TITLE: CUSTOMER DATABASE SQL PROJECT

END-TO-END DATA ANALYSIS USING SQL

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PROJECT OVERVIEW

Contents:

- SQL-based project for analyzing customer data
- Covers creation, filtering, aggregation, analytics & updates
- Ideal for beginner to intermediate data analysts

TOOLS AND TECHNOLOGIES

- SQL (MySQL-compatible syntax)
- GitHub (for version control)
- VS Code or MySQL Workbench (for execution)

DATABASE & TABLE CREATION

```sql
-- SQL Create Table
create table customer_info(
cust_id int,
Name varchar(50),
city varchar(50),
Age int,
salary numeric
);
```

DATA INSERTION

```
--- INSERT Values in the table

INSERT INTO customer_info(cust_id,Name,city,Age,salary)
values
(23451,'Rishika sharma', 'Ranchi',21,30900.90),
(04572,'vanshila raj', 'Pehalgam',24,49872.10),
(2327,'Gomti bhatnagar', 'Bandra',32,342887.32),
(6269,'keshev kumar', 'Karachi',31,134002.23),
(2269,'Tannu viswa', 'Panji',29,98370.35),
(1242,'priya Rathore', 'Bohpal',30,88200.87),
(13431,'Bhusan singh', 'Patna',35,81280.93);
```

BASIC QUERIES

```
--- Select Statement
Select * from customer_info;
```

RESULT

cust_id	Name	city	Age	salary
1242	priya Rathore	Bhopa	30	88200.87
2269	Tannu viswa	Panji	29	98370.35
2327	Gomti bhatnagar	Bandra	32	342887.32
4572	vanshila raj	Pehalgam	24	49872.10
6269	keshev kumar	Karachi	31	134002.23
13431	Bhusan singh	Patna	35	81280.93
23451	Rishika sharma	Ranchi	21	30900.90

BASIC QUERIES

```
--- Show_only _name _and city
select name,city from customer_info;
```

RESULT

	name	city
▶	priya Rathore	Bhopa
	Tannu viswa	Panji
	Gomti bhatnagar	Bandra
	vanshila raj	Pehalgam
	keshev kumar	Karachi
	Bhusan singh	Patna
	Rishika sharma	Ranchi

BASIC QUERIES

```
--- People older than 30
select name As 'customer_Age>30' from customer_info where age >30;
```

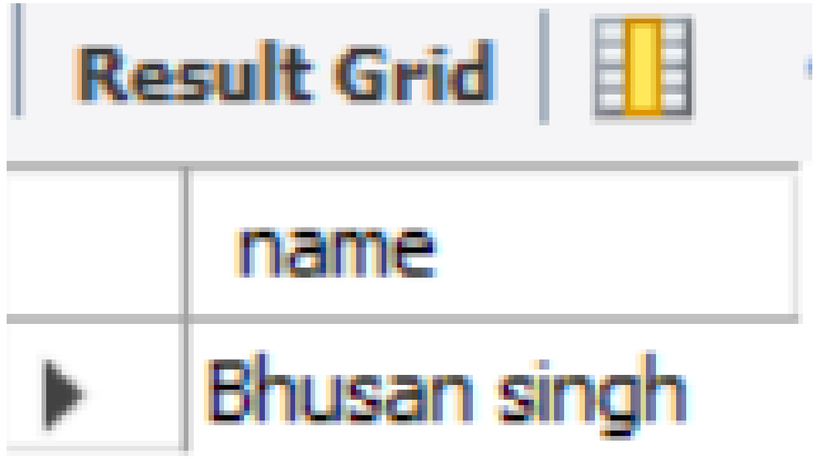
RESULT

customer_Age>30
Gomti bhatnagar
keshev kumar
Bhusan singh

BASIC QUERIES

```
--- Customers from Delhi or Patna---
select name from customer_info
 where city ='delhi' OR city= 'patna';
```

RESULT



BASIC QUERIES

```
--- List customers under 30 in Ranchi
select name As 'Age under 30' from customer_info
 where age<30 AND city= 'Ranchi';
```

RESULT

	Age under 30
▶	Rishika sharma

SORTING QUERIES

```
--- Sort by salary high to low
select name,salary from customer_info order by(salary) desc;
```

RESULT

name	salary
Gomti bhatnagar	342887.32
keshev kumar	134002.23
Tannu viswa	98370.35
priya Rathore	88200.87
Bhusan singh	81280.93
vanshila raj	49872.10
Rishika sharma	30900.90

SORTING QUERIES

```
--- Sort by name alphabetically
select * from customer_info order by (name);
```

RESULT

cust_id	Name	city	Age	salary
13431	Bhusan singh	Patna	35	81280.93
2327	Gomti bhatnagar	Bandra	32	342887.32
6269	keshev kumar	Karachi	31	134002.23
1242	priya Rathore	Bhopa	30	88200.87
23451	Rishika sharma	Ranchi	21	30900.90
2269	Tannu viswa	Panji	29	98370.35
4572	vanshila raj	Pehalgam	24	49872.10

FILTERING QUERIES

```
--- Who earns exactly 88200.87?
select * from customer_info where salary=88200.87;
```

RESULT

cust_id	Name	city	Age	salary
1242	priya Rathore	Bhopa	30	88200.87
NULL	NULL	NULL	NULL	NULL

AGGREGATION QUERIES

```
--- Find customers earning above avg salary
select * from customer_info
 where salary>(select avg(salary)
 from customer_info);
```

RESULT

cust_id	Name	city	Age	salary
2327	Gomti bhatnagar	Bandra	32	342887.32
6269	keshev kumar	Karachi	31	134002.23
NULL	NULL	NULL	NULL	NULL

LIKE CLAUSE

```
---  Find customers with salary ending in .90 |
select * from customer_info where salary like'%.90';
```

RESULT

cust_id	Name	city	Age	salary
23451	Rishika sharma	Ranchi	21	30900.90
NULL	NULL	NULL	NULL	NULL

QUERY WITH SUBQUERIES

```
--- Show customers with salary above avg salary
select * from customer_info
 where salary>(select avg(salary)
 from customer_info) ;
```

RESULT

cust_id	Name	city	Age	salary
2327	Gomti bhatnagar	Bandra	32	342887.32
6269	keshev kumar	Karachi	31	134002.23
NULL	NULL	NULL	NULL	NULL

QUERY WITH SUBQUERIES

```
--- Get customer(s) with highest salary
select * from customer_info
 where salary = (
select MAX(salary) from customer_info);
```

RESULT

cust_id	Name	city	Age	salary
2327	Gomti bhatnagar	Bandra	32	342887.32
NULL	NULL	NULL	NULL	NULL

RANKING

```
--- Top 3 highest paid customers
select * from customer_info order by salary desc limit 3
```

RESULT

cust_id	Name	city	Age	salary
2327	Gomti bhatnagar	Bandra	32	342887.32
6269	keshev kumar	Karachi	31	134002.23
2269	Tannu viswa	Panji	29	98370.35
NULL	NULL	NULL	NULL	NULL

RANKING

```
--- Youngest 2 customers
select * from customer_info
 order by age asc limit 2;
```

RESULT

cust_id	Name	city	Age	salary
23451	Rishika sharma	Ranchi	21	30900.90
4572	vanshila raj	Pehalgam	24	49872.10
NULL	NULL	NULL	NULL	NULL

SORTING + RANKING

```sql
--- Cities with highest average salary (descending)
select city, Avg(salary)as AVG_salary
from customer_info
group by city
order by  AVG_salary desc  ;
```

RESULT

city	AVG_salary
Bandra	342887.320000
Karachi	134002.230000
Panji	98370.350000
Bhopa	88200.870000
Patna	81280.930000
Pehalgam	49872.100000
Ranchi	30900.900000

ANALYTICAL THINKING QUERIES

```
--- What % of customers are under 30?
select count(*)*100.0/(select count(*) from customer_info) As percent_under30
from customer_info where age<30;
```

RESULT

percent_under_30
42.85714

ANALYTICAL THINKING QUERIES

```
--- What's the average salary by age group (20-25, 26-30, 31-35)?
select case
when age between 20 and 25 then '20-25'
when age between 26 and 30 then '26-30'
when age between 31 and 35 then '31-35'
else'others' -- else is optional---
End AS age_group,
avg(salary) as AVG_salary
from customer_info
group by age_group;
```

RESULT

age_group	AVG_salary
26–30	93285.610000
31–35	186056.826667
20-25	40386.500000

WINDOW FUNCTIONS

```
--- Rank customers by salary
select name, salary, rank() over(order by salary desc)as salary_rank from customer_info;
```

RESULT

name	salary	salary_rank
Gomti bhatnagar	342887.32	1
keshev kumar	134002.23	2
Tannu viswa	98370.35	3
priya Rathore	88200.87	4
Bhusan singh	81280.93	5
vanshila raj	49872.10	6
Rishika sharma	30900.90	7

WINDOW FUNCTIONS

```
--- Compare each customer's salary to avg of their city
SELECT name,city,salary,
    AVG(salary) OVER (PARTITION BY city) AS avg_city_salary,
    salary - AVG(salary) OVER (PARTITION BY city) AS diff_from_avg
FROM customer_info;
```

RESULT

name	city	salary	avg_city_salary	diff_from_avg
Gomti bhatnagar	Bandra	342887.32	342887.320000	0.000000
priya Rathore	Bhopa	88200.87	88200.870000	0.000000
keshev kumar	Karachi	134002.23	134002.230000	0.000000
Tannu viswa	Panji	98370.35	98370.350000	0.000000
Bhusan singh	Patna	81280.93	81280.930000	0.000000
vanshila raj	Pehalgam	49872.10	49872.100000	0.000000
Rishika sharma	Ranchi	30900.90	30900.900000	0.000000

CONCLUSION

- Successfully created and populated a customer database using SQL.
- Performed a wide range of queries: selection, filtering, sorting, aggregation, updates, and analytics
- Applied real-world scenarios like finding high earners, age groups, and city-based insights.
- Demonstrated use of subqueries and window functions for advanced SQL analysis.

THANK YOU