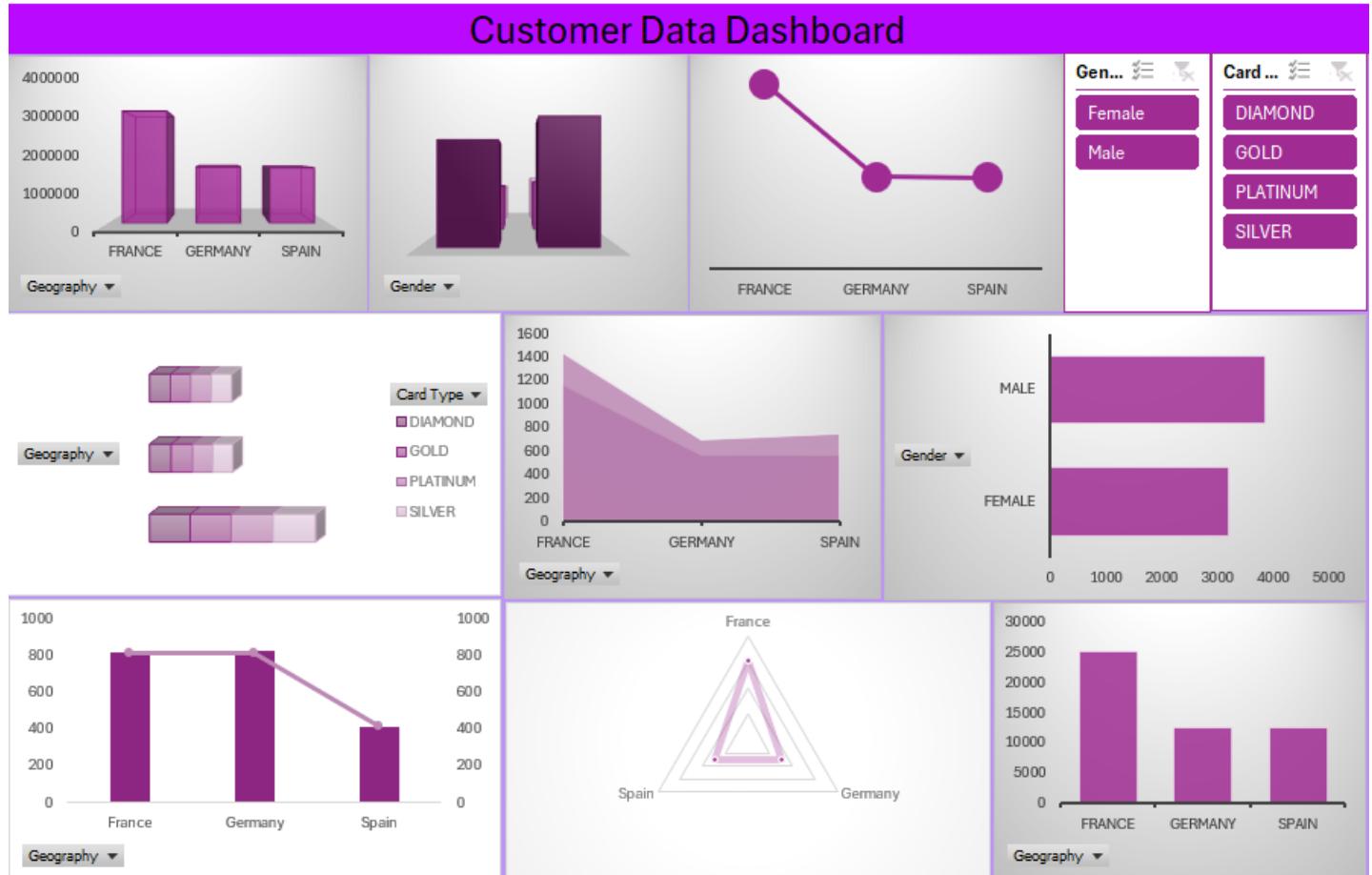


# CAPSTONE PROJECT

## EXCEL DASHBOARD:



## SQL QUESTIONS:

1. What is the total number of customers in the dataset?

```
107 •  create database Capstone;
108 •  use Capstone;
109 •  select * from customer;
110
111 •  SELECT COUNT(*) FROM CUSTOMER;
112
```

---

Result Grid | Filter Rows: Export: Wrap Cell Content: □

	COUNT(*)
▶	10000

2. How many customers have churned vs. not churned?

```
130
131      select exited, count(*) from customer group by exited;
132
```

---

Result Grid | Filter Rows: Export: Wrap Cell Content: □

	exited	count(*)
▶	1	2038
	0	7962

3. What is the average credit score of all customers?

```
116 •   select * from customer;
117 •   select avg(creditscore) from customer;
118
119
120
121
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	avg(creditscore)			

▶ 650.5288

4. List the number of customers from each country (Geography).

```
119
120 •   select geography, count(*) from customer group by geography;
121
122
123
124
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	geography	count(*)		
▶	France	5014		
	Spain	2477		
	Germany	2509		

5. Find the number of males vs. female customers.

```
122 • select gender, count(*) from customer group by gender;
123
124
125
126
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	gender	count(*)		
▶	Female	4543		
	Male	5457		

6. How many customers have zero account balance?

```
126 • select count(*) from customer where balance =0;
127
128
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	count(*)			
▶	3617			

Details of customer having 0 account balance:

Result Grid														
RowNumber	CustomerId	Surname	CreditScore	Geography	Gender	Age	Tenure	Balance	NumOfProducts	HasCrCard	IsActiveMember	EstimatedSalary	Exited	Comp
▶ 1	15634602	Hargrave	619	France	Female	42	2	0	1	1	1	101348.88	1	1
4	15701354	Boni	699	France	Female	39	1	0	2	0	0	93826.63	0	0
7	15592531	Bartlett	822	France	Male	50	7	0	2	1	1	10062.8	0	0
12	15737173	Andrews	497	Spain	Male	24	3	0	2	1	0	76390.01	0	0
13	15632264	Kay	476	France	Female	34	10	0	2	1	0	26260.98	0	0
14	15691483	Chin	549	France	Female	25	5	0	2	0	0	190857.79	0	0
15	15600882	Scott	635	Spain	Female	35	7	0	2	1	1	65951.65	0	0

7. What is the average balance of customers who have churned?

```
127  
128 •   select * from customer;  
129 •   select avg(balance) from customer where exited = 1;  
130
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
avg(balance)				
▶ 91109.47600588808				

8. Which country has the highest churn rate?

```
272  
273 •   select geography, count(*) as total_customer, sum(exited) as churned_customer,  
274      (sum(exited)*100/count(*)) as churn_rate from customer  
275      group by geography ;
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
geography	total_customer	churned_customer	churn_rate	
▶ Germany	2509	814	32.4432	
Spain	2477	413	16.6734	
France	5014	811	16.1747	

9. What is the average tenure of customers who have not churned?

```
134  
135 •   SELECT AVG(TENURE) FROM CUSTOMER WHERE EXITED=0;  
136
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
AVG(TENURE)				
▶ 5.0328				

10. Find the top 5 customers with the highest estimated salary who churned.

```

136
137 • select * from customer where exited=1 order by estimatedsalary desc limit 5
138

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows: |

```

	RowNumber	CustomerId	Surname	CreditScore	Geography	Gender	Age	Tenure	Balance	NumOfProducts	HasCrCard	IsActiveMember	EstimatedSalary	Exited
▶	8089	15815656	Hopkins	541	Germany	Female	39	9	100116.67	1	1	1	199808.1	1
	119	15661670	Chidozie	524	Germany	Female	31	8	107818.63	1	1	0	199725.39	1
	4548	15672152	Grant	850	Germany	Male	37	9	122506.38	1	0	1	199693.84	1
	3659	15661903	Hsia	699	France	Female	43	3	80764.03	1	1	0	199378.58	1
	207	15755262	McDonald	608	Spain	Female	41	3	89763.84	1	0	0	199304.74	1

- II. How many active members have more than 2 products?

```

304
305 • select * from customer;
306 • select count(*) from customer where isactivemember = 1 and numofproducts >=2;
307

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

```

	count(*)
▶	2588

Details of Active Members having 2 products

```

304
305 • select * from customer;
306 • select count(*) from customer where isactivemember = 1 and numofproducts >=2;
307 • select * from customer where isactivemember = 1 and numofproducts >=2;
308

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows: |

```

	RowNumber	CustomerId	Surname	CreditScore	Geography	Gender	Age	Tenure	Balance	NumOfProducts	HasCrCard	IsActiveMember	EstimatedSalary	Exited	Count
▶	7	15592531	Bardett	822	France	Male	50	7	0	2	1	1	10062.8	0	0
	9	15792365	He	501	France	Male	44	4	142051.07	2	0	1	74940.5	0	0
	15	15600882	Scott	635	Spain	Female	35	7	0	2	1	1	65951.65	0	0
	16	15643966	Goforth	616	Germany	Male	45	3	143129.41	2	0	1	64327.26	0	0
	18	15788218	Henderson	549	Spain	Female	24	9	0	2	1	1	14406.41	0	0
	20	15568982	Hao	726	France	Female	24	6	0	2	1	1	54724.03	0	0

customer 73 x

12. Compare the average balance between active and inactive customers

```
144  
145 • select isactivemember, round(avg(balance)) as avg_bal from customer group by isactivemember;  
146
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	isactivemember	avg_bal		
▶	1	75875		
	0	77134		

13. What is the average estimated salary per gender?

```
146  
147 • select * from customer;  
148 • select gender, round(avg(estimatedsalary)) as avg_estimatedsal from customer group by gender;  
149
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	gender	avg_estimatedsal		
▶	Female	100602		
	Male	99665		

14. List the count of churned customers per tenure year.

```
149  
150 • select * from customer;  
151 • select tenure, count(*) from customer where exited = 1 group by tenure;
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	tenure	count(*)		
▶	0	95		
	1	232		
	2	201		
	3	213		
	4	203		
	5	209		
	6	196		
	7	177		
	8	197		
	9	214		
	10	101		

Result 52 ×

15. Identify the churn rate for each product count.

```
277  
278 •   select* from customer;  
279 •   select numofproducts, count(*) as total_customer, sum(exited) as churned_customer,  
280     (sum(exited)*100/count(*)) as churn_rate from customer  
281   group by numofproducts ;  
282  
283  
284
```

Result Grid			
numofproducts	total_customer	churned_customer	churn_rate
1	5084	1409	27.7144
3	266	220	82.7068
2	4590	349	7.6035
4	60	60	100.0000

16. What is the churn rate segmented by age groups (e.g., 18-30, 31-45, etc.)?

```
272  
273 •   select geography, count(*) as total_customer, sum(exited) as churned_customer,  
274     (sum(exited)*100/count(*)) as churn_rate from customer  
275   group by geography ;  
276 •   select * from customer where numofproducts = 4;  
277  
278 •   select* from customer;  
279 •   select numofproducts, count(*) as total_customer, sum(exited) as churned_customer,  
280     (sum(exited)*100/count(*)) as churn_rate from customer  
281   group by numofproducts ;  
282
```

Result Grid				
	age_grp	total_customer	churned_customer	churn_rate
▶	18-30	1968	148	7.5203
	31-45	5921	933	15.7575
	46-60	1647	842	51.1233
	60+	464	115	24.7845

17. Which combinations of Geography and Gender have the highest churn rate?

```
264
265
266 •   select* from customer;
267 •   select geography, gender, count(*) as total_customer, sum(exited) as churned_customer,
268     (sum(exited)*100/count(*)) as churn_rate from customer
269   group by geography, gender order by churn_rate desc ;
```

Result Grid | Filter Rows: Export: Wrap Cell Content:

geography	gender	total_customer	churned_customer	churn_rate
▶ Germany	Female	1193	448	37.5524
Germany	Male	1316	366	27.8116
Spain	Female	1089	231	21.2121
France	Female	2261	460	20.3450
Spain	Male	1388	182	13.1124
France	Male	2753	351	12.7497

Result 52 x  
Output ::::

18. Find the average credit score and balance for churned customers per country.

```
152
153 •   select * from customer;
154 •   select geography, round(avg(creditscore)) as avg_creditscore,
155   round(avg(balance)) as avg_bal
156   from customer where exited = 1
157   group by geography;
```

Result Grid | Filter Rows: Export: Wrap Cell Content:

geography	exited	avg_creditscore	avg_bal
▶ France	1	642	71220
Spain	1	647	72513
Germany	1	648	120361

19. List the 10 most at-risk customer profiles based on high balance and churned.

```
159 • select * from customer ;
160 • select * from customer where exited = 1 order by balance desc limit 10;
161
```

RowNumber	CustomerId	Surname	CreditScore	Geography	Gender	Age	Tenure	Balance	NumOfProducts	HasCrCard	IsActiveMember	EstimatedSalary	Exited	Co
▶ 2093	15757408	Lo	655	Spain	Male	38	3	250898.09	3	0	1	81054	1	1
3281	15715622	To Rot	583	France	Female	57	3	238387.56	1	0	1	147964.99	1	1
8734	15714241	Haddon	749	Spain	Male	42	9	222267.63	1	0	0	101108.85	1	1
6718	15586674	Shaw	663	Spain	Female	58	5	216109.88	1	0	1	74176.71	1	1
139	15594408	Chia	584	Spain	Female	48	2	213146.2	1	1	0	75161.25	1	0
521	15671256	Macartney	850	France	Female	35	1	211774.31	1	1	0	188574.12	1	1
7354	15736420	Macdonald	596	France	Male	21	4	210433.08	2	0	1	197297.77	1	1
721	15721658	Fleming	672	Spain	Female	56	2	209767.31	2	1	1	150694.42	1	1
8795	15578671	Webb	706	Spain	Female	29	1	209490.21	1	1	1	133267.69	1	1
5872	15709920	Burke	479	France	Female	33	2	208165.53	1	0	0	50774.81	1	1

20. What percentage of customers with no credit card have churned?

```
211
212 • select * from customer;
213 • select sum( exited )/count(hasrcard) *100 as percent from customer where hasrcard =0 ;
214
```

percent
▶ 20.8149

21. Which customers have a balance higher than the average balance of all churned customers?

```

161
162 •   select * from customer ;
163 •   select * from customer where exited = 1 and balance > (select avg(balance) from customer);
164

```

RowNumber	CustomerId	Surname	CreditScore	Geography	Gender	Age	Tenure	Balance	NumOfProducts	HasCrCard	IsActiveMember	EstimatedSalary	Exited	CustomerID
3	15619304	Onio	502	France	Female	42	8	159660.8	3	1	0	113931.57	1	1
6	15574012	Chu	645	Spain	Male	44	8	113755.78	2	1	0	149756.71	1	1
8	15656148	Obinna	376	Germany	Female	29	4	115046.74	4	1	0	119346.88	1	1
17	15737452	Romeo	653	Germany	Male	58	1	132602.88	1	1	0	5097.67	1	0
36	15794171	Lombardo	475	France	Female	45	0	134264.04	1	1	0	27822.99	1	1
42	15738148	Clarke	465	France	Female	51	8	122522.32	1	0	0	181297.65	1	1
44	15755196	Lavine	834	France	Female	49	2	131394.56	1	0	0	194365.76	1	1
47	15602280	Martin	829	Germany	Female	27	9	112045.67	1	1	1	119708.21	1	1
48	15771573	Okagbue	637	Germany	Female	39	9	137843.8	1	1	1	117622.8	1	1
54	15702298	Parkhill	655	Germany	Male	41	8	125561.97	1	0	0	164040.94	1	1
55	15569590	Yoo	601	Germany	Male	42	1	98495.72	1	1	0	40014.76	1	1

customer 61 ×

22. Which countries have a churn rate higher than the overall churn rate?

```

297
298 •   use capstone;
299 •   select * from customer;
300 •   select geography, count(*) as total_customer, sum(exited) as churned_customer,
301     (sum(exited)*100/count(*)) as churn_rate from customer
302   group by geography
303   having churn_rate > (select sum(exited)*100/count(*) from customer);
304
305
306

```

geography	total_customer	churned_customer	churn_rate
Germany	2509	814	32.4432