LOAN MANAGEMENT SYSTEM

PRESENTING BY AARTHI

SQL

- MySQL is an open-source relational database management system (RDBMS) based on **Structured Query Language (SQL)**.
- It is developed, distributed, and supported by Oracle Corporation.
- MySQL is a popular choice for web applications and is used by many of the world's largest and fastest-growing organizations.

RDBMS

- RDBMS stands for **Relational Database Management System**, which is a type of database management system **(DBMS)** that stores data in a structured format using rows and columns.

- It uses SQL (Structured Query Language) for database access and manipulation. Common examples of RDBMS include MySQL, PostgreSQL, Oracle, and Microsoft SQL Server.

BENEFITS

- **Open Source**: Freely available with extensive community support.High performance.
- **Security**: Robust features like user authentication, access control, and data encryption.
- **Cross-Platform**: Runs on various operating systems (Linux, Windows, macOS).Easy to use.
- **Ease of Use**: Simple to set up, manage, and use with SQL.

SQL LANGUAGE STATEMENTS

- **Data Definition Language(DDL)**
  -Table Creation, Alter Add Column, Drop ,Modify, Change Column, Table Rename.

- **Data Manipulation Language(DML)**
  - Inserting Values, Update Values, Deleting Values.

- **Data Query Language(DQL).**
  - General Function, Aggregate Function, Logical Function, Date Time Function, String Function, Join Function.

- **Transaction Control Language(TCL).**
  - Commit(Save Point), Roll Back(Undo Changes).

DATA TYPES

- Numeric Data types.
- Date .
- Time .
- String.

NUMERIC

INT

- It ranges from -2147483648 to 21474836470 to 4294967295 11 digits.

- INT is a 4-byte data type, which means it can store values upto 4 bytes in size.

DATA TIME

DATA

- It range from ‘1000-01-01’ to ‘9999-12-31’.
- For example : Displayed as ‘yyyy-mm-dd’.

TIME

- It range from ‘-838:59:59’ to ‘838:59:59’.
- For example: Displayed as ‘HH:MM:SS’.

DATA TIME

TIMESTAMP DIFF

- It range from ‘1970-01-01 00:00:01’ UTC to‘2038-01-19 03:14:07’ TC.
- For example : Displayed as ‘yyyy-mm-dd hh:MM:SS’.

YEAR

- It range from 2 digits or 4 digits.
- For example: Default is 4 digits.

STRING

VARCHAR

- It is a data type used to store character strings of variable length.
- It range from Maximum size of 255 characters.

PRIMARY KEY

- A primary key is a column or set of columns in a table that uniquely identifies each row in the table.
- It is a way to identify each record in a table uniquely.
- It doesn’t allow duplicate values

FOREIGN KEY

- A foreign key is a column or set of columns in a table that references the primary key of another table.
- It is a way to establish a relationship between two tables.

MY SQL MAIN COMMENTS

- **CREATE TABLE**

  Create table table_name;

- **INSERT VALUE**

  INSERT INTO table_name (column1, column2, column3, ...) VALUES (value1, value2, value3, ...);

- **UPDATE TABLE**

  UPDATE table_name SET column1 = value1, column2 = value2, ... WHERE condition;

- **DELETE TABLE**

  DELETE FROM table_name WHERE condition;

TRIGGER

- A Database Trigger Is A Stored Program Which Is Automatically Fired Or Executed When Some Events Occur.

- **TYPES OF TRIGGER:**

1. Row Level Trigger- An Event Is Triggered At Row Level For Each Row Update, insert Or Delete(Before Insert).

2. Statement Level Trigger- An Event Is Triggered At Table Level For Each SQL Statement Executed(After Insert).

TRIGGER

TRIGGER TIMINGS:

1. Before Insert.
2. After Insert.
3. Before Update.
4. After Update.
5. Before Delete.
6. After Delete.

DATA SET

- customer intrest analysis
- loan cibil score status
- customer info
- country state
- region

CUSTOMER INCOME STATUS

- Applicant income >15,000 = grade a
- Applicant income >9,000 = grade b
- Applicant income >5000 = middle class customer
- Otherwise low class

Loan_ID	Customer ID	ApplicantIncome	CoapplicantIncome	Property_Area	Loan_Status	customer_gradings
LP001002	IP43001	5849	0	Urban	Y	Middle_class_customer
LP001003	IP43002	4583	1508	Rural	N	low_class_customer
LP001005	IP43003	3000	0	Urban	Y	low_class_customer
LP001006	IP43004	2583	2358	Urban	Y	low_class_customer
LP001008	IP43005	6000	0	Urban	Y	Middle_class_customer
LP001011	IP43006	5417	4196	Urban	Y	Middle_class_customer
LP001013	IP43007	2333	1516	Urban	Y	low_class_customer
LP001014	IP43008	3036	2504	Semiurban	N	low_class_customer
LP001018	IP43009	4006	1526	Urban	Y	low_class_customer

MONTHLY INTREST PERCENTAGE

- Applicant income <5000 rural=3%
- Applicant income <5000 semi rural=3.5%
- Applicant income <5000 urban=5%
- Applicant income <5000 semi urban= 2.5%
- Otherwise =7%

Loan_ID	Customer ID	ApplicantIncome	CoapplicantIncome	Property_Area	Loan_Status	customer_gradings	customer_income_perc
LP001002	IP43001	5849	0	Urban	Y	Middle_class_customer	7.0
LP001003	IP43002	4583	1508	Rural	N	low_class_customer	3.0
LP001005	IP43003	3000	0	Urban	Y	low_class_customer	5.0
LP001006	IP43004	2583	2358	Urban	Y	low_class_customer	5.0
LP001008	IP43005	6000	0	Urban	Y	Middle_class_customer	7.0
LP001011	IP43006	5417	4196	Urban	Y	Middle_class_customer	7.0
LP001013	IP43007	2333	1516	Urban	Y	low_class_customer	5.0
LP001014	IP43008	3036	2504	Semiurban	N	low_class_customer	2.5
LP001018	IP43009	4006	1526	Urban	Y	low_class_customer	5.0

NEW FIELD CREATION BASED ON INTEREST

- Calculate monthly interest amt and annual interest amt based on loan amt
- Create all the above fields as a table
- Table name - **customer interest analysis**

loan_amt	loan_amt_term	cibil_score	cibil_score_status	monthly_intrest_amt	Annual_intrest_amt
128	360	920	high cibil score	3.84	46.08
56	360	606	penalty customers	3.30	39.60
120	360	851	No penanlty	6.00	72.00
141	360	420	penalty customers	9.87	118.44
95	360	650	penalty customers	4.75	57.00
158	360	471	penalty customers	3.95	47.40
168	360	863	No penanlty	8.40	100.80
349	360	730	penalty customers	24.43	293.16
109	360	384	penalty customers	5.45	65.40
200	360	928	high cibil score	10.00	120.00
114	360	455	penalty customers	3.42	41.04
17	120	564	penalty customers	0.85	10.20
125	360	477	penalty customers	6.25	75.00

LOAN STATUS

- Create row level trigger for loan amt

Criteria

- Loan amt null = loan still processing
- Create statement level trigger for cibil score

Criteria

- Cibil score >900 high cibil score
- Cibil score >750 no penalty
- Cibil score >250 penalty customers
- Cibil score <=0 reject customers

ROW LEVEL TRIGGER

```
delimiter //
create trigger loan_update before insert on
loan_status1 for each row
begin
if new.loan_amt is null then
set
new.loan_amt = "loan still processing";
end if;
end //
delimiter ;
```

STATEMENT LEVEL TRIGGER

```
delimiter ##
create trigger cibil_update after insert on loan_status1 for each row
begin
if new.cibil_score >900 then
insert into loanstatus_update (loan_id,loan_amt,cibil_score,cibil_score_status) values (new.loan_id,
new.loan_amt,new.cibil_score,"high cibil score" ) ;

elseif new.cibil_score>750 then
insert into loanstatus_update (loan_id,loan_amt,cibil_score,cibil_score_status) values (new.loan_id,
new.loan_amt,new.cibil_score," No penanlty" ) ;

elseif new.cibil_score>250 then
insert into loanstatus_update (loan_id,loan_amt,cibil_score,cibil_score_status) values (new.loan_id,
new.loan_amt,new.cibil_score,"penalty customers" ) ;

elseif new.cibil_score>=0 then
insert into loanstatus_update (loan_id,loan_amt,cibil_score,cibil_score_status) values (new.loan_id,
new.loan_amt,new.cibil_score," Rejected customers" ) ;

end if;
end ##
delimiter ;
```

LOAN CIBIL SCORE STATUS

Criteria

*Then delete the reject and loan still processing customers

*Update loan as integers

*Create all the above fields as a table

*Table name - loan cibil score status details

loan_id	customer_id	loan_amt	loan_amt_term	cibil_score	cibil_score_status
LP001003	IP43002	128	360	920	high cibil score
LP001005	IP43003	66	360	606	penalty customers
LP001006	IP43004	120	360	851	No penanlty
LP001008	IP43005	141	360	420	penalty customers
LP001013	IP43007	95	360	650	penalty customers
LP001014	IP43008	158	360	471	penalty customers
LP001018	IP43009	168	360	863	No penanlty
LP001020	IP43010	349	360	730	penalty customers
LP001027	IP43012	109	360	384	penalty customers
LP001028	IP43013	200	360	928	high cibil score
LP001029	IP43014	114	360	455	penalty customers
LP001030	IP43015	17	120	564	penalty customers
LP001032	IP43016	125	360	477	penalty customers
LP001034	IP43017	100	240	888	No penanlty

CUSTOMER INFO

Criteria

*Import the table

*Update gender and age based on customer id

Customer_id	Customer_name	Gender	Age	Married	Education	Self_Employed	Loan_Id	Region_
IP43001	Claire Gute	Male	50	No	Graduate	No	LP001002	13.2
IP43002	Darrin Van Huff	Male	66	Yes	Graduate	No	LP001003	13.2
IP43003	Sean O'Donnell	Male	20	Yes	Graduate	Yes	LP001005	13.2
IP43004	Brosina Hoffman	Male	46	Yes	Not Graduate	No	LP001006	13.2
IP43005	Andrew Allen	Male	18	No	Graduate	No	LP001008	13.2
IP43006	Irene Maddox	female	66	Yes	Graduate	Yes	LP001011	13.2
IP43007	Harold Pawlan	Male	45	Yes	Not Graduate	No	LP001013	13.3
IP43008	Pete Kriz	Male	41	Yes	Graduate	No	LP001014	13.3
IP43009	Alejandro Grove	Male	32	Yes	Graduate	No	LP001018	13.2
IP43010	Zuschuss Donatelli	Male	21	Yes	Graduate	No	LP001020	13.2
IP43011	Ken Black	Male	48	Yes	Graduate	No	LP001024	13.3

COUNTRY STATE

*Import the table

Customer_id	Loan_Id	Customer_name	Region_id	Postal_Code	Segment	State
IP43001	LP001002	Claire Gute	13.2	42420	Consumer	Kentucky
IP43002	LP001003	Darrin Van Huff	13.2	90036	Corporate	California
IP43003	LP001005	Sean O'Donnell	13.2	33311	Consumer	Florida
IP43004	LP001006	Brosina Hoffman	13.2	90032	Consumer	California
IP43005	LP001008	Andrew Allen	13.2	28027	Consumer	North Carolina
IP43006	LP001011	Irene Maddox	13.2	98103	Consumer	Washington
IP43007	LP001013	Harold Pawlan	13.3	76106	Home Office	Texas
IP43008	LP001014	Pete Kriz	13.3	53711	Consumer	Wisconsin
IP43009	LP001018	Alejandro Grove	13.2	84084	Consumer	Utah
IP43010	LP001020	Zuschuss Donatelli	13.2	94109	Consumer	California
IP43011	LP001024	Ken Black	13.3	68025	Corporate	Nebraska
IP43012	LP001027	Sandra Flanagan	13.4	19140	Consumer	Pennsylvania
IP43013	LP001028	Emily Burns	13.2	84057	Consumer	Utah
IP43014	LP001029	Eric Hoffmann	13.2	90049	Consumer	California
IP43015	LP001030	Tracy Blumstein	13.4	19140	Consumer	Pennsylvania
IP43016	LP001032	Matt Abelman	13.3	77095	Home Office	Texas
IP43017	LP001034	Gene Hale	13.3	75080	Corporate	Texas
IP43018	LP001036	Steve Nguyen	13.3	77041	Home Office	Texas

REGION INFO

*Import the table

Region	Region_Id
South	13.1
West	13.2
North	13.3
East	[illegible]

OUTPUT 1

*Join all the 5 tables without repeating the fields

.oan_ID	Customer_ID	ApplicantIncome	CoapplicantIncome	Property_Area	Loan_Status	customer_gradings	customer_income_perc	loan_amt	monthly_intrest_amt	Annual_intrest_amt	loan_amt_term	cibil_score
P001003	IP43002	4583	1508	Rural	N	low_class_customer	3.0	128	3.84	46.08	360	920
P001005	IP43003	3000	0	Urban	Y	low_class_customer	5.0	66	3.30	39.60	360	606
P001006	IP43004	2583	2358	Urban	Y	low_class_customer	5.0	120	6.00	72.00	360	851
P001008	IP43005	[illegible]	0	Urban	Y	Middle_class_customer	7.0	141	9.87	118.44	360	420
P001013	IP43007	[illegible]	1516	Urban	Y	low_class_customer	5.0	95	4.75	57.00	360	650
P001014	IP43008	3036	2504	Semiurban	N	low_class_customer	2.5	158	3.95	47.40	360	471
P001018	IP43009	4006	1526	Urban	Y	low_class_customer	5.0	168	8.40	100.80	360	863
P001020	IP43010	12841	10968	Semiurban	N	Grade_B	7.0	349	24.43	293.16	360	730
P001027	IP43012	2500	1840	Urban	Y	low_class_customer	5.0	109	5.45	65.40	360	384
P001028	IP43013	3073	8106	Urban	Y	low_class_customer	5.0	200	10.00	120.00	360	928
P001029	IP43014	1853	2840	Rural	N	low_class_customer	3.0	114	3.42	41.04	360	455
P001030	IP43015	1299	1086	Urban	Y	low_class_customer	5.0	17	0.85	10.20	120	564
P001032	IP43016	4950	0	Urban	Y	low_class_customer	5.0	125	6.25	75.00	360	477
P001034	IP43017	3596	0	Urban	Y	low_class_customer	5.0	100	5.00	60.00	240	888
P001036	IP43018	3510	0	Urban	N	low_class_customer	5.0	76	3.80	45.60	360	387

OUTPUT 2

*find the mismatch details using joins

customer_id	customer_name	region_id	postal_code	segment	state	region
NULL	NULL	NULL	NULL	NULL	NULL	South
IP43614	Eleni McCrary	13.2	90036	Corporate	California	West
IP43613	Tamara Manning	13.2	94122	Consumer	California	West
IP43611	Christina VanderZanden	13.2	93727	Consumer	California	West
IP43610	Scott Cohen	13.2	94122	Corporate	California	West
IP43609	Kelly Williams	13.2	37042	Consumer	Tennessee	West
IP43608	Kristina Nunn	13.2	80525	Home Office	Colorado	West
IP43605	Becky Castell	13.2	85345	Home Office	Arizona	West
IP43603	Ricardo Sperren	13.2	98115	Corporate	Washington	West
IP43602	Patrick Jones	13.2	37130	Corporate	Tennessee	West
IP43601	Jim Karlsson	13.2	98115	Consumer	Washington	West
IP43600	Tom Prescott	13.2	98115	Consumer	Washington	West
IP43599	Sean Miller	13.2	28110	Home Office	North Caro...	West
IP43598	Mark Van Huff	13.2	22204	Consumer	Virginia	West

OUTPUT 3

* Filter high cibil score

customer_gradings	customer_income_perc	loan_amt	monthly_intrest_amt	Annual_intrest_amt	loan_amt_term	cibil_score	cibil_score_status
ow_class_customer	3.0	128	3.84	46.08	360	920	high cibil score
ow_class_customer	5.0	200	10.00	120.00	360	928	high cibil score
Middle_class_customer	7.0	315	22.05	264.60	360	903	high cibil score
ow_class_customer	2.5	122	3.05	36.60	360	999	high cibil score
ow_class_customer	5.0	201	10.05	120.60	360	972	high cibil score
ow_class_customer	5.0	144	7.20	86.40	360	949	high cibil score
ow_class_customer	2.5	116	2.90	34.80	360	924	high cibil score
ow_class_customer	2.5	130	3.25	39.00	360	951	high cibil score
ow_class_customer	5.0	50	2.50	30.00	240	933	high cibil score
ow_class_customer	2.5	99	2.48	29.70	360	985	high cibil score
ow_class_customer	2.5	50	1.25	15.00	360	994	high cibil score
ow_class_customer	2.5	154	3.85	46.20	360	919	high cibil score

OUTPUT 4

- Filter home office and corporate

cibil_score_status	customer_name	gender	age	married	education	self_employed	region_id	postal_code	segment	state	region
high cibil score	Darrin Van Huff	Male	66	Yes	Graduate	No	13.2	90036	Corporate	California	West
penalty customers	Harold Pawlan	Male	45	Yes	Not Graduate	No	13.3	76106	Home Office	Texas	North
penalty customers	Matt Abelman	female	51	No	Graduate	No	13.3	77095	Home Office	Texas	North
No penanlty	Gene Hale	Male	20	No	Not Graduate	No	13.3	75080	Corporate	Texas	North
penalty customers	Steve Nguyen	male	27	No	Graduate	No	13.3	77041	Home Office	Texas	North
penalty customers	Linda Cazamias	Male	64	Yes	Not Graduate	No	13.3	60540	Corporate	Illinois	North
penalty customers	Ruben Ausman	Male	66	Yes	Graduate	NULL	13.2	90049	Corporate	California	West
penalty customers	Erin Smith	Male	40	Yes	Not Graduate	No	13.2	32935	Corporate	Florida	West
high cibil score	Odella Nelson	Male	23	Yes	Graduate	No	13.3	55122	Corporate	Minnesota	North
penalty customers	Janet Molinari	Male	45	Yes	Graduate	Yes	13.4	10024	Corporate	New York	East
penalty customers	Paul Stevenson	Male	25	No	Not Graduate	No	13.3	60610	Home Office	Illinois	North
penalty customers	Brendan Sweed	Female	29	No	Graduate	NULL	13.2	85234	Corporate	Arizona	West
penalty customers	Ken Brennan	Male	33	Yes	Graduate	No	13.3	77041	Corporate	Texas	North
No penanlty	Stewart Carmic...	Male	64	No	Graduate	No	13.2	35601	Corporate	Alabama	West
penalty customers	Julie Creighton	Male	33	Yes	Graduate	No	13.2	27707	Corporate	North Ca...	West
penalty customers	Jim Sink	Male	33	No	Graduate	No	13.2	90036	Corporate	California	West
No penanlty	Roger Barcio	Male	18	Yes	Graduate	No	13.2	97206	Home Office	Oregon	West

THANK YOU