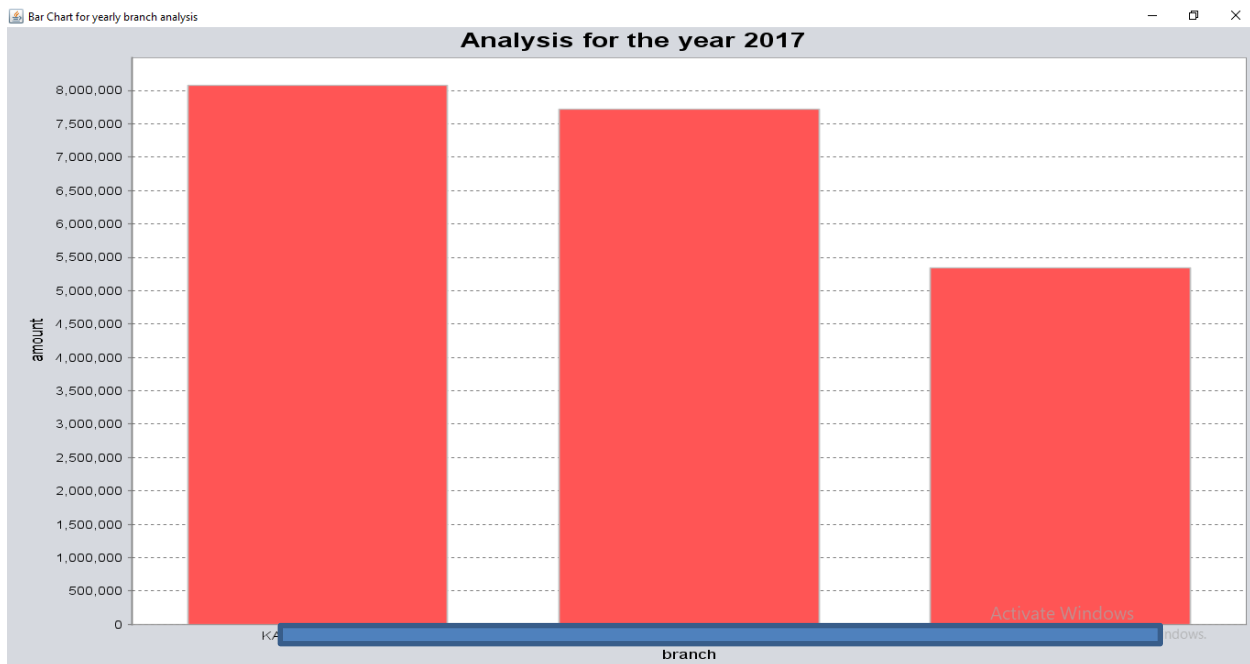


Figure 25: Branch Income Analysis for the year 2017

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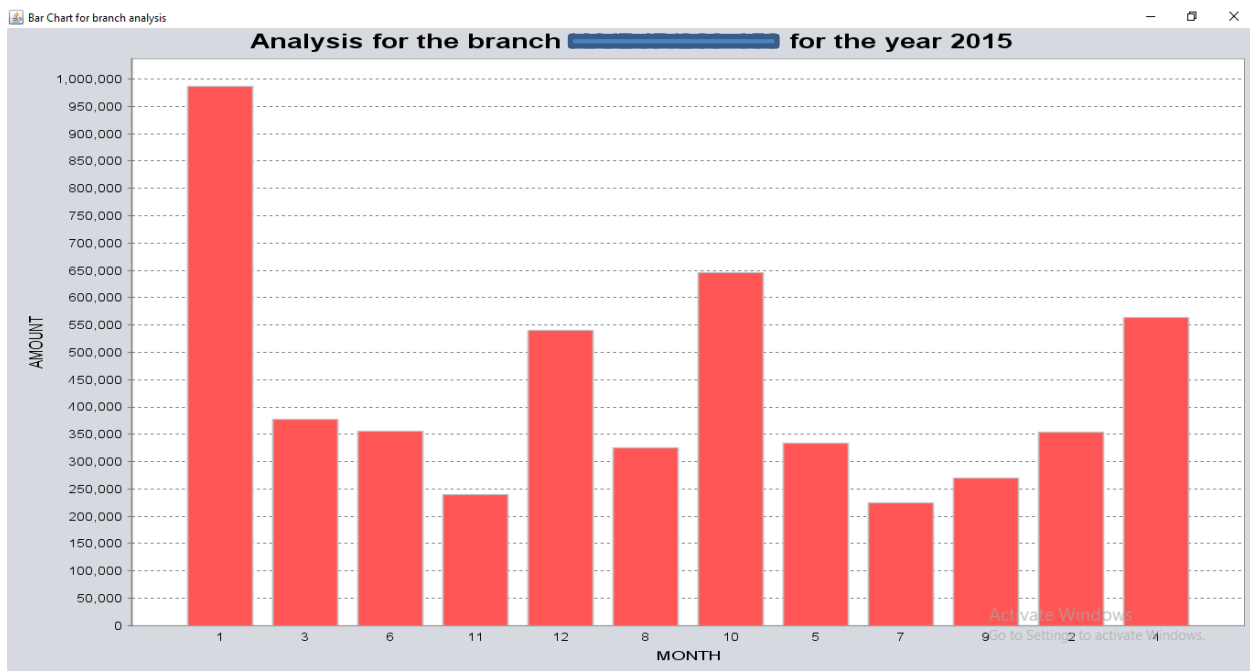


Figure 26: Monthly Income Analysis for the branch ***** for the year 2015

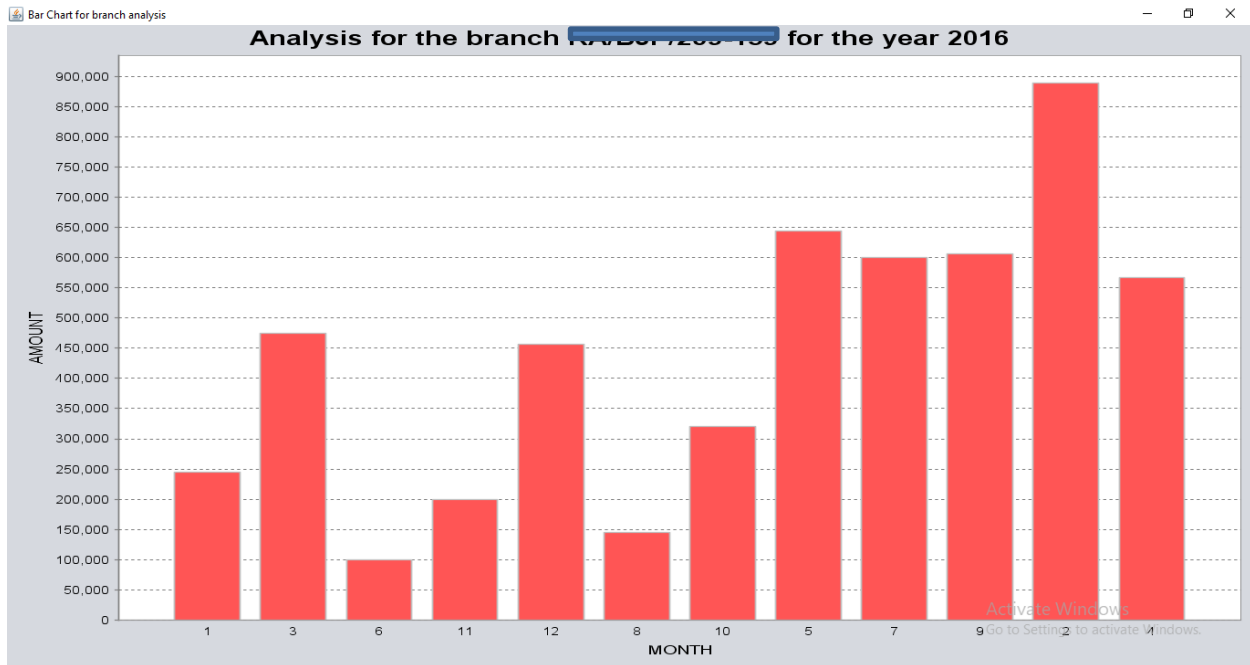


Figure 27: Monthly Income Analysis for the branch ***** for the year 2016

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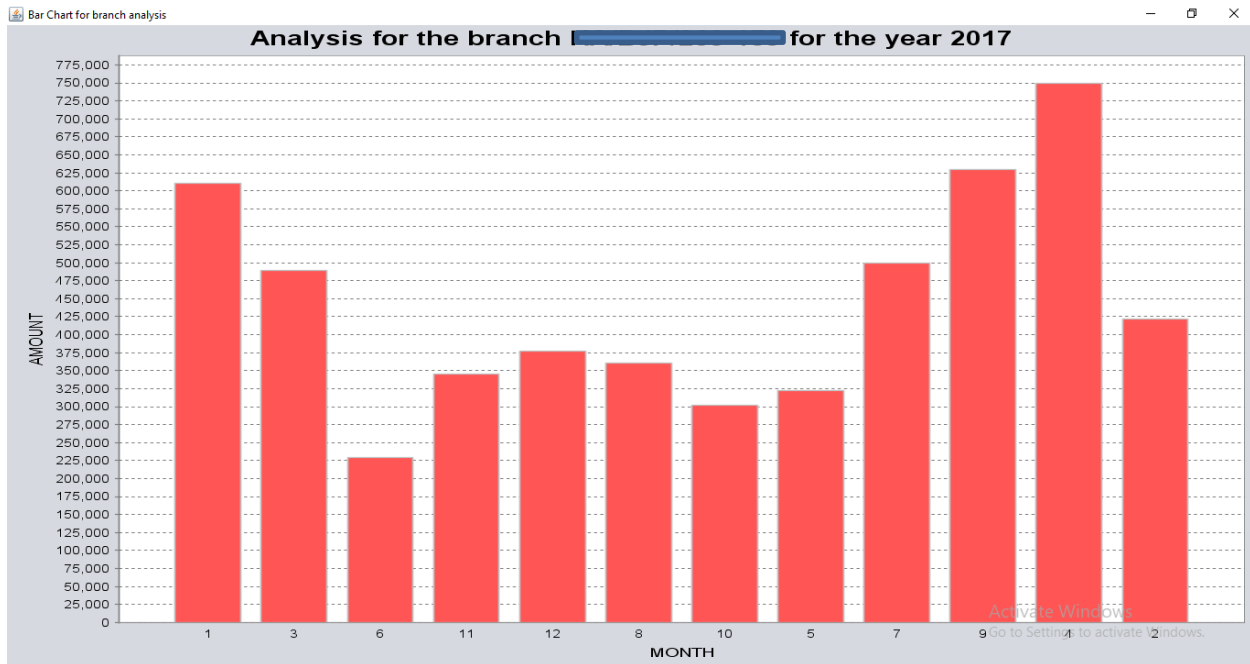


Figure 28: Monthly Income Analysis for the branch ***** for the year 2017

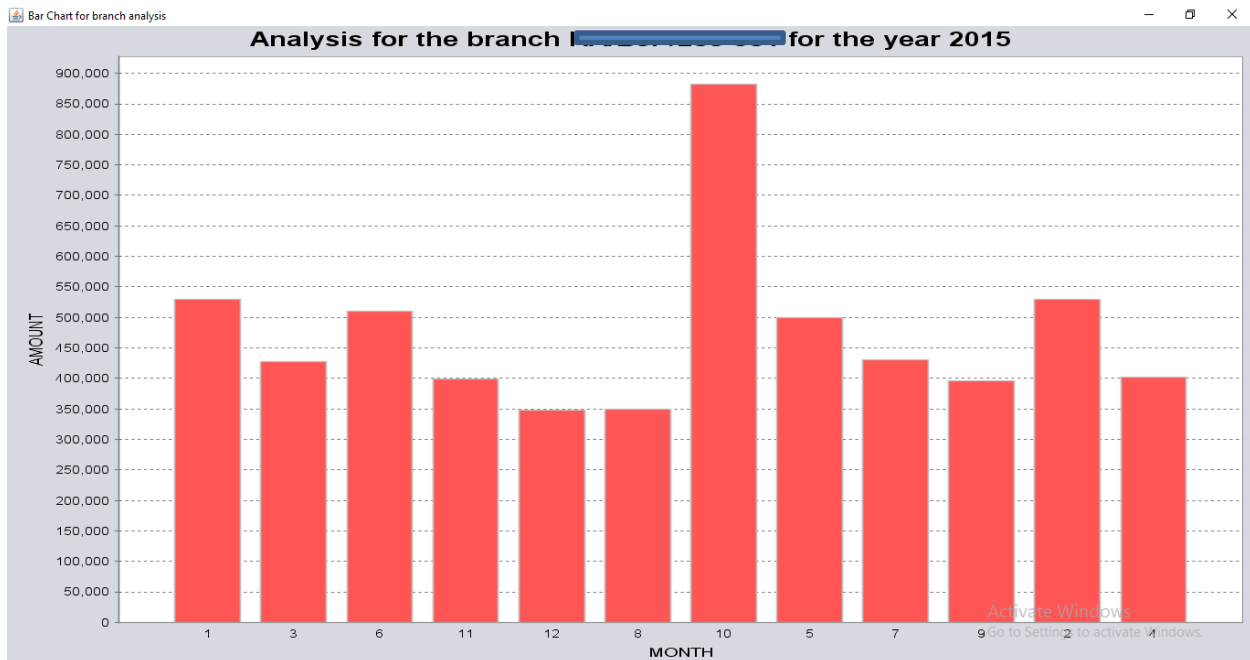


Figure 29: Monthly Income Analysis for the branch ***** for the year 2015

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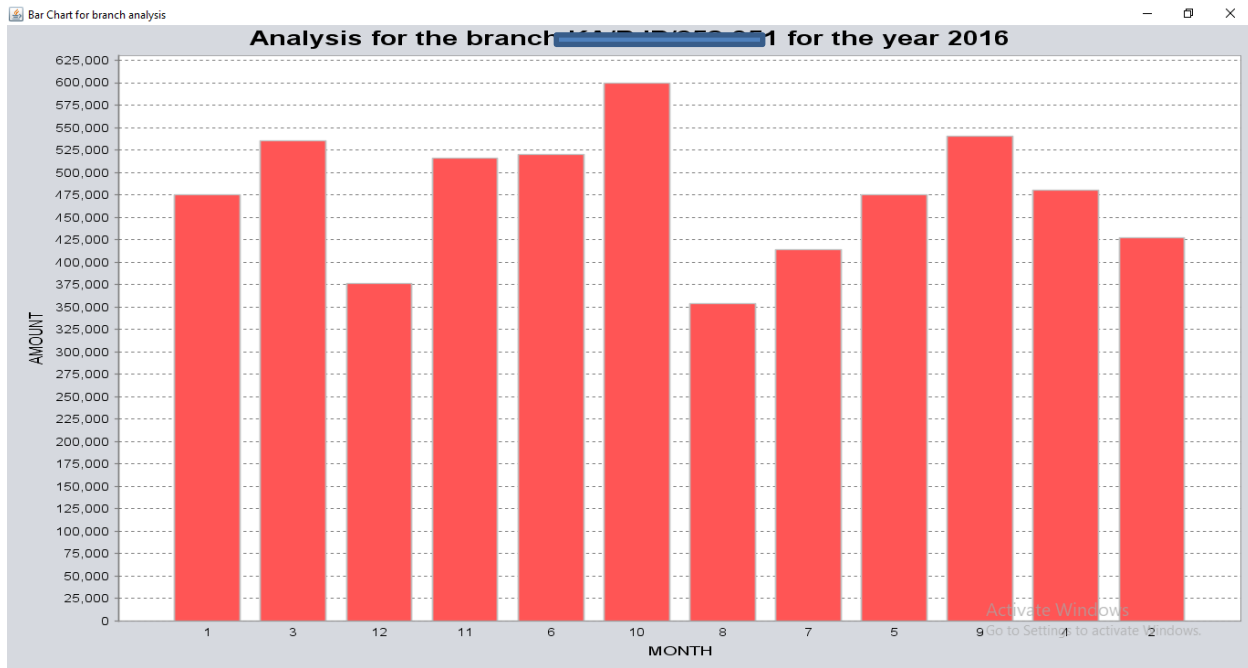


Figure 30: Monthly Income Analysis for the branch ***** for the year 2016

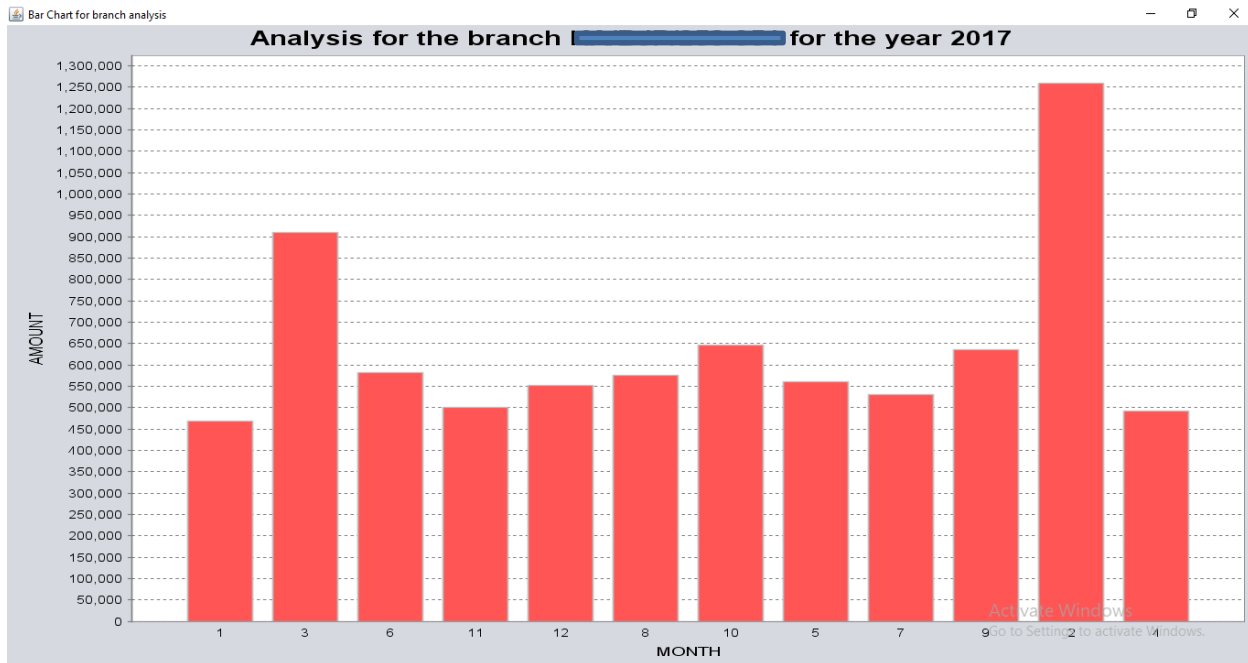


Figure 31: Monthly Income Analysis for the branch ***** for the year 2017

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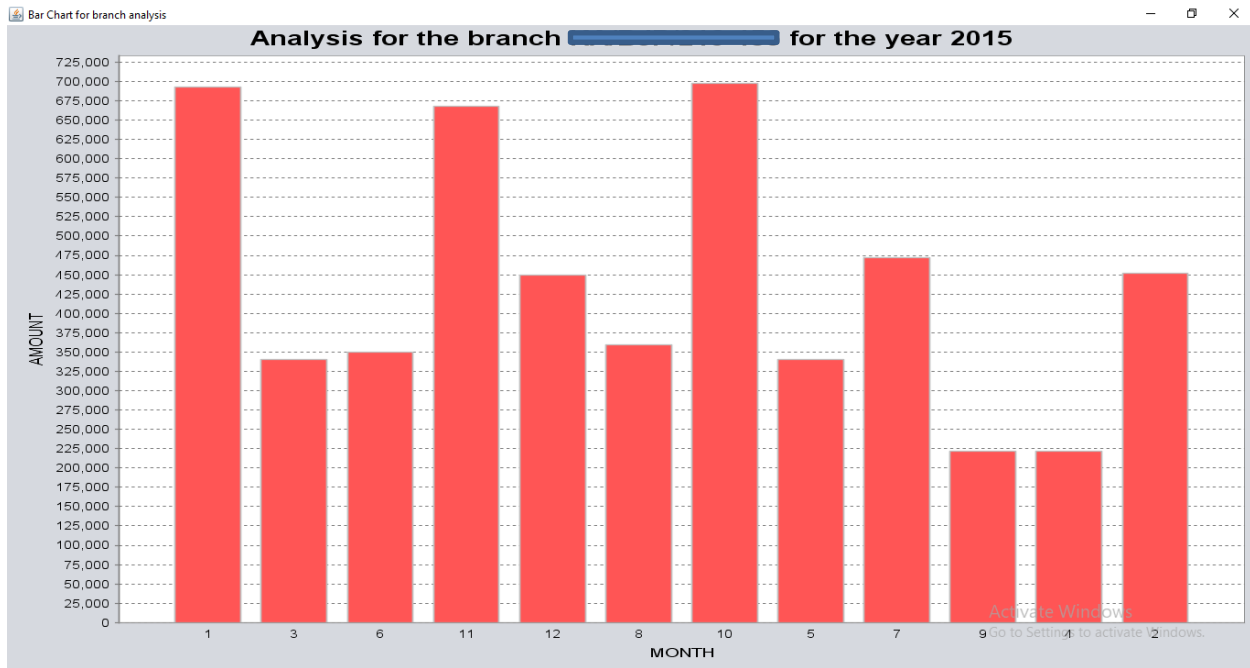


Figure 32: Monthly Income Analysis for the branch ***** for the year 2015

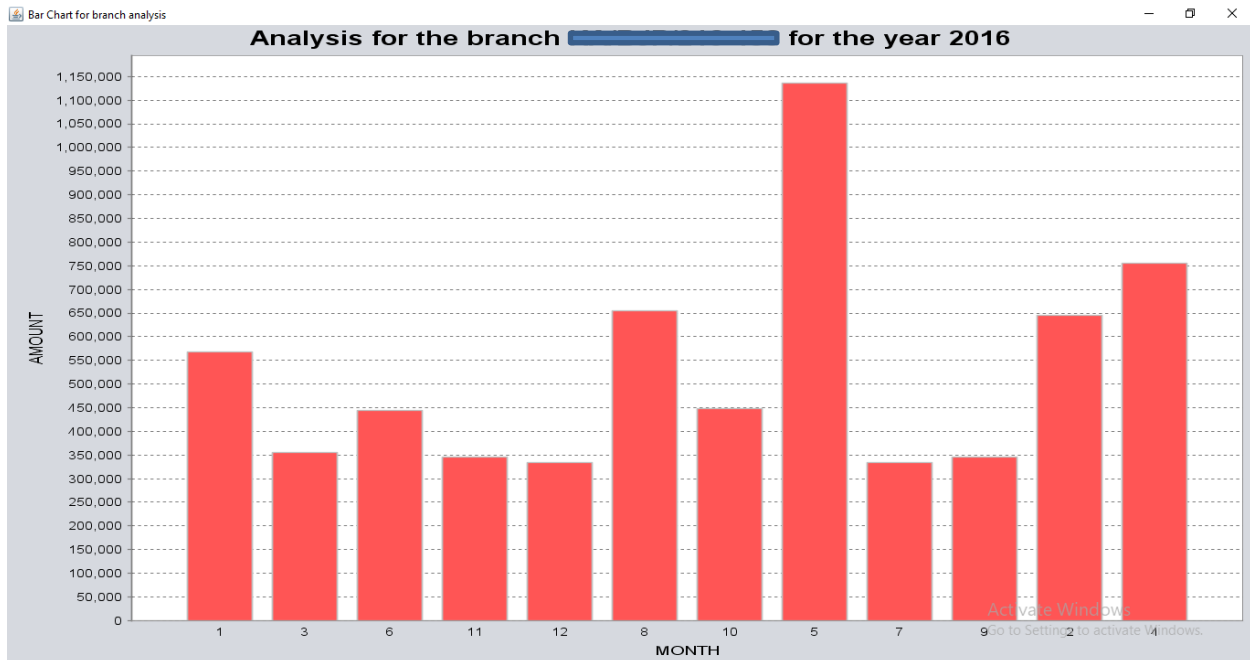


Figure 33: Monthly Income Analysis for the branch ***** for the year 2016

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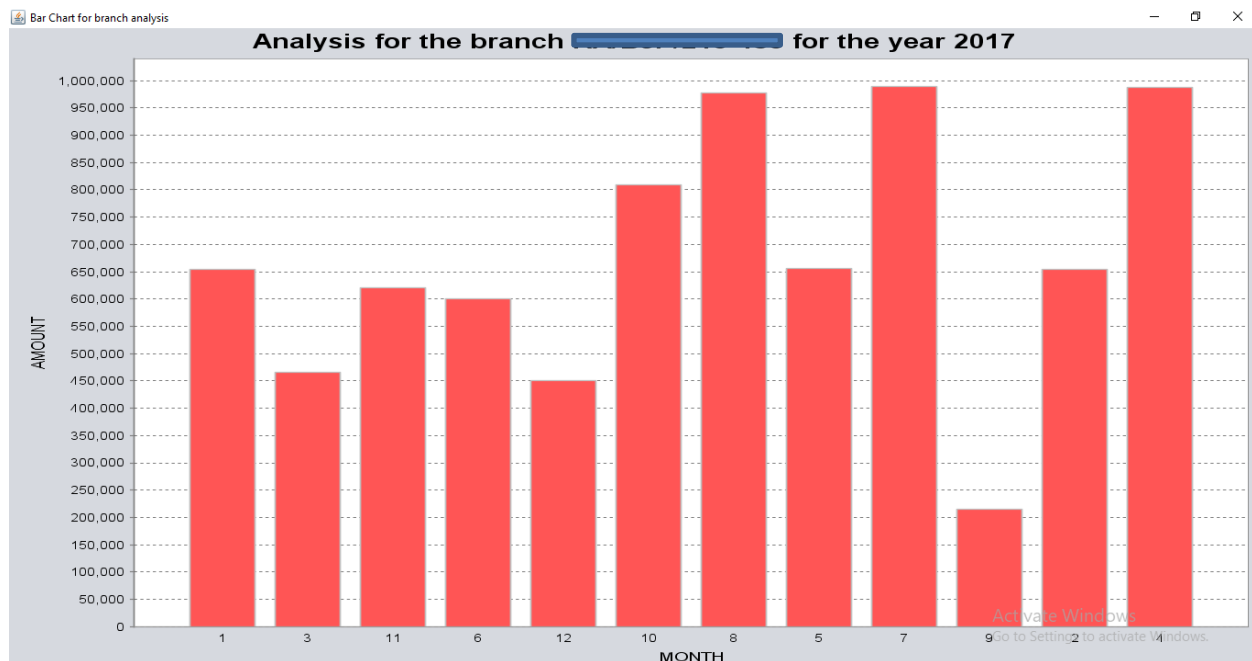


Figure 34 :Monthly Income Analysis for the branch ***** for the year 2017

Submission Date:28/04/2018