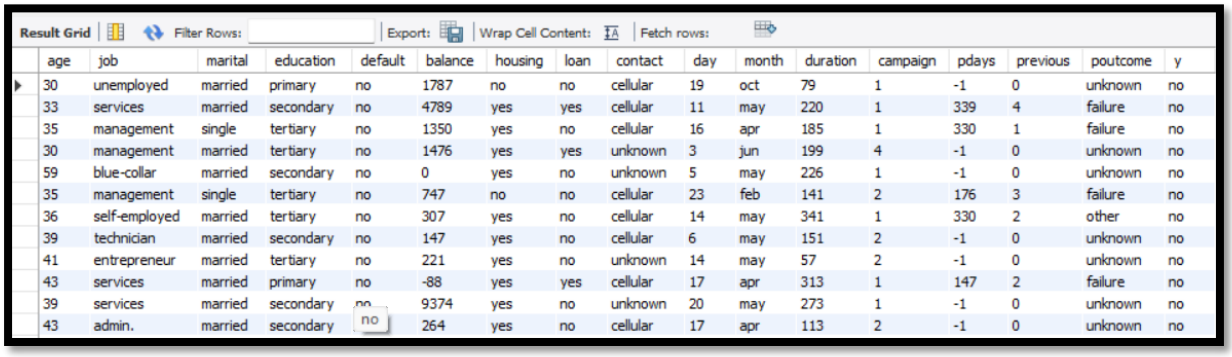
A. Basic Queries (Beginner Level)

1. View all records:

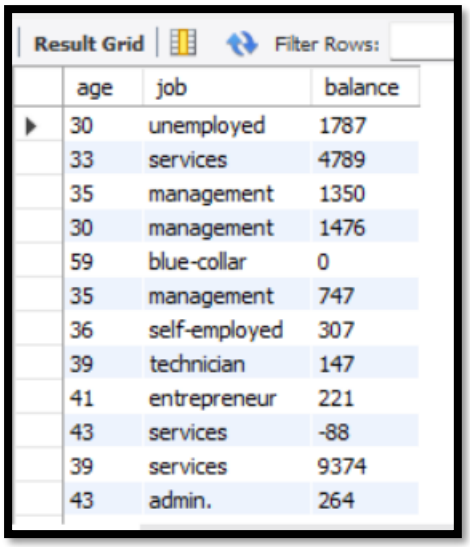
SELECT * FROM bank.bank;



age	job	marital	education	default	balance	housing	loan	contact	day	month	duration	campaign	pdays	previous	poutcome	y
30	unemployed	married	primary	no	1787	no	no	cellular	19	oct	79	1	-1	0	unknown	no
33	services	married	secondary	no	4789	yes	yes	cellular	11	may	220	1	339	4	failure	no
35	management	single	tertiary	no	1350	yes	no	cellular	16	apr	185	1	330	1	failure	no
30	management	married	tertiary	no	1476	yes	yes	unknown	3	jun	199	4	-1	0	unknown	no
59	blue-collar	married	secondary	no	0	yes	no	unknown	5	may	226	1	-1	0	unknown	no
35	management	single	tertiary	no	747	no	no	cellular	23	feb	141	2	176	3	failure	no
36	self-employed	married	tertiary	no	307	yes	no	cellular	14	may	341	1	330	2	other	no
39	technician	married	secondary	no	147	yes	no	cellular	6	may	151	2	-1	0	unknown	no
41	entrepreneur	married	tertiary	no	221	yes	no	unknown	14	may	57	2	-1	0	unknown	no
43	services	married	primary	no	-88	yes	yes	cellular	17	apr	313	1	147	2	failure	no
39	services	married	secondary	no	9374	yes	no	unknown	20	may	273	1	-1	0	unknown	no
43	admin.	married	secondary	no	264	yes	no	cellular	17	apr	113	2	-1	0	unknown	no

2. Select specific columns (e.g., age, job, and balance):

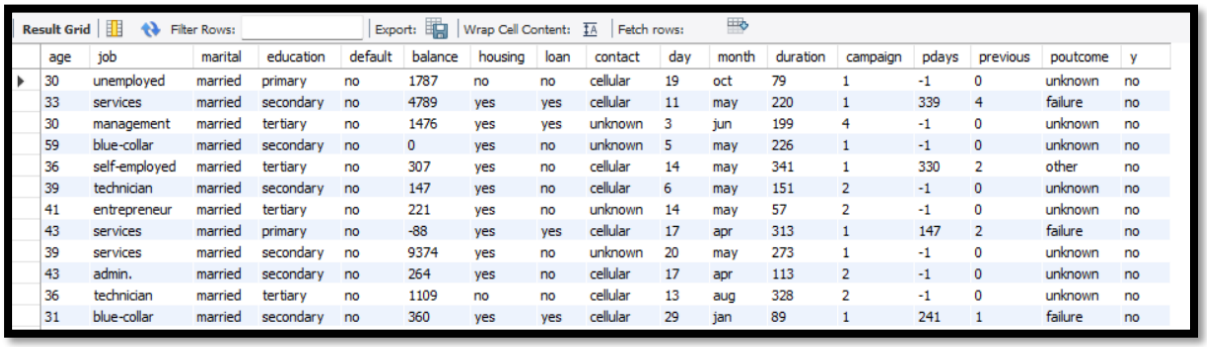
SELECT age, job, balance FROM bank.bank;



age	job	balance
30	unemployed	1787
33	services	4789
35	management	1350
30	management	1476
59	blue-collar	0
35	management	747
36	self-employed	307
39	technician	147
41	entrepreneur	221
43	services	-88
39	services	9374
43	admin.	264

3. Filter clients who are married:

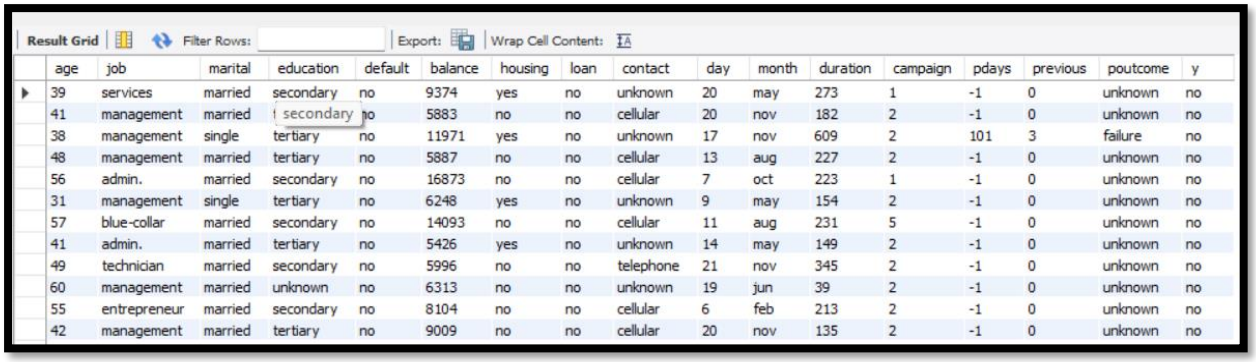
SELECT * FROM bank.bank WHERE marital = 'married';



age	job	marital	education	default	balance	housing	loan	contact	day	month	duration	campaign	pdays	previous	poutcome	y
30	unemployed	married	primary	no	1787	no	no	cellular	19	oct	79	1	-1	0	unknown	no
33	services	married	secondary	no	4789	yes	yes	cellular	11	may	220	1	339	4	failure	no
30	management	married	tertiary	no	1476	yes	yes	unknown	3	jun	199	4	-1	0	unknown	no
59	blue-collar	married	secondary	no	0	yes	no	unknown	5	may	226	1	-1	0	unknown	no
36	self-employed	married	tertiary	no	307	yes	no	cellular	14	may	341	1	330	2	other	no
39	technician	married	secondary	no	147	yes	no	cellular	6	may	151	2	-1	0	unknown	no
41	entrepreneur	married	tertiary	no	221	yes	no	unknown	14	may	57	2	-1	0	unknown	no
43	services	married	primary	no	-88	yes	yes	cellular	17	apr	313	1	147	2	failure	no
39	services	married	secondary	no	9374	yes	no	unknown	20	may	273	1	-1	0	unknown	no
43	admin.	married	secondary	no	264	yes	no	cellular	17	apr	113	2	-1	0	unknown	no
36	technician	married	tertiary	no	1109	no	no	cellular	13	aug	328	2	-1	0	unknown	no
31	blue-collar	married	secondary	no	360	yes	yes	cellular	29	jan	89	1	241	1	failure	no

4. Filter clients with a balance greater than 5000:

SELECT * FROM bank.bank WHERE balance > 5000;



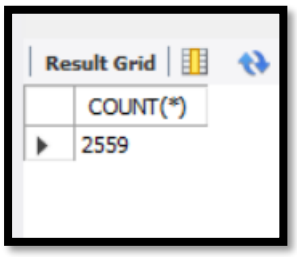
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

age	job	marital	education	default	balance	housing	loan	contact	day	month	duration	campaign	pdays	previous	poutcome	y
39	services	married	secondary	no	9374	yes	no	unknown	20	may	273	1	-1	0	unknown	no
41	management	married	secondary	no	5883	no	no	cellular	20	nov	182	2	-1	0	unknown	no
38	management	single	tertiary	no	11971	yes	no	unknown	17	nov	609	2	101	3	failure	no
48	management	married	tertiary	no	5887	no	no	cellular	13	aug	227	2	-1	0	unknown	no
56	admin.	married	secondary	no	16873	no	no	cellular	7	oct	223	1	-1	0	unknown	no
31	management	single	tertiary	no	6248	yes	no	unknown	9	may	154	2	-1	0	unknown	no
57	blue-collar	married	secondary	no	14093	no	no	cellular	11	aug	231	5	-1	0	unknown	no
41	admin.	married	tertiary	no	5426	yes	no	unknown	14	may	149	2	-1	0	unknown	no
49	technician	married	secondary	no	5996	no	no	telephone	21	nov	345	2	-1	0	unknown	no
60	management	married	unknown	no	6313	no	no	unknown	19	jun	39	2	-1	0	unknown	no
55	entrepreneur	married	secondary	no	8104	no	no	cellular	6	feb	213	2	-1	0	unknown	no
42	management	married	tertiary	no	9009	no	no	cellular	20	nov	135	2	-1	0	unknown	no

B. Intermediate Queries:

1. Count the number of clients with a housing loan:

SELECT COUNT(*)
FROM bank.bank
WHERE housing = 'yes';

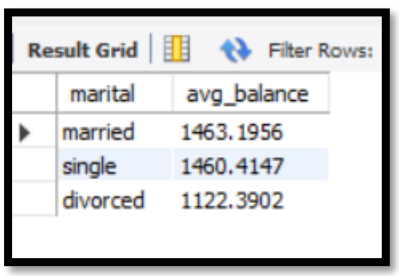


Result Grid

COUNT(*)
2559

2. Find the average balance of clients based on marital status:

SELECT marital, AVG(balance) AS avg_balance
FROM bank.bank
GROUP BY marital;

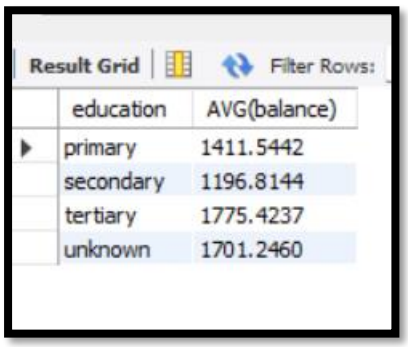


Result Grid | Filter Rows:

marital	avg_balance
married	1463.1956
single	1460.4147
divorced	1122.3902

3. **Find the average balance of customers for each education level:**

```
SELECT education, AVG(balance)
FROM bank.bank
GROUP BY education;
```

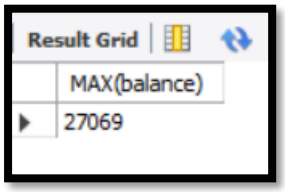


Result Grid | Filter Rows:

education	AVG(balance)
primary	1411.5442
secondary	1196.8144
tertiary	1775.4237
unknown	1701.2460

4. **Find the maximum balance among customers with personal loans:**

```
SELECT MAX(balance)
FROM bank.bank
WHERE loan = 'yes'
```

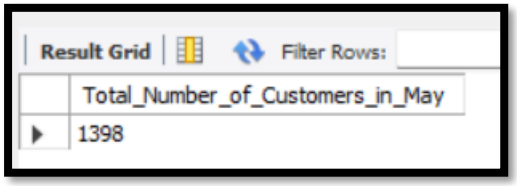


Result Grid

MAX(balance)
27069

5. **Find the number of customers contacted in May:**

```
SELECT COUNT(*) as Total_Number_of_Customers_in_May
FROM bank.bank
WHERE month = 'may';
```



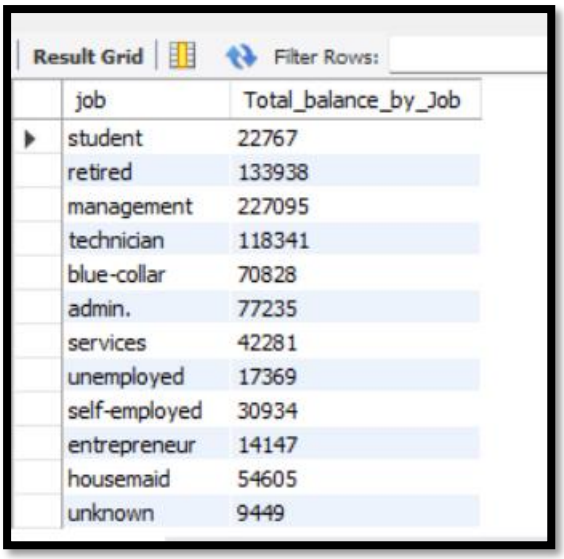
Result Grid | Filter Rows:

Total_Number_of_Customers_in_May
1398

C. Advanced:

1. **Find the total balance of customers who subscribed to a term deposit (y = 'yes'), grouped by job type:**

```
SELECT job, SUM(balance) as Total_balance_by_Job
FROM bank.bank
WHERE y = 'yes'
GROUP BY job;
```

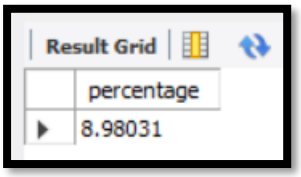


Result Grid | Filter Rows:

job	Total_balance_by_Job
student	22767
retired	133938
management	227095
technician	118341
blue-collar	70828
admin.	77235
services	42281
unemployed	17369
self-employed	30934
entrepreneur	14147
housemaid	54605
unknown	9449

2. **Calculate the percentage of customers who have a personal loan and housing loan:**

```
SELECT (COUNT(*) * 100.0 / (SELECT COUNT(*) FROM bank.bank)) AS percentage
FROM bank.bank
WHERE loan = 'yes' AND housing = 'yes';
```



Result Grid

percentage
8.98031

3. **Identify the customers with the longest duration of last contact who subscribed to a term deposit:**

```
SELECT *
FROM bank.bank
WHERE y = 'yes'
ORDER BY duration DESC
LIMIT 10;
```

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

age	job	marital	education	default	balance	housing	loan	contact	day	month	duration	campaign	pdays	previous	poutcome	y
36	entrepreneur	married	tertiary	no	3057	no	no	unknown	16	jun	2769	4	-1	0	unknown	yes
47	blue-collar	divorced	primary	no	126	yes	no	unknown	3	jun	2456	2	-1	0	unknown	yes
43	management	divorced	tertiary	no	388	yes	no	unknown	8	may	2087	2	-1	0	unknown	yes
54	technician	married	secondary	no	-315	no	yes	cellular	10	jul	2029	1	-1	0	unknown	yes
49	services	married	secondary	no	320	no	no	telephone	9	feb	1971	4	-1	0	unknown	yes
34	self-employed	single	tertiary	no	462	no	no	cellular	21	aug	1877	3	-1	0	unknown	yes
44	technician	single	secondary	no	244	yes	no	cellular	12	aug	1735	4	-1	0	unknown	yes
43	technician	married	secondary	no	3285	yes	no	unknown	13	may	1721	2	-1	0	unknown	yes
29	management	married	tertiary	no	199	yes	yes	unknown	7	may	1689	4	-1	0	unknown	yes
29	blue-collar	single	secondary	no	908	yes	no	unknown	20	jun	1663	1	-1	0	unknown	yes

4. **Find the relationship between education and the number of previous contacts in the previous campaign:**

```
SELECT education, AVG(previous)
FROM bank.bank
GROUP BY education
ORDER BY AVG(previous) DESC;
```

Result Grid | Filter Rows:

education	AVG(previous)
tertiary	0.6126
secondary	0.5286
unknown	0.5080
primary	0.4602