A

Project

Report on

Bank Management System

Developed by

Jay Shah - Department of IT, DD University

Arrshi Kandroo- Department of IT, DD University

Guided By

Internal Guide: Prof. Archana Vyas

Department of Information Technology

Faculty of Technology, DD University

Department of Information Technology Faculty of Technology, Dharmsinh Desai University College Road, Nadiad-387001

NOVEMBER – 2020

DHARMSINH DESAI UNIVERSITY

NADIAD-387001, GUJARAT

CERTIFICATE

This is to certify that the project entitled "**BANK MANAGEMENT SYSTEM"** is a bona fide report of the work carried out by

1) **Mr. JAY SHAH**,
   Student ID No: **18ITUON028**
2) **Ms. ARRSHI KANDROO**,
   Student ID No: **18ITUOS073**

of Department of Information Technology, semester V, under the guidance and supervision for the subject Database Management System. They were involved in Project training during academic year 2019-2020.

Prof. Archana N.Vyas
(Project Guide)
Department of Information Technology,
Faculty of Technology,
Dharmsinh Desai University, Nadiad Date:

Prof. Vipul Dabhi
Head, Department of Information Technology,
Faculty of Technology,
Dharmsinh Desai University, Nadiad

Acknowledgement

The success and final outcome of this project required a lot of guidance and assistance from many people and we are extremely privileged to have got this all along the completion of our project. All that we have done is only due to such supervision and assistance and we would not forget to thank them.

We respect and thank **Prof. ARCHANA N.VYAS** for providing us an opportunity to do the project work in DBMS and giving us all support and guidance, which made us complete the project duly. We are extremely thankful to her for providing such a nice support, guidance by taking keen interest in our project, although she had busy schedule managing the lectures.

We would also like to express our special thanks of gratitude to our HOD Prof. Vipul Dabhi who gave us the golden opportunity to do this wonderful project on the **Topic: Bank Management System**. We would also like to thank him for including such things in curriculum making it more interesting and useful practically.

Finally, we would like to thank each and every person who was there around us helping more or less in our project and keeping us motivated to work hard and complete the project. We would also thank them for inspiring us and sharing their ideas and views to make this project a success.

Thanking you

Yours Sincerely,

JAY SHAH (IT - 001)

ARRSHI KANDROO (IT - 006)

TABLE OF CONTENTS

System Overview

1.1 Current System

This is Bank Management System.

- It also allows the customer to register themselves for creating account.
- Account can be of type deposit account, where customer can deposit money either through check, cash or demand draft.
- Customer can transact their money either through check, cash or demand draft.
- Officer manages the transaction of the customers.
- Manager governs the officer.
- Officer creates the loan account for the customers and manager approves the loan account.
- Loan can be home loan, student loan, car loan.
- Interest is for the Recurring Deposit, Fixed Deposit and etc.

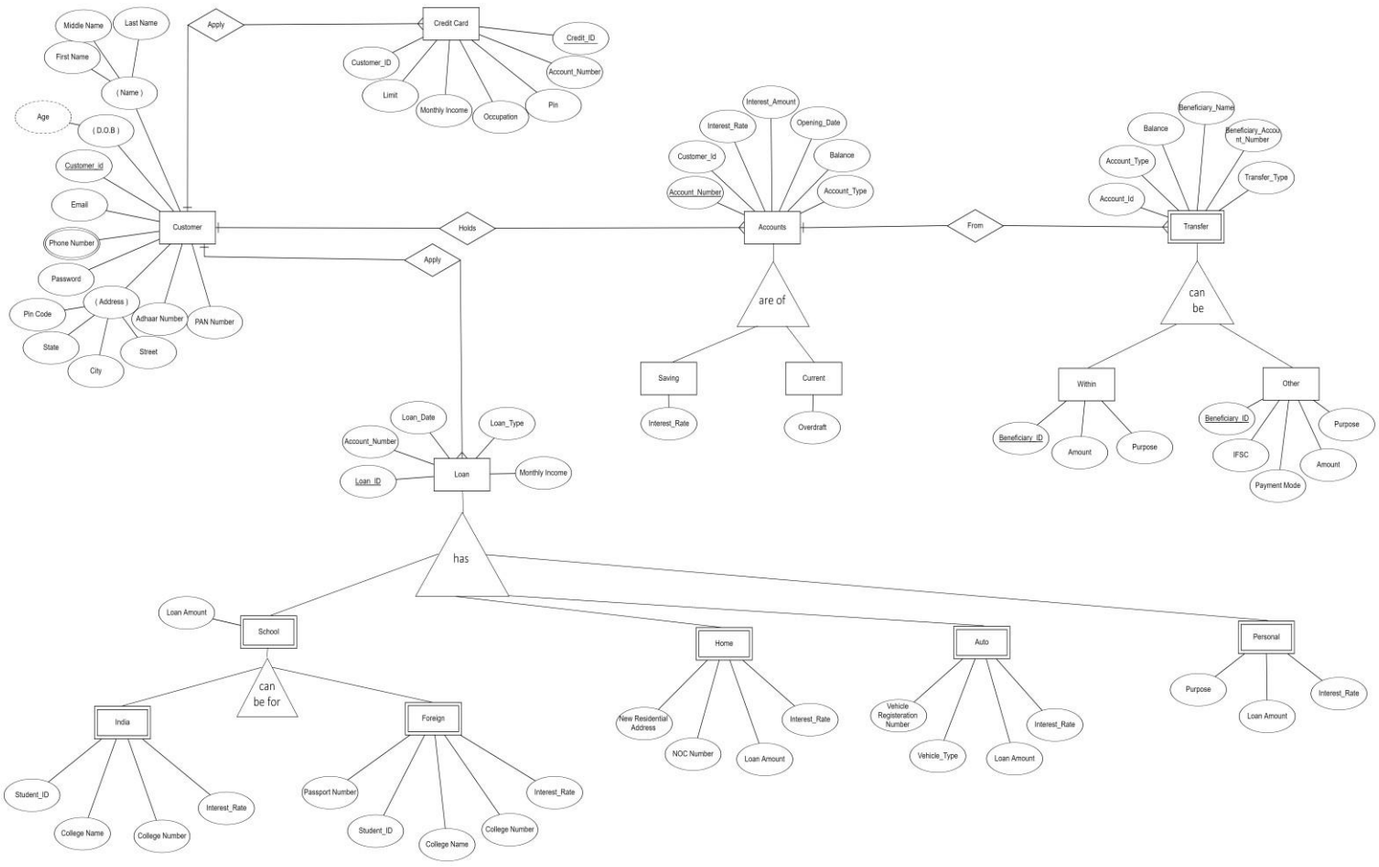
1.2 Objectives of the Proposed System

- Objectives: - We can use it as online banking so that a proper record is maintain. It will ensure fast and safe online transaction and applications. Keeping records becomes easy.
- Scope: - The project will design and develop the new software application for banking management. Modification can be easily done according to requirements as and when necessary.

1.3 Advantages of the proposed system (Over Current)

- Customer can create his/her login profile by filling requested details such as name, email, D.O.B., etc and a password which only customer would know for security purpose.
- Customer can transact money from his/her account to accounts within the bank or other banks.
- A customer can apply for credit card with respect to his eligibility criteria.
- A customer can apply for different sorts of loan. We have given school, auto, home and personal loan as per their respective needs.
- School loan provide two distinctive options for foreign studies or for within India.

2. E-R Diagram



2.1 Entities

Customers
Account
Credit Card
Transfer
Within
Others
Loan Account
School
India
Foreign
Home
Auto
Personal
Savings
Current

DATA DICTIONARY

Customers

Field	Type	Null	Key	Default	Extra
Cust_id	int	NO	PRI	NULL	
First_name	varchar(15)	NO		NULL	
Middle_name	varchar(20)	YES		NULL	
Last_name	varchar(20)	NO		NULL	
DOB	date	YES		NULL	
Gender	char(6)	YES		NULL	
Email	char(45)	YES		NULL	
Phone Number	bigint	NO		NULL	
Aadhaar_No	bigint	NO		NULL	
Nationality	varchar(20)	NO		NULL	
Street	varchar(25)	NO		NULL	
City	varchar(20)	NO		NULL	
State	varchar(15)	NO		NULL	
Pincode	bigint	NO		NULL	
Password	char(30)	NO		NULL	

Account

Field	Type	Null	Key	Default	Extra
Acc_no	bigint	NO	PRI	NULL	
Acc_type	varchar(20)	NO		NULL	
Cust_id	int	NO	MUL	NULL	
Balance	double	NO		NULL	
Interest_Rate	decimal(4,2)	NO		NULL	
Open_date	date	NO		NULL	

Credit_Card

Field	Type	Null	Key	Default	Extra
Credit_id	int	NO	PRI	NULL	
Customer_id	int	NO	MUL	NULL	
Account_number	int	NO		NULL	
Occupation	varchar(30)	NO		NULL	
Monthly_Income	double	NO		NULL	
Pin	int	NO		NULL	
Limit	double	NO		NULL	

Transfer

Field	Type	Null	Key	Default	Extra
Account_id	bigint	NO	MUL	NULL	
Beneficiery_Name	varchar(45)	NO		NULL	
BeneficieryAcc_no	bigint	NO		NULL	
Transfer_type	varchar(45)	NO		NULL	
wBeneficiery_id	int	YES	MUL	NULL	
oBeneficiery_id	int	YES	MUL	NULL	

Within

Field	Type	Null	Key	Default	Extra
Beneficiary_ID	int	NO	PRI	NULL	
Amount	double	NO		NULL	
Purpose	varchar(20)	NO		NULL	

Others

Field	Type	Null	Key	Default	Extra
Beneficiery_id	int	NO	PRI	NULL	
IFSC	varchar(10)	NO		NULL	
Amount	int	NO		NULL	
Payement_Mode	varchar(5)	NO		NULL	
Purpose	varchar(40)	NO		NULL	

Loan_Acc

Field	Type	Null	Key	Default	Extra
Loan_id	varchar(15)	NO	PRI	NULL	
Cust_id	int	NO	PRI	NULL	
Loan_date	date	NO		NULL	
Loan_type	varchar(45)	NO		NULL	
Monthly_income	double	NO		NULL	

NO

School

Field	Type	Null	Key	Default	Extra
Loan_id	varchar(15)	YES	MUL	NULL	
india_student_id	varchar(15)	YES	MUL	NULL	
foreign_student_id	varchar(15)	YES	MUL	NULL	
Loan_amount	double	NO		NULL	

India

Field	Type	Null	Key	Default	Extra
iStudent_id	varchar(15)	NO	PRI	NULL	
College Name	varchar(45)	NO		NULL	
College_number	char(10)	NO		NULL	
Interest_rate	double(4,2)	NO		NULL	

Foreign

Field	Type	Null	Key	Default	Extra
fStudent_id	varchar(15)	NO	PRI	NULL	
Passport_number	int	NO		NULL	
College_name	varchar(45)	NO		NULL	
College_number	int	NO		NULL	
Interest_rate	double(4,2)	NO		NULL	

Home

Field	Type	Null	Key	Default	Extra
Loan_id	varchar(15)	YES	MUL	NULL	
Interest_Rate	double(4,2)	NO		NULL	
Loan_amt	int	NO		NULL	
NOC_no	int	NO		NULL	
Address	varchar(45)	NO		NULL	

Auto

Field	Type	Null	Key	Default	Extra
Vehicle_regs_number	varchar(10)	NO	PRI	NULL	
Loan_id	varchar(15)	YES	MUL	NULL	
Vehicle_type	varchar(25)	NO		NULL	
Loan_amt	double	NO		NULL	
Interest_rate	double(4,2)	NO		NULL	

Personal

Field	Type	Null	Key	Default	Extra
Loan_id	varchar(15)	YES	MUL	NULL	
Purpose	varchar(20)	NO		NULL	
Loan_Amt	double	NO		NULL	
Interest_Rate	double(4,2)	NO		NULL	

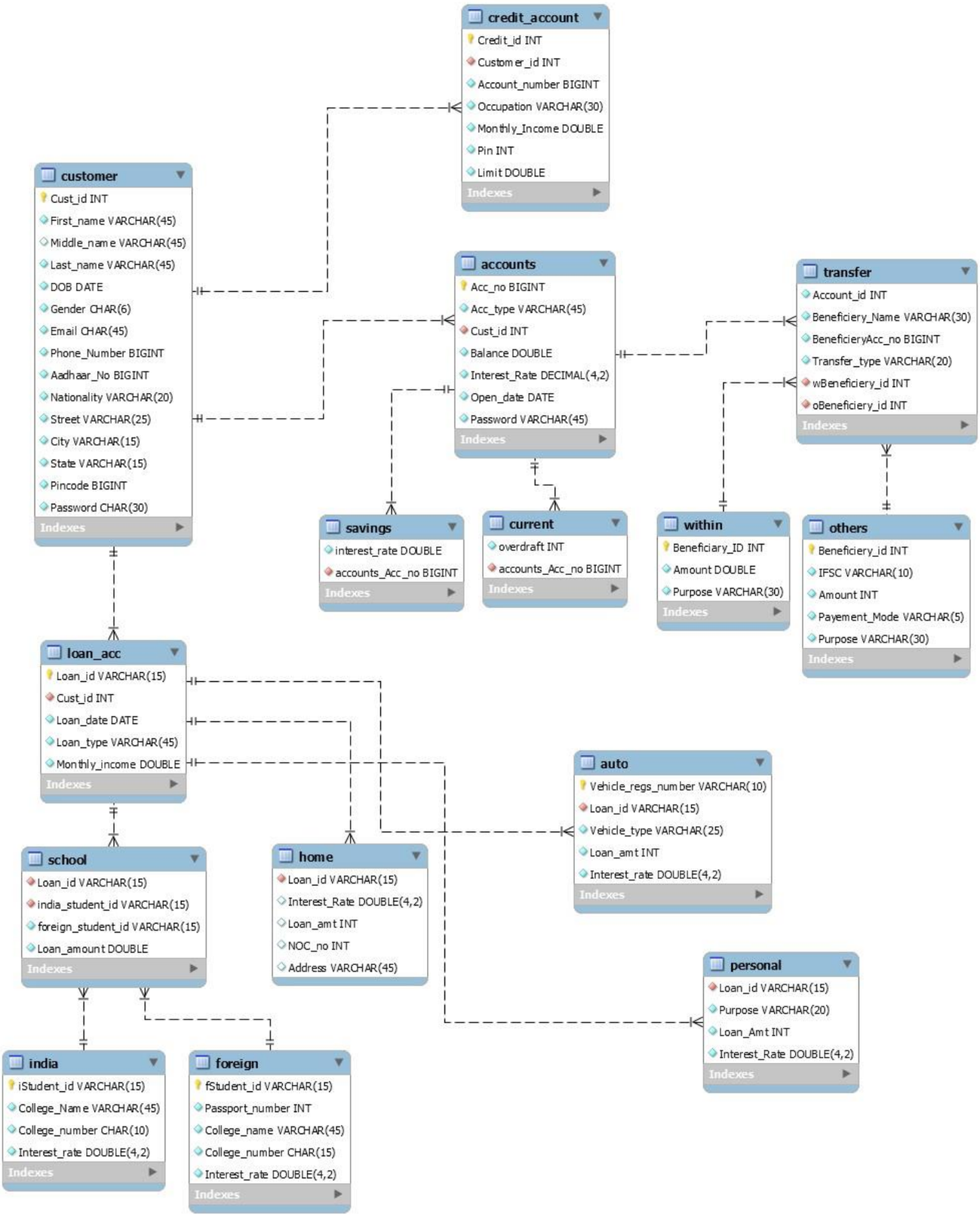
Savings

Field	Type	Null	Key	Default	Extra
Interest_Rate	int	NO		NULL	

Current

Field	Type	Null	Key	Default	Extra
Overdraft_amt	int	NO		NULL	

4. SCHEMA DIAGRAM



5.DATABASE IMPLEMENTATION

5.1 Create Schema

5.1.1 Customers

```
CREATE TABLE `customers` (
  `Cust_id` int NOT NULL,
  `First_name` varchar(15) NOT NULL,
  `Middle_name` varchar(20) DEFAULT NULL,
  `Last_name` varchar(20) NOT NULL,
  `DOB` date DEFAULT NULL,
  `Gender` char(6) DEFAULT NULL,
  `Email` char(45) DEFAULT NULL,
  `Phone Number` bigint NOT NULL,
  `Aadhaar_No` bigint NOT NULL,
  `Nationality` varchar(20) NOT NULL,
  `Street` varchar(25) NOT NULL,
  `City` varchar(20) NOT NULL,
  `State` varchar(15) NOT NULL,
  `Pincode` bigint NOT NULL,
  `Password` char(30) NOT NULL,
  PRIMARY KEY (`Cust_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.2 Accounts

```
CREATE TABLE `account` (
  `Acc_no` bigint NOT NULL,
  `Acc_type` varchar(20) NOT NULL,
  `Cust_id` int NOT NULL,
  `Balance` double NOT NULL,
  `Interest_Rate` decimal(4,2) NOT NULL,
  `Open_date` date NOT NULL,
  PRIMARY KEY (`Acc_no`),
  KEY `Cust_id_idx` (`Cust_id`),
  CONSTRAINT `cust_id` FOREIGN KEY (`Cust_id`) REFERENCES `customers` (`Cust_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.3 Credit_Card

```
CREATE TABLE `credit_card` (
  `Credit_id` int NOT NULL,
  `Customer_id` int NOT NULL,
  `Account_number` int NOT NULL,
  `Occupation` varchar(30) NOT NULL,
  `Monthly_Income` double NOT NULL,
  `Pin` int NOT NULL,
  `Limit` double NOT NULL,
  PRIMARY KEY (`Credit_id`),
  KEY `cust_id3_idx` (`Customer_id`),
  CONSTRAINT `cust_id3` FOREIGN KEY (`Customer_id`) REFERENCES `customers` (`Cust_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.4 Savings

```
CREATE TABLE `savings` (
  `Interest_Rate` int NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.5 Current

```
CREATE TABLE `current` (
  `Overdraft_amt` int NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.6 Transfer

```
CREATE TABLE `transfer` (
  `Account_id` bigint NOT NULL,
  `Beneficiery_Name` varchar(45) NOT NULL,
  `BeneficieryAcc_no` bigint NOT NULL,
  `Transfer_type` varchar(45) NOT NULL,
  `wBeneficiery_id` int DEFAULT NULL,
  `oBeneficiery_id` int DEFAULT NULL,
  KEY `acc_id_idx` (`Account_id`),
  KEY `bene_id_idx` (`wBeneficiery_id`),
```

```
 KEY `bene_id1_idx` (`oBeneficiery_id`),
  CONSTRAINT `acc_id2` FOREIGN KEY (`Account_id`) REFERENCES `account` (`Acc_no`) )
ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.7 Within

```
CREATE TABLE `within` (
  `Beneficiary_ID` int NOT NULL,
  `Amount` double NOT NULL,
  `Purpose` varchar(20) NOT NULL,
  PRIMARY KEY (`Beneficiary_ID`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.8 Others

```
CREATE TABLE `others` (
  `Beneficiery_id` int NOT NULL,
  `IFSC` varchar(10) NOT NULL,
  `Amount` int NOT NULL,
  `Payement_Mode` varchar(5) NOT NULL,
  `Purpose` varchar(40) NOT NULL,
  PRIMARY KEY (`Beneficiery_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.9 Loan_acc

```
CREATE TABLE `loan_acc` (
  `Loan_id` varchar(15) NOT NULL,
  `Cust_id` int NOT NULL,
  `Loan_date` date NOT NULL,
  `Loan_type` varchar(45) NOT NULL,
  `Monthly_income` double NOT NULL,
  PRIMARY KEY (`Loan_id`,`Cust_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.10 School

```
CREATE TABLE `school` (

`Loan_id` varchar(15) DEFAULT NULL,
```

```
  `india_student_id` varchar(15) DEFAULT NULL,
  `foreign_student_id` varchar(15) DEFAULT NULL,
  `Loan_amount` double NOT NULL,
  KEY `loan_id2_idx` (`Loan_id`),
  KEY `istudent_id_idx` (`india_student_id`),
  KEY `fstudent_id_idx` (`foreign_student_id`),
  CONSTRAINT `fstudent_id` FOREIGN KEY (`foreign_student_id`) REFERENCES `abroad` (`fStudent_id`),
  CONSTRAINT `istudent_id` FOREIGN KEY (`india_student_id`) REFERENCES `india` (`iStudent_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.11 India

```
CREATE TABLE `india` (
  `iStudent_id` varchar(15) NOT NULL,
  `College Name` varchar(45) NOT NULL,
  `College_number` char(10) NOT NULL,
  `Interest_rate` double(4,2) NOT NULL,
  PRIMARY KEY (`iStudent_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.12 Abroad

```
CREATE TABLE `abroad` (
  `fStudent_id` varchar(15) NOT NULL,
  `Passport_number` int NOT NULL,
  `College_name` varchar(45) NOT NULL,
  `College_number` int NOT NULL,
  `Interest_rate` double(4,2) NOT NULL,
  PRIMARY KEY (`fStudent_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.13 Home

```
CREATE TABLE `home` (
  `Loan_id` varchar(15) DEFAULT NULL,
  `Interest_Rate` double(4,2) NOT NULL,
  `Loan_amt` int NOT NULL,
  `NOC_no` int NOT NULL,
```

```
  `Address` varchar(45) NOT NULL,


 KEY `loan_id1_idx` (`Loan_id`),
  CONSTRAINT `loan_id2` FOREIGN KEY (`Loan_id`) REFERENCES `loan_acc` (`Loan_id`) )
ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.14 Auto

```
CREATE TABLE `auto` (
  `Vehicle_regs_number` varchar(10) NOT NULL,
  `Loan_id` varchar(15) DEFAULT NULL,
  `Vehicle_type` varchar(25) NOT NULL,
  `Loan_amt` double NOT NULL,
  `Interest_rate` double(4,2) NOT NULL,
  PRIMARY KEY (`Vehicle_regs_number`),
  KEY `loan_id3_idx` (`Loan_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.1.15 Personal

```
CREATE TABLE `personal` (
  `Loan_id` varchar(15) DEFAULT NULL,
  `Purpose` varchar(20) NOT NULL,
  `Loan_Amt` double NOT NULL,
  `Interest_Rate` double(4,2) NOT NULL,
  KEY `loan_id4_idx` (`Loan_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci
```

5.2 INSERT DATA VALUE

5.2.1 Customers

INSERT INTO Customer
(Cust_id,First_name,Middle_name,Last_name,DOB,Gender,Email,Phone Number,Adhaar_No,Nationality,Street,City,State,Pincode,Password)

VALUES (1000, 'Jay', 'Bhaveshkumar', 'Shah', ‘2000-07-18’,'Male','jayshah3600@gmail.com',9974062039,1234456781112,'Indian','Sector 7,119C','Jamnagar','Gujarat',361142, jayshah123);

INSERT INTO Customer
(Cust_id,First_name,Middle_name,Last_name,DOB,Gender,Email,Phone Number,Adhaar_No,Nationality,Street,City,State,Pincode,Password)

VALUES (1001, 'Arrshi', 'null', 'Kandroo', 2000-01-09,'Female','kandrooarrshi@gmail.com',9682342361,432111148888,'Indian','304 A,Kalyan Society','Baroda', 'Gujarat',390002, arrshi0901);

INSERT INTO Customer
(Cust_id,First_name,Middle_name,Last_name,DOB,Gender,Email,Phone Number,Adhaar_No,Nationality,Street,City,State,Pincode,Password)

VALUES (1002, 'Ronak', 'Vishalbhai', 'Agnani', 2000-11-04,'Male','rvagnani04@gmail.com',9428849517,873473412695,'Indian','31A,Dharnidhar Society','Baroda' ,'Gujarat',390002, rvfboy0411f);

INSERT INTO Customer
(Custid,First_name,Middle_name,Last_name,DOB,Gender,Email,Phone Number,Adhaar_No,Nationality,Street,City,State,Pincode,Password)

VALUES (1003, 'Deep', 'null', 'Detroja', 2000-08-21,'Male','deepdetroja@gmail.com',7016104182,323482929475,'Indian','Sector 8,124A','Jamnagar','Gujarat',361142, bbforever22);

INSERT INTO Customer
(Custid,First_name,Middle_name,Last_name,DOB,Gender,Email,Phone Number,Adhaar_No,Nationality,Street,City,State,Pincode,Password)

VALUES (1004, 'Drashti', 'null', 'Bhingradiya', 2000-08-28,'Female','bhingradiyadrashti@gmail.com',9586693357,294728391392,'Indian','50B,Shivalik ' ,'Surat','Gujarat',335009, drastii123);

INSERT INTO Customer
(Custid,First_name,Middle_name,Last_name,DOB,Gender,Email,Phone Number,Adhaar_No,Nationality,Street,City,State,Pincode,Password)

VALUES (1005, 'Ram', 'null', 'Sharma', 1994-04-12,'Male','ramsharma@hotmail.com',9435103901,302421329012,'Indian','20,Shantigram Bunglow','Ahmedabad','Gujarat',390004, ramabc123);

INSERT INTO Customer
(Custid,First_name,Middle_name,Last_name,DOB,Gender,Email,Phone Number,Adhaar_No,Nationality,Street,City,State,Pincode,Password)

VALUES (1006, 'Sarah', 'null', 'Fernandez', 1993-11-20,'Female','sarahf@rediffmail.com',8923130138,394792419137,'Indian','48B,Shaligham Plush', 'Mumbai' ,'Maharashtra',230052, sarahfer20);

Cust_id	First_name	Middle_name	Last_name	DOB	Gender	Email	Phone Number	Aadhaar_No	Nationality	Street	City	State	Pincode	Password
1000	Jay	Bhaveshkumar	Shah	2000-07-18	Male	jayshah3600@gmail.com	9974062039	123456781112	Indian	Sector 7,119C	Jamnagar	Gujarat	361142	jayshah123
1001	Arrshi	NULL	Kandroo	2000-01-09	Female	kandrooarrshi09@gmail.com	9682342361	432111148888	Indian	304 A,Kalyan Society	Baroda	Gujarat	390002	arrshi0901
1002	Ronak	Vishalbhai	Agnani	2000-11-04	Male	rvagnani04@gmail.com	9428849517	873473412695	Indian	31A,Dharnidhar Society	Nadiad	Gujarat	387001	rvfboy0411
1003	Deep	NULL	Detroja	2000-08-21	Male	deepdetroja@gmail.com	7016104182	323482929475	Indian	Sector 8,124A	Jamnagar	Gujarat	361142	bbforever22
1004	Drashti	NULL	Bhingradiya	2000-08-28	Female	bhingradiyadrashti@gmail.com	9586693357	294728391392	Indian	50B ,Shivalik	Surat	Gujarat	335009	drastii123
1005	Ram	NULL	Sharma	1994-04-12	Male	ramsharma@hotmail.com	9435103901	302421329012	Indian	20 , Shantigram Bunglow	Ahmedabad	Gujarat	390004	ramabc123
1006	Sarah	NULL	Fernandez	1993-11-20	Female	sarahf@rediffmail.com	8923130138	394792419137	Indian	48B,Shaligram Plush	Mumbai	Mahar...	230052	sarahfer20
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

5.2.2 Credit_Card

INSERT INTO Credit_card
(Credit_id,Customerid,Account_number,Occupation,Monthly_Income, Pin,Limit) VALUES (2000, 1000, 55432176, 'SDE', 60000, 1718, 20000);

INSERT INTO Credit_card
(Credit_id,Customerid,Account_number,Occupation,Monthly_Income,Pin,Limit)

VALUES (2001, 1001, 498754283, 'Accountant', 50000, 2323, 12000);

INSERT INTO Credit_card
(Credit_id,Customerid,Account_number,Occupation,Monthly_Income,Pin,Limit)

VALUES (2002, 1002, 28942984, 'Senior Supervisor', 75000, 4589, 30000);

INSERT INTO Credit_card
(Credit_id,Customerid,Account_number,Occupation,Monthly_Income, Pin,Limit) VALUES (2003, 1003, 2894299148, 'SDE', 70000, 9568, 25000); INSERT INTO Credit_card
(Credit_id,Customerid,Account_number,Occupation,Monthly_Income, Pin,Limit)

VALUES (2004, 1004, 2390231, 'General Manager', 90000, 4852, 35000);

Credit_id	Customer_id	Account_number	Occupation	Monthly_Income	Pin	Limit
2000	1000	55432176	SDE	60000	1718	20000
2001	1001	498754283	Accountant	50000	2323	12000
2002	1002	28942984	Senior Supervisor	75000	4589	30000
2003	1003	294299148	SDE	70000	9568	25000
2004	1004	2390231	General Manager	90000	4852	35000
NULL	NULL	NULL	NULL	NULL	NULL	NULL

5.2.3 Account

INSERT INTO Account (Acc_no,Acc_type,Cust-id,Balance,Interest_rate,Open_date)

VALUES (239023134912, 'Savings', 1002, 30000, 6.84,2019-11-04);

INSERT INTO Account (Acc_no,Acc_type,Cust-id,Balance,Interest_rate,Open_date)

VALUES (289429842039, 'Current', 1002, 80000.5, 11.82,2020-07-12);

INSERT INTO Account (Acc_no,Acc_type,Cust-id,Balance,Interest_rate,Open_date)

VALUES (294299148121, 'Current', 1003, 65000, 10.25,2019-09-20);

INSERT INTO Account (Acc_no,Acc_type,Cust-id,Balance,Interest_rate,Open_date)

VALUES (498754283165, 'Savings', 1001, 55000, 9.40,2020-07-21);

INSERT INTO Account (Acc_no,Acc_type,Cust-id,Balance,Interest_rate,Open_date)

VALUES (554321762910, 'Savings', 1000, 50000, 7.23,2020-08-10);

Acc_no	Acc_type	Cust_id	Balance	Interest_Rate	Open_date
239023134912	Savings	1002	30000	6.84	2019-11-04
289429842039	Current	1002	80000.5	11.82	2020-07-12
294299148121	Current	1003	65000	10.25	2019-09-20
498754283165	Savings	1001	55000	9.40	2020-07-21
554321762910	Savings	1000	50000	7.23	2020-08-10
NULL	NULL	NULL	NULL	NULL	NULL

5.2.4 Transfer

INSERT INTO Transfer (Account_id,Beneficiery_Name,BeneficieryAcc_no,Transfer_type,wBeneficiery_id,oBeneficier y_id)

VALUES (239023134912, 'Bhavesh Shah', 291728311146, 'Within', 100, 'null');

INSERT INTO Transfer (Account_id,Beneficiery_Name,BeneficieryAcc_no,Transfer_type,wBeneficiery_id,oBeneficier y_id)
VALUES (239023134912, 'Meet Savsani', 239842831329, 'Within', 100, 'null');

```
INSERT INTO Transfer
(Account_id,Beneficiery_Name,BeneficieryAcc_no,Transfer_type,wBeneficiery_id,oBeneficiery_id)
VALUES (498754283165, 'Sarah James', 393842914202, 'Others', Null, 5000);

INSERT INTO Transfer
(Account_id,Beneficiery_Name,BeneficieryAcc_no,Transfer_type,wBeneficiery_id,oBeneficiery_id)
VALUES (554321762910, 'Sarah James', 393842914202, 'Others', Null, 5001);

INSERT INTO Transfer
(Account_id,Beneficiery_Name,BeneficieryAcc_no,Transfer_type,wBeneficiery_id,oBeneficiery_id)
VALUES (294299148121, 'Suresh Mehta', 203924914202, 'Others', Null, 5001);
```

Account_id	Beneficiery_Name	BeneficieryAcc_no	Transfer_type	wBeneficiery_id	oBeneficiery_id
239023134912	Bhavesh Shah	291728311146	Within	100	NULL
239023134912	Meet Savsani	239842831329	Within	100	NULL
498754283165	Sarah James	393842914202	Others	NULL	5000
554321762910	Sarah James	393842914202	Others	NULL	5001
294299148121	Suresh Mehta	203924914202	Others	NULL	5001

5.2.5 Within

```
INSERT INTO Within (Beneficiery_ID,Amount,Purpose)
VALUES (100, 10000, 'Tution Fees');

INSERT INTO Within (Beneficiery_ID,Amount,Purpose)
VALUES (101, 20000, 'Others');

INSERT INTO Within (Beneficiery_ID,Amount,Purpose)
VALUES (102, 500, 'Transfer');

INSERT INTO Within (Beneficiery_ID,Amount,Purpose)
VALUES (103, 40000, 'Others');

INSERT INTO Within (Beneficiery_ID,Amount,Purpose)
VALUES (104, 20000, 'Tution Fees');
```

Beneficiary_ID	Amount	Purpose
100	10000	Tution Fees
101	20000	Others
102	500	Tranfer
103	40000	Others
104	20000	Tution Fees
NULL	NULL	NULL

5.2.6 Others

INSERT INTO Others (Beneficiery_id,IFSC,Amount,Payment_Mode,Purpose) VALUES (5000, ICIC000169, 2500, 'NEFT', 'Exam Fees');

INSERT INTO Others (Beneficiery_id,IFSC,Amount,Payment_Mode,Purpose) VALUES (5001, HDFC000422, 20000, 'NEFT', 'Emigration Consultancy Fees');

INSERT INTO Others (Beneficiery_id,IFSC,Amount,Payment_Mode,Purpose) VALUES (5002, KDKB003772, 12500, 'RTGS', 'Others');

INSERT INTO Others (Beneficiery_id,IFSC,Amount,Payment_Mode,Purpose) VALUES (5003, KDKB000652, 30000, 'IMPS', 'Others');

Beneficiery_id	IFSC	Amount	Payement_Mode	Purpose
5000	ICIC000169	2500	NEFT	Exam Fees
5001	HDFC000422	20000	NEFT	Emigration Consultancy Fees
5002	KDKB003772	12500	RTGS	Others
5003	KDKB000652	30000	IMPS	Others
NULL	NULL	NULL	NULL	NULL

5.2.7 Loan_acc

INSERT INTO Loan_acc (Loan_id,Cust_id,Loan_date,Loan_type,Monthly_income) VALUES ('QW001', 1000, 2019-10-09, 'Auto', 40000);

```
INSERT INTO Loan_acc (Loan_id,Cust_id,Loan_date,Loan_type,Monthly_income) VALUES ('QW002', 1000, 2020-10-08, 'Personal', 40000);

INSERT INTO Loan_acc (Loan_id,Cust_id,Loan_date,Loan_type,Monthly_income) VALUES ('QW003', 1002, 2018-10-04, 'Personal', 20000);

INSERT INTO Loan_acc (Loan_id,Cust_id,Loan_date,Loan_type,Monthly_income) VALUES ('QW004', 1004, 2020-09-20, 'Home', 70000);

INSERT INTO Loan_acc (Loan_id,Cust_id,Loan_date,Loan_type,Monthly_income) VALUES ('QW005', 1004, 2020-10-01, 'School', 70000);

INSERT INTO Loan_acc (Loan_id,Cust_id,Loan_date,Loan_type,Monthly_income) VALUES ('QW006', 1003, 2020-01-13, 'Auto', 60000);

INSERT INTO Loan_acc (Loan_id,Cust_id,Loan_date,Loan_type,Monthly_income) VALUES ('QW007', 1001, 2018-04-19, 'Auto', 80000);

INSERT INTO loan_acc(`Loan_id`, `Cust_id`, `Loan_date`, `Loan_type`, `Monthly_income`) VALUES ('QW008', '1005', '2019-05-20', 'School', '120000');

INSERT INTO loan_acc(`Loan_id`, `Cust_id`, `Loan_date`, `Loan_type`, `Monthly_income`) VALUES ('QW009', '1006', '2017-10-10', 'School', '75000');

INSERT INTO loan_acc(`Loan_id`, `Cust_id`, `Loan_date`, `Loan_type`, `Monthly_income`) VALUES ('QW010', '1002', '2019-11-12', 'School', '20000');
```

Loan_id	Cust_id	Loan_date	Loan_type	Monthly_income
QW001	1000	2019-10-09	Auto	40000
QW002	1000	2020-10-08	Personal	40000
QW003	1002	2018-10-04	Personal	20000
QW004	1004	2020-09-20	Home	70000
QW005	1004	2020-10-01	School	70000
QW006	1003	2020-01-13	Auto	60000
QW007	1001	2018-04-19	Auto	80000
QW008	1005	2019-05-20	School	120000
QW009	1006	2017-10-10	School	75000
QW010	1002	2019-11-12	School	20000

5.3.8 Personal

INSERT INTO Personal (Loan_id,Purpose,Loan_Amt,Interest_Rate) VALUES

('QW002', 'Marriage', 200000, 7.74);

INSERT INTO Personal (Loan_id,Purpose,Loan_Amt,Interest_Rate)

VALUES ('QW003', 'Trip', 200000, 6.32);

Loan_id	Purpose	Loan_Amt	Interest_Rate
QW002	Marriage	200000	7.74
QW003	Trip	200000	6.32

5.3.9 Auto

INSERT INTO Auto (Vehicle_regs_number,Loan_id,Vehicle_type,Loan_amt,Interest_Rate)

VALUES ('HNDACTIVA12', 'QW006', SCOOTY, 50000, 8.44);

INSERT INTO Auto (Vehicle_regs_number,Loan_id,Vehicle_type,Loan_amt,Interest_Rate)

VALUES ('MSSWFT1240', 'QW001', CAR, 400000, 9.23);

INSERT INTO Auto (Vehicle_regs_number,Loan_id,Vehicle_type,Loan_amt,Interest_Rate)

VALUES ('SKIGXR4431', 'QW007', BIKE, 85000, 9.13);

Vehicle_regs_number	Loan_id	Vehicle_type	Loan_amt	Interest_rate
HNDACTVA12	QW006	SCOOTY	50000	8.44
MSSWFT1240	QW001	CAR	400000	9.23
SKIGXR4431	QW007	BIKE	85000	9.13
NULL	NULL	NULL	NULL	NULL

5.3.10 Home

INSERT INTO Home (Loan_id , Interest_Rate, Loan_amt,NOC no, Addresses)

VALUES

('QW004 , 11.20, 3000000, 'Block 32, Royal Heights, Jamnagar');

Loan_id	Interest_Rate	Loan_amt	NOC_no	Address
QW004	11.20	3000000	12001	Block 32,Royal Heights, Jamnagar

5.3.11 School

INSERT INTO School (Loan_id , India_student_id, foreign_student_id, Loan_amount)

VALUES('QW005', '18ITUON028', 'null', 120000);

```
INSERT INTO School (Loan_id , India_student_id, foreign_student_id, Loan_amount)
VALUES('QW008', '18CS32', 'null', 300000);

INSERT INTO School (Loan_id , India_student_id, foreign_student_id, Loan_amount)
VALUES('QW009', '18ITUON028', 'null', 120000);

INSERT INTO School (Loan_id , India_student_id, foreign_student_id, Loan_amount)
VALUES('QW009', 'null', '17TUCS04', 1500000);

INSERT INTO School (Loan_id , India_student_id, foreign_student_id, Loan_amount)
VALUES('QW010', 'null', '19DU028', 800000);
```

Loan_id	india_student_id	foreign_student_id	Loan_amount
QW005	18ITUON028	NULL	120000
QW008	18CS32	NULL	300000
QW009	NULL	17TUCS04	1500000
QW010	NULL	19DU028	800000

5.3.12 India

```
INSERT INTO India (iStudent_id,College_name,College_number,Interest_rate)
VALUES('18CS32', 'Nirma University', 023812, 12.29);

INSERT INTO India (iStudent_id,College_name,College_number,Interest_rate)
VALUES('18ITUON028', 'DD University', 209321, 13.56);
```

iStudent_id	College Name	College_number	Interest_rate
18CS32	Nirma Univesity	023812	12.29
18ITUON028	DD University	209321	13.56
NULL	NULL	NULL	NULL

5.3.13 Abroad

```
INSERT INTO Abroad
(fStudent_id,Passport_number,College_name,College_number,Interest_rate)
VALUES('17TUCS04', 20328336, 'Torronto University', 293833, 17.11);

INSERT INTO Abroad
(fStudent_id,Passport_number,College_name,College_number,Interest_rate)
VALUES('19DU028', 29283721, 'Duke University', 23921, 15.39);
```

fStudent_id	Passport_number	College_name	College_number	Interest_rate
17TUCS04	20328336	Torronto University	293833	17.11
19DU028	29283721	Duke University	23921	15.39
NULL	NULL	NULL	NULL	NULL

5.3 QUERIES

5.3.1 Display All the Information of Customers whose name starts with D.

select * from customers where

First_name LIKE('D%');

Cust_id	First_name	Middle_name	Last_name	DOB	Gender	Email	Phone Number	Aadhaar_No	Nationality	Street	City	State	Pincode	Password
1003	Deep	NULL	Detroja	2000-08-21	Male	deepdetroja@gmail.com	7016104182	323482929475	Indian	Sector 8,124A	Jamnagar	Gujarat	361142	bbforever22
1004	Drashti	NULL	Bhingradiya	2000-08-28	Female	bhingradiyadrashti@gmail.com	9586693357	294728391392	Indian	50B ,Shivalik	Surat	Gujarat	335009	drastii123
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

5.3.2 Display All the Information of Personal Loan where Interest Rate is between 6 and 7.

select * from personal

where Interest_Rate BETWEEN 6 and 7;

Loan_id	Purpose	Loan_Amt	Interest_Rate
QW003	Trip	200000	6.32

5.3.3 Display Customer id, maximum salary from the Account.

select Cust_id , max(monthly_income) as Max_income from loan_acc;

Cust_id	Max_income
1000	80000

5.3.4 Display Customer id and Count of loans taken by each Customers.

select Cust_id,count(Loan_type) as Total_Loan from loan_acc

group by Cust_id order by Cust_id;

Cust_id	Total_Loan
1000	2
1001	1
1002	2
1003	1
1004	2
1005	1
1006	1

5.3.5 Display all information of loan account, purpose, loan amount and interest rate from personal loan account.

select c.*, p.purpose, p.loan_amt,p.interest_rate from loan_acc c

inner join personal p on c.Loan_id = p.loan_id;

Loan_id	Cust_id	Loan_date	Loan_type	Monthly_income	purpose	loan_amt	interest_rate
QW002	1000	2020-10-08	Personal	40000	Marriage	200000	7.74
QW003	1002	2018-10-04	Personal	20000	Trip	200000	6.32

5.3.6 Display customers information, date of loan, loan type, personal loan amount, interest rate and purpose of personal loan.

select c.* , l.loan_id,l.loan_date,loan_type, p.loan_amt,p.interest_rate,p.purpose from customers c inner join loan_acc l on c.Cust_id = l.cust_id inner join personal p on l.loan_id = p.loan_id;

Cust_id	First_name	Middle_name	Last_name	DOB	Gender	Email	Phone Number	Aadhaar_No	Nationality	Street	City	State	Pincode	Password	loan_id	loan_date	loan_type	loan_amt	in
1000	Jay	Bhaveshkumar	Shah	2000-07-18	Male	jayshah3600@gmail.com	9974062039	123456781112	Indian	Sector 7,119C	Jamnagar	Gujarat	361142	jayshah123	QW002	2020-10-08	Personal	200000	7.7
1002	Ronak	Vishalbhai	Agnani	2000-11-04	Male	rvagnani04@gmail.com	9428849517	873473412695	Indian	31A,Dharnidhar Society	Nadiad	Gujarat	387001	rvfboy0411	QW003	2018-10-04	Personal	200000	6.3

5.3.7 Display all information of loan_acc whose monthly income is greater than Customer id 1000.

select * from loan_acc where monthly_income>(Select Monthly_income from loan_acc where cust_id=1000 && loan_id='QW001') group by cust_id;

Loan_id	Cust_id	Loan_date	Loan_type	Monthly_income
QW004	1004	2020-09-20	Home	70000
QW006	1003	2020-01-13	Auto	60000
QW007	1001	2018-04-19	Auto	80000
QW008	1005	2019-05-20	School	120000
QW009	1006	2017-10-10	School	75000
NULL	NULL	NULL	NULL	NULL

5.3.8 Display all information of loan account where loan is Auto and monthly income is greater than 50000.

```
select l.* from loan_acc l right
join auto on l.loan_id =
auto.loan_id where
l.monthly_income > 50000;
```

Loan_id	Cust_id	Loan_date	Loan_type	Monthly_income
QW006	1003	2020-01-13	Auto	60000
QW007	1001	2018-04-19	Auto	80000

5.3.9 Display Customer id , first name , last name , DOB whose loan type is Personal.

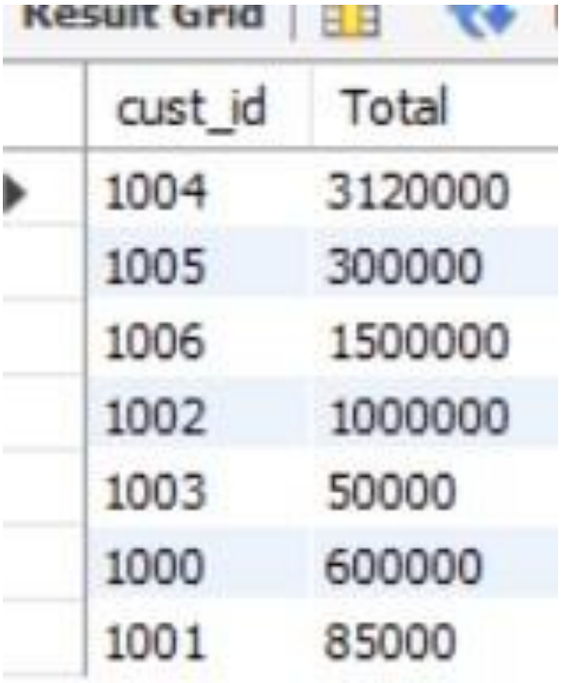
```
select c.cust_id , first_name , last_name, DOB from customers c
left join loan_acc on loan_acc.cust_id = c.cust_id where
loan_acc.loan_type = 'personal';
```

cust_id	first_name	last_name	DOB
1000	Jay	Shah	2000-07-18
1002	Ronak	Agnani	2000-11-04

5.3.10 Display Customer id and total loan amount of each customer.

```
select cust_id , sum(Total) as  Total from(Select l.cust_id ,
sum(h.loan_amt) as Total from loan_acc l join home h on
l.loan_id = h.loan_id
group by l.cust_id, h.loan_id UNION
```

```
Select l.cust_id , sum(s.loan_amount) as Total from loan_acc l
join school s on l.loan_id = s.loan_id group by l.cust_id,
s.loan_id UNION
Select l.cust_id , sum(a.loan_amt) as Total from loan_acc l
join auto a on l.loan_id = a.loan_id group by l.cust_id,
a.loan_id UNION
Select l.cust_id , sum(p.loan_amt) as Total from loan_acc l
join personal p  on l.loan_id = p.loan_id group by
l.cust_id, p.loan_id) temp
Group by Cust_id;
```



Result Grid

cust_id	Total
1004	3120000
1005	300000
1006	1500000
1002	1000000
1003	50000
1000	600000
1001	85000

5.4 PLSQL

5.4.1 Display the Amount Credited and Debited from one Account to Other. Beneficiary Account should be Credited and Account from transfer is occurring should be Debited. If transfer is within same Bank then display transferred amount in Within and if transfer is in another Bank then display transferred amount in Other.

```
declare   i

account%rowtype;

a transfer%rowtype;

p within%rowtype;

k others%rowtype;

begin

k.beneficiery_id := 5000;

a.beneficieryacc_no := 498754283165;

k.IFSC := 'ICIC000169';

k.Payement_Mode := 'NEFT';

k.Purpose := 'Exam Fees';

i.acc_no :=554321762910;

a.transfer_type := 'others';

p.beneficiary_id :=0;

p.amount :=0;

p.purpose :='-';

k.amount :=5000;


if a.transfer_type = 'others'

then select balance into i.balance from account where acc_no = i.acc_no;

i.balance := i.balance - k.amount;

update account set balance = i.balance where acc_no = i.acc_no;

select balance into i.balance from account where acc_no = a.beneficieryacc_no;

i.balance := i.balance + k.amount;

update account set balance = i.balance where acc_no = a.beneficieryacc_no; else

select balance into i.balance from account where acc_no = i.acc_no;

i.balance := i.balance - p.amount;
```

```
update account set balance = i.balance where acc_no = i.acc_no;  end
if;
if k.amount>i.balance then
Raise_application_error(-20456,'The balance is too low for transfer'); end
if;
insert into within values(p.beneficiary_id, p.amount, p.purpose);
insert into others values(k.beneficiery_id,k.ifsc, k.amount,k.payement_mode,k.purpose);
commit;  end;
```

Before Execution

ACC_NO	ACC_TYPE	CUST_ID	BALANCE	INTEREST_RATE	OPEN_DATE
554321702910	Savings	1000	50000	7.23	10-AUG-20
204200148121	Current	1003	65001	10.25	20-SEP-19
239023134912	Savings	1002	40000	6.84	04-NOV-19
280420842039	Current	1002	80001	11.82	12-JUL-20
498754283165	Savings	1001	50000	9.4	21-JUL-20

Download CSV
5 rows selected.

After Execution

ACC_NO	ACC_TYPE	CUST_ID	BALANCE	INTEREST_RATE	OPEN_DATE
554321702910	Savings	1000	45000	7.23	10-AUG-20
204200148121	Current	1003	65001	10.25	20-SEP-19
239023134912	Savings	1002	40000	6.84	04-NOV-19
280420842039	Current	1002	80001	11.82	12-JUL-20
498754283165	Savings	1001	55000	9.4	21-JUL-20

Download CSV
5 rows selected.

BENEFICIERY_ID	IFSC	AMOUNT	PAYEMENT_MODE	PURPOSE
5000	ICIC000169	5000	NEFT	Exam Fees

Download CSV

5.4.2 Functions

5.4.2.1 To count the total no of customers.

```
create or replace function totalcustomers  return
number is total number(2):= 0;
 BEGIN SELECT count(*) into total FROM customers;
 RETURN total;
 END;
DECLA
RE
c
numbe
r(2);
BEGIN
c :=
total
Custo
mers(
);
dbms_
outpu
t.put
_line
('Tot
al
no.
of
Custo
mers:
' ||
c);
END;
```

Before Execution

CREDIT_ID	CUSTOMER_ID	ACCOUNT_NUMBER	OCCUPATION	MONTHLY_INCOME	PIN	LIMIT
2000	1000	554321764	SDE	60000	1710	20000
2001	1001	498754283	Accountant	50000	2323	12000
2002	1002	289429840	Senior Supervisor	75000	4589	30000
2003	1003	294200148	SDE	70000	0568	25000

Download CSV

4 rows selected.

After Execution

```
1  DECLARE
2     c number(2);
3  BEGIN
4     c := totalCustomers();
5     dbms_output.put_line('Total no. of Customers: ' || c);
6  END;
```

```
Statement processed.
Total no. of Customers: 4
```

5.4.3 Cursor

5.4.3.1 Display the Customer id , First Name , Last Name , Email id of the Customers.

DECLARE

cust_id customers.cust_id%type;

f_name customers.first_name%type;

l_name customers.last_name%type;

email customers.email%type; CURSOR

c_customers is

SELECT cust_id, first_name,last_name,email FROM customers order by cust_id;

BEGIN

OPEN c_customers;

LOOP

FETCH c_customers into cust_id, f_name,l_name, email;

EXIT WHEN c_customers%notfound;

dbms_output.put_line(cust_id || ' ' || f_name || ' ' || l_name || ' ' || email);

END LOOP;

CLOSE c_customers;

END;

```
DECLARE
   cust_id customers.cust_id%type;
   f_name customers.first_name%type;
   l_name customers.last_name%type;
   email customers.email%type;
   CURSOR c_customers is
      SELECT cust_id, first_name,last_name,email FROM customers order by cust_id;
BEGIN
   OPEN c_customers;
   LOOP
   FETCH c_customers into cust_id, f_name,l_name, email;
      EXIT WHEN c_customers%notfound;
      dbms_output.put_line(cust_id || ' ' || f_name || ' ' || l_name || ' ' || email);
   END LOOP;
   CLOSE c_customers;
   END;
```

```
Statement processed.
1000 Jay Shah jayshah3600@gmail.com
1001 Arrshi Kandroo kandrooarrshi09@gmail.com
1002 Ronak Agnani  rvagnani04@gmail.com
1003 Deep Detroja deepdetroja@gmail.com
```

5.4.4 Triggers

5.4.4.1 To update the Salary of the Customers and display the Difference in new and old salary .

```
CREATE OR REPLACE TRIGGER display_salary_changes
BEFORE DELETE OR INSERT OR UPDATE ON loan_acc
FOR EACH ROW DECLARE sal_diff decimal;
 BEGIN sal_diff := :NEW.monthly_income - :OLD.monthly_income;
dbms_output.put_line('Old salary: ' || :OLD.monthly_income);
dbms_output.put_line('New salary: ' || :NEW.monthly_income);
dbms_output.put_line('Salary difference: ' || sal_diff);
END;
insert into loan_acc
values('QW007',1001,'29-APR-2019','Auto',80000);
```

After Update

```
UPDATE loan_acc
SET monthly_income = monthly_income + 5000
WHERE loan_id = 'QW007';
```

5.4.4.2 To check the Age whether it is greater than 18 or not.

```
CREATE OR REPLACE TRIGGER CheckAge
BEFORE INSERT OR UPDATE ON customers
FOR EACH ROW
 BEGIN
IF :new.DOB>DATE '2002-01-01' THEN
raise_application_error(-20001, 'Age should  be greater than 18');
END IF;
 END;
```

If Greater than 18

```
insert into customers
values(1002,'Ronak','Vishalbhai','Agnani',DATE '2000-11-04','Male','rvagnani04@gmail.com',9428849517,873473412695,'Indian','31A,Dharnidhar Society','Nadiad','Gujarat',387001);
```

```
1 row(s) inserted.
```

If less than 18

```
insert into customers
values(1003,'Deep','Haresh','Detroja',DATE '2002-09-14','Male','deepdetroja@gmail.com',7016849517,323482929475 ,'Indian','Sector 8,124A','Jamnagar','Gujarat',361142 );
```

```
ORA-20001: Age should  be greater than 18 ORA-06512: at "SQL_CSWDAXFVULLVERJLOEDZPUBA.CHECKAGE", line 5
ORA-06512: at "SYS.DBMS_SQL", line 1721
```

||

V

```
ORA-20001: Age should  be greater than 18 ORA-06512:
ORA-06512: at "SYS.DBMS_SQL", line 1721
```

6.FUTURE ENHANCEMENTS OF THE SYSTEM

•We will design Front-end Design in HTML, CSS, JavaScript and Develop Bank-end in Python.

•For security purpose New Registration is done using OTP.

•We will make database more consistent and We are making this database efficient and easy to implement with huge data capacity.

•Methods and user data input will be lot easy after the implement of GUI.

•We will also add some extra features so that the users can get answer for their complaints as fast as possible.

7.BIBLIOGRAPHY

- For the successful implementation of this project we referred to many websites.
- We have created Relational Schema and Tables from MySQL Workbench 8.0 CE.
- We created the ER Diagram and Schema Diagram on “ERD Plus”.
- Mostly we referred the online material for syntax of procedures, triggers,
- Exception and cursors.

Reference Websites:

❑ https://www.stackoverflow.com

❑http://www.mysqltutorial.org https://www.w3school.com

❑https://www.tutorialspoint.com