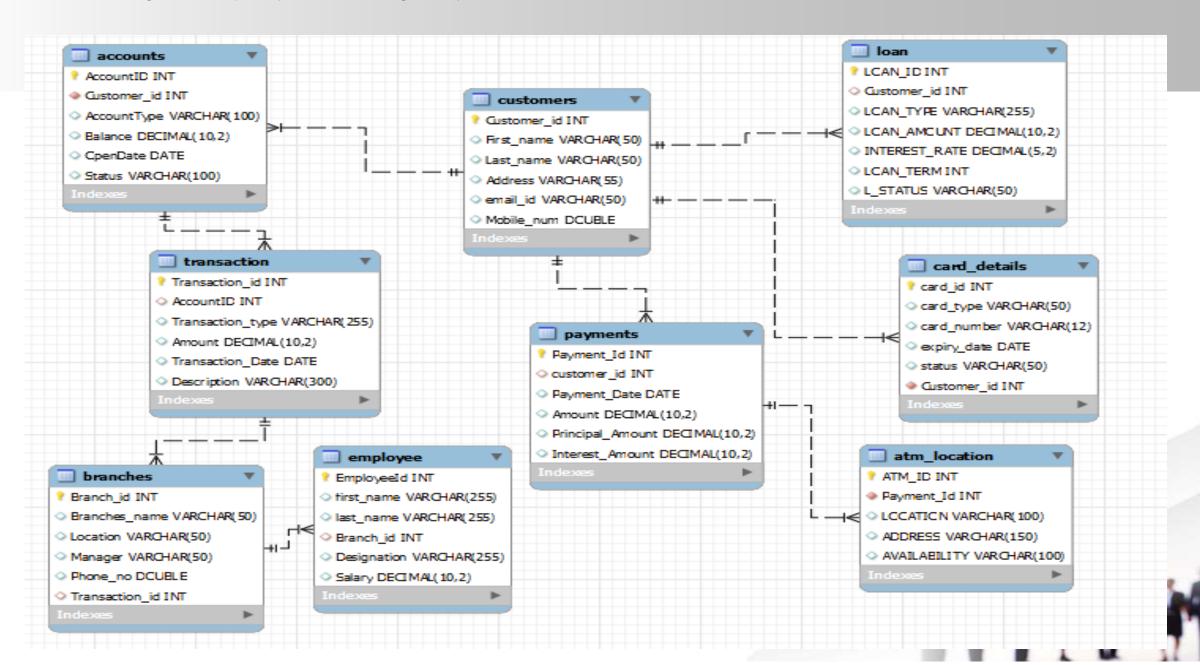


Bank Management

using SQL



ERD -using Primary key and Foreign key



There are 9 different table in Bank Database

- 1.Employee
- 2.Customer detail
- 3.Branches
- 4.Accounts
- 5.Loan
- 6.Transaction
- 7.Atm_card location
- 8.Payments
- 9.Card detail



Analysis is done using Joins and ERD by making relationship using Primary and Foreign keys.

Accounts Table -

1 • SELECT * FROM bank.accounts;

sult Grid 📗	🙌 Filter Ro	ws:	Ed	it: 🚄 🖶 🏻	Export,
AccountID	Customer_id	AccountType	Balance	OpenDate	Status
101	1	Savings	5000.00	2022-01-15	Active
102	2	Checking	2350.50	2021-11-28	Active
103	3	Savings	10500.25	2023-02-05	Active
104	4	Checking	1200.75	2022-09-12	Inactive
105	5	Savings	8900.00	2021-06-20	Active
106	6	Checking	4600.80	2023-05-10	Active
107	7	Savings	2750.15	2022-04-03	Active
108	8	Checking	3100.50	2021-08-14	Inactive
109	9	Savings	6750.90	2023-01-07	Active
110	10	Checking	950.00	2022-03-25	Active
111	11	Savings	15200.00	2021-09-18	Active

Customer Table-

1 • SELECT * FROM bank.customers;

sult Grid	🙌 Filter Ro	ws:	Edit:	🔓 📆 🖶 Export/Import: 🏢	Wrap C	ell Content: ‡A
Customer_id	First_name	Last_name	Address	email_id	Mobile_num	customer_name
1	John	Doe	123 Main St	john.doe@example.com	1234567890	John Doe
2	Jane	Smith	456 Elm St	jane.smith@example.com	2345678901	Jane Smith
3	Michael	Johnson	789 Oak St	michael.johnson@example.com	3456789012	Michael Johnson
4	Emily	Williams	101 Pine St	emily.williams@example.com	4567890123	Emily Williams
5	William	Brown	202 Maple St	william.brown@example.com	5678901234	William Brown
6	Olivia	Jones	303 Cedar St	olivia.jones@example.com	6789012345	Olivia Jones
7	James	Miller	404 Birch St	james.miller@example.com	7890123456	James Miller
8	Sophia	Davis	505 Redwood St	sophia.davis@example.com	8901234567	Sophia Davis
9	Benjamin	Wilson	606 Sequoia St	benjamin.wilson@example.com	9012345678	Benjamin Wilson
10	Ava	Moore	707 Spruce St	ava.moore@example.com	1234567890	Ava Moore
11	Alexander	Taylor	808 Cedar St	alexander.taylor@example.com	2345678901	Alexander Taylor

Branches Table-

1 • SELECT * FROM bank.branches;

ult Grid 🛚 🛚	Filter Rows:		Edit: 🚄 🗮	Export/Imp	oort: 📳 🐻 🛚
Branch_id	Branches_name	Location	Manager	Phone_no	Transaction_id
1	Downtown Branch	New York	John Smith	1234567890.12	1
2	Uptown Branch	New York	Jane Johnson	2345678901.23	2
3	Midtown Branch	New York	Michael Davis	3456789012.34	3
4	West End Branch	Los Angeles	Emily Wilson	4567890123.45	4
5	East End Branch	Los Angeles	William Brown	5678901234.56	5
5	Downtown Branch	Los Angeles	Olivia Jones	6789012345.67	6
7	Downtown Branch	Chicago	James Miller	7890123456.78	7
3	North Side Branch	Chicago	Sophia Davis	8901234567.89	8
9	South Side Branch	Chicago	Benjamin Wilson	9012345678.9	9 8
10	Downtown Branch	San Francisco	Ava Moore	1234567890.12	10
11	Uptown Branch	San Francisco	Alexander Taylor	2345678901.23	11

Employee Table -

SELECT * FROM bank.employee;

				idit: 👍 🖶 🗒	e
EmployeeId	first_name	last_name	Branch_id	Designation	Salary
101	John	Doe	1	Manager	75000.00
102	Jane	Smith	2	SalesAssociate	45000.50
103	Michael	Johnson	3	Technician	60000.75
104	Emily	Wilson	4	Accountant	55000.25
105	David	Brown	5	Manager	72000.00
106	Sarah	Anderson	6	SalesAssociate	48000.00
107	Christopher	Lee	7	Technician	62000.50
108	Olivia	Martinez	8	Accountant	56000.75
109	Daniel	Garcia	9	Manager	75000.00
110	Sophia	Hernandez	10	Technician	61000.25
111	William	Jackson	11	SalesAssociate	46000.50
loyee 1 🗴					

Atm Location Table -

1 • SELECT * FROM bank.atm_location;

Result G	rid 🔢 🔥 F	lter Rows:	Edit:		ort/Import:	3 E
ATM	_ID Payment_I	d LOCATION	ADDRESS	AVAILABILITY		
301	401	Downtown	123 Main Street	Available		
302	402	Uptown	456 Elm Street	Available		
303	403	Midtown	789 Oak Street	Available		
304	404	Downtown	321 Maple Avenue	Available		
305	405	Uptown	654 Birch Avenue	Available		
306	406	Midtown	987 Pine Road	Available		
307	407	Downtown	1234 Cedar Drive	Available		
308	408	Uptown	5678 Walnut Lane	Available		
309	409	Midtown	9012 Oakwood Circle	Available		
310	410	Downtown	3456 Willow Court	Available		
311	411	Uptown	7890 Cherry Lane	Available		
n locati	on 1 ×					

Payments Table -

1 • SELECT * FROM bank.payments;

				<u> </u>	
Payment_Id	customer_id	Payment_Date	Amount	Principal_Amount	Interest_Amount
401	1	2023-01-15	500.00	400.00	100.00
402	2	2023-02-15	600.00	500.00	100.00
403	3	2023-03-15	700.00	600.00	100.00
404	4	2023-04-15	800.00	700.00	100.00
405	5	2023-05-15	900.00	800.00	100.00
406	6	2023-06-15	1000.00	900.00	100.00
407	7	2023-07-15	1100.00	1000.00	100.00
408	8	2023-08-15	1200.00	1100.00	100.00
409	9	2023-09-15	1300.00	1200.00	100.00
410	10	2023-10-15	1400.00	1300.00	100.00
411	11	2023-11-15	1500.00	1400.00	100.00

Loan Table -

1 • SELECT * FROM bank.loan;

[
•••••	1. a 1 H	T			<i>≬</i>		
	LOAN_ID	Customer_id	LOAN_TYPE	LOAN_AMOUNT	INTEREST_RATE	LOAN_TERM	L_STATUS
Þ	201	1	Personal	5000.00	6.50	36	Approved
	202	2	Home	100000.00	4.00	240	Pending
	203	3	Auto	15000.00	5.00	60	Approved
	204	4	Personal	7000.00	7.00	48	Rejected
	205	5	Education	20000.00	3.50	72	Approved
	206	6	Auto	12000.00	4.50	60	Pending
	207	7	Home	80000.00	3.75	180	Approved
	208	8	Personal	6000.00	8.00	36	Rejected
	209	9	Education	25000.00	4.00	60	Approved
	210	10	Auto	18000.00	6.00	72	Pending
	211	11	Home	75000.00	3.25	120	Approved
lna	n 1 🗸						

Transaction Table-

1 • SELECT * FROM bank.transaction;

Res	sult Grid 🛮 🔢 🖪	Filter Rows	51	Edit: 🌠	🔓 🖶 Expor	t/Import: 📳 🚡 Wrap C
	Transaction_id	AccountID	Transaction_type	Amount	Transaction_Date	Description
	1	101	Credit	100.50	2023-09-15	Payment from customer A
	2	102	Debit	50.25	2023-09-16	Purchase of supplies
	3	103	Credit	75.75	2023-09-17	Refund for returned item
	4	104	Debit	30.00	2023-09-18	Monthly subscription fee
	5	105	Credit	200.00	2023-09-19	Salary deposit
	6	106	Withdrawal	120.00	2023-01-20	Coffee shop
	7	107	Deposit	8000.00	2023-01-21	Bonus
	8	108	Withdrawal	600.00	2023-01-22	Online shopping
	9	109	Deposit	2500.00	2023-01-23	Gift
	10	110	Withdrawal	180.00	2023-01-24	Lunch
	11	111	Deposit	7500.00	2023-01-25	Salary
an	saction 1 ×					

Card_Detail Table-

SELECT * FROM bank.card_details;

Result Grid	∏ ∜ Fi	ter Rows:	E	dit: 🚄		Ехро
card_id	card_type	card_number	expiry_date	status	Customer_	_id
501	Credit	123456789011	2024-01-31	Active	1	
502	Debit	234567890123	2025-02-28	Active	2	
503	Credit	345678901234	2026-03-31	Active	3	
504	Debit	456789012345	2027-04-30	Active	4	
505	Credit	567890123456	2028-05-31	Active	5	
506	Debit	678901234567	2029-06-30	Active	6	
507	Credit	789012345678	2030-07-31	Active	7	
508	Debit	890123456789	2031-08-31	Active	8	
509	Credit	901234567890	2032-09-30	Active	9	
510	Debit	123456789012	2024-10-31	Active	10	
511	Credit	234567890123	2025-11-30	Active	11	
rd details	1 ×					

```
#1 Total no of customers in all branches

SELECT c.Customer_Name ,count(c.customer_name) ,b.branches_name

from Customers c

inner join

branches b on

c.Customer_ID=b.transaction_id

group by b.branches_name ;
```

Re	sult Grid 🎚	♦ Filter	Rows:	Exp	ort: 📳 Wrap Cell	Content: ‡A
	first_name	last_name	designation	avg_salary	branches_name	location
	John	Doe	Manager	75000.00	Downtown Branch	New York
	Daniel	Garcia	Manager	75000.00	South Side Branch	Chicago
	Mia	Thompson	Manager	73000.00	North End Branch	Boston
	David	Brown	Manager	72000.00	East End Branch	Los Angeles
	Michael	Johnson	Technician	60000.75	Midtown Branch	New York
	Ethan	Harris	Technician	60000.50	South End Branch	Boston
	Olivia	Martinez	Accountant	56000.75	North Side Branch	Chicago
	Emily	Wilson	Accountant	55000.25	West End Branch	Los Angeles

```
#2 Total Balance by all branches
set sql_mode=0;
SELECT b.branches_name,b.transaction_id, a.customer_id,sum(a.balance)
from branches b
inner join
Accounts a
  on b.transaction_id=a.customer_id
  group by b.branches_name;
```

branches_name	transaction_id	customer_id	sum(a.balan
Downtown Branch	1	1	150010.65
Uptown Branch	2	2	150313.05
Midtown Branch	3	3	147408.90
West End Branch	4	4	1200.75
East End Branch	5	5	8900.00
North Side Branch	8	8	16850.50
South Side Branch	9	9	10951.65
North End Branch	14	14	8600.75
South End Branch	15	15	6900.10

```
#3 Customers with transaction data
```

select c.customer_name, t.amount,t.transaction_type,t.description

from customers c

inner join

transaction t on

c.customer_id=t.transaction_id;

customer name	amount	transaction type	description Column1
John Doe		Credit	Payment from customer A
Jane Smith	30.25		Purchase of supplies
Michael Johnson	75.75	Credit	Refund for returned item
Emily Williams	30	Debit	Monthly subscription fee
William Rown	200	Condit	Salary deposit
Olivia lones		Withdrawal	Coffee shop
lames Miller		Deposit	Bonus
Sophia Davis		Withdrawal	Online shopping
Benjamin Wilson	2500	Deposit	si n
Ava Moore		Withdrawal	Lunch
Alexander Taylor		Denosit	Salary
Mia Anderson	330	Withdrawal	Dioperout
Ethan Martinez	1600	Deposit	Savings transfer
Isabella Hernander		Withdrawal	Grocery shopping
Liam Garria		Deposit	Bonus
Charlotte Lewis		Withdrawal	Online shopping
Henry Lee		Deposit	Sift
Amelia Walker		Withdrawal	Coffee shop
Daniel Perez		Deposit	Salary
Luna Hall		Withdrawal	Dinnerout
Matthew Young		Deposit	Savings transfer
Lily Allen		Withdrawal	Online shopping
Jack Turner		Deposit	Books
Grace Gonzalez		Withdrawal	Lunch
Grace Gonzalez Owen Harris		Depo sit	Savings transfer
Owen Harris Chibe Martin		Withdrawal	Savings transfer Coffee shop
Choe Martin Sebastian King		Depo sit	Corree snop Salary
l l			ATM withdrawal
Zoe Wright David Nelson		Withdrawal Deno sit	
David Nelson Hannah Adams		Depost Withdrawal	Bonus
			Grocery shopping
Christopher Parker		Deposit	Gift
Avery Cooper		Withdrawal	Online shopping
Andrew Ross		Deposit	Savings transfer
Sofia Peterson		Withdrawal	Coffee shop
Joseph Morris		Deposit	Salary
Ella Cook		Withdrawal	Dinnerout
Lucas White		Deposit	Bonus
Scarlett Martin		Withdrawal	Lunch
Henry Clark		Deposit	Savings transfer
Emm a Rodriguez		Withdrawal	ATM withdrawal
	3200	Deposit	Gift
O liver Lewis			
O liver Lewis Aria Tumer		Withdrawal	Grocery shopping
O liver Lewis Aria Tumer James Hall	100.5	Credit	Payment from customer A
O liver Lewis Aria Tumer James Hall Ella Adams	100.5 30.25	Credit Debit	Payment from customer A Purchase of supplies
O liver Lewis Aria Tumer James Hall	100.5 30.23 75.75	Credit	Payment from customer A

#4 customer details

INNER JOIN branches b ON c.Customer_ID=b.transaction_id

INNER JOIN accounts a ON c.Customer_ID=a.customer_id

INNER JOIN loan 1 ON c.Customer_ID=1.customer_id

INNER JOIN card_details d ON c.Customer_ID=d.customer_id ;

customer name	address ▼	email_id	▼ mobile num ▼	branches name	location -	accounttype	▼ balance ▼ card_type ▼	expiry date	oan_amount 🔻	loan_term ▼
John Doe	123 Main St	john.doe@example.com		Downtown Branch			5000 Credit	1/31/2024	5000	36
Jane Smith	456 Elm St	jane.smith@example.com	2345678901	Uptown Branch	New York	Checking	2350.5 Debit	2/28/2025	100000	240
Michael Johnson	789 Oak St	michael.johnson@example.com	3456789012	Midtown Branch	New York	Savings	10500.25 Credit	3/31/2026	15000	60
Emily Williams	101 Pine St	emily.williams@example.com	4567890123	West End Branch	Los Angele	Checking	1200.75 Debit	4/30/2027	7000	48
William Brown	202 Maple St	william.brown@example.com	5678901234	East End Branch	Los Angele	Savings	8900 Credit	5/31/2028	20000	72
Olivia Jones	303 Cedar St	olivia.jones@example.com	6789012345	Downtown Branch	Los Angele	Checking	4600.8 Debit	6/30/2029	12000	60
James Miller	404 Birch St	james.miller@example.com	7890123456	Downtown Branch	Chicago	Savings	2750.15 Credit	7/31/2030	80000	180
Sophia Davis	505 Redwood St	sophia.davis@example.com	8901234567	North Side Branch	Chicago	Checking	3100.5 Debit	8/31/2031	6000	36
Benjamin Wilson	606 Sequoia St	benjamin.wilson@example.com	9012345678	South Side Branch	Chicago	Savings	6750.9 Credit	9/30/2032	25000	60
Ava Moore	707 Spruce St	ava.moore@example.com	1234567890	Downtown Branch	San Francis	Checking	950 Debit	10/31/2024	18000	72
Alexander Taylor	808 Cedar St	alexander.taylor@example.com	2345678901	Uptown Branch	San Francis	Savings	15200 Credit	11/30/2025	75000	120
Mia Anderson	909 Elm St	mia.anderson@example.com	3456789012	Midtown Branch	San Francis	Checking	3750.25 Debit	12/31/2026	5500	48
Ethan Martinez	1010 Oak St	ethan.martinez@example.com	4567890123	Downtown Branch	Boston	Savings	4500 Credit	1/31/2027	16000	60
Isabella Hernandez	1111 Maple St	isabella.hernandez@example.com	n 5678901234	North End Branch	Boston	Checking	8600.75 Debit	2/29/2028	22000	84
Liam Garcia	1212 Pine St	liam.garcia@example.com	6789012345	South End Branch	Boston	Savings	6900.1 Credit	3/31/2029	90000	180
Charlotte Lewis	1313 Cedar St	charlotte.lewis@example.com	7890123456	Downtown Branch	Miami	Checking	1800 Debit	4/30/2030	6200	36
Henry Lee	1414 Redwood St	henry.lee@example.com	8901234567	Uptown Branch	Miami	Savings	7350.75 Credit	5/31/2031	14000	60
Amelia Walker	1515 Sequoia St	amelia.walker@example.com	9012345678	Downtown Branch	Miami	Checking	2250.5 Debit	6/30/2032	27000	72
Daniel Perez	1616 Spruce St	daniel.perez@example.com	1234567890	Downtown Branch	Dallas	Savings	4000 Credit	7/31/2024	5800	48
Luna Hall	1717 Elm St	luna.hall@example.com	2345678901	Uptown Branch	Dallas	Checking	5900.25 Debit	8/31/2025	95000	240
Matthew Young	1818 Oak St	matthew.young@example.com	3456789012	Midtown Branch	Dallas	Savings	7500 Credit	9/30/2026	17000	60
Lily Allen	1919 Maple St	lily.allen@example.com	4567890123	Downtown Branch	Houston	Checking	3100.25 Debit	10/31/2027	Vindov <mark>24000</mark>	84
										3.4

```
# 5 Employee details
SELECT e.first_name,e.last_name,e.designation,round((e.salary),2) as avg_salary,b.branches_name,b.location
FROM employee e
INNER JOIN Branches b
ON e.branch_id=b.transaction_id
group by b.branches_name
order by avg_salary desc;
```

sult Grid	₹ Filter	Rows:	Exp	ort: Wrap Cell	Content: ‡A
first_name	last_name	designation	avg_salary	branches_name	location
John	Doe	Manager	75000.00	Downtown Branch	New York
Daniel	Garcia	Manager	75000.00	South Side Branch	Chicago
Mia	Thompson	Manager	73000.00	North End Branch	Boston
David	Brown	Manager	72000.00	East End Branch	Los Angeles
Michael	Johnson	Technician	60000.75	Midtown Branch	New York
Ethan	Harris	Technician	60000.50	South End Branch	Boston
Olivia	Martinez	Accountant	56000.75	North Side Branch	Chicago
Emily	Wilson	Accountant	55000.25	West End Branch	Los Angeles
Jane	Smith	SalesAssociate	45000.50	Uptown Branch	New York

Summary - Insights From Project-

Some key insights and functionalities of the project include:

Customer-Related Operations: The project enables the creation and management of customer accounts, card issuance, and loan applications.

Employee Management: It allows for employee information management, including their roles and assignments to specific branches.

ATM and Branch Information: The project keeps track of ATM locations and links them to the respective branches for effective branch management.

Transaction and Payment Tracking: Tracks all financial transactions and payments for customers, enabling financial analysis and reconciliation.

Loan Management: Monitors the status and details of loans, including loan origination, payments, and interest calculations.

Integration: The project integrates various tables to provide a

Insights of Project-

The bank project in SQL is a robust system that can help streamline banking operations, improve customer service, and provide valuable insights into the bank's financial activities. It supports the core functions of a typical bank, such as customer management, financial transactions, and loan management, while also offering data for decision-making and reporting.

