Project Title: Titanic Dataset Analysis Using MySQL

- **Subtitle: SQL-Based Data Exploration and Insights**

- **Tools Used: MySQL, Titanic Dataset, SQL Queries**

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Projetc Overview

"This project analyzes the Titanic dataset using SQL queries to uncover insights such as passenger demographics, survival rates, fare analysis, class distribution, and more. The goal is to demonstrate SQL proficiency in real-world data analysis."

Dataset Description

Include:
- Number of rows and columns
- Key columns: Name, Age, Sex, Pclass, Fare, Survived, Embarked, Cabin ,etc.

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
1	Died	3	Braund, Mr. Owen Harris	male	22	1	0	A/5 21171	7.25		S
2	Survived	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38	1	0	PC 17599	71.2833	C85	C
3	Survived	3	Heikkinen, Miss. Laina	female	26	0	0	STON/O2. 3101282	7.925		S
4	Survived	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35	1	0	113803	53.1	C123	S
5	Died	3	Allen, Mr. William Henry	male	35	0	0	373450	8.05		S
7	Died	1	McCarthy, Mr. Timothy J	male	54	0	0	17463	51.8625	E46	S
8	Died	3	Palsson, Master. Gosta Leonard	male	2	3	1	349909	21.075		S
9	Survived	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27	0	2	347742	11.1333		S
10	Survived	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14	1	0	237736	30.0708		C
11	Survived	3	Sandstrom, Miss. Marguerite Rut	female	4	1	1	PP 9549	16.7	G6	S
12	Survived	1	Bonnell, Miss. Elizabeth	female	58	0	0	113783	26.55	C103	S
13	Died	3	Saundercock, Mr. William Henry	male	20	0	0	A/5. 2151	8.05		S
14	Died	3	Andersson, Mr. Anders Johan	male	39	1	5	347082	31.275		S
15	Died	3	Vestrom, Miss. Hulda Amanda Adolfina	female	14	0	0	350406	7.8542		S
16	Survived	2	Hewlett, Mrs. (Mary D Kingcome)	female	55	0	0	248706	16		S
17	Died	3	Rice, Master. Eugene	male	2	4	1	382652	29.125		Q
19	Died	3	Vander Planke, Mrs. Julius (Emelia Maria Vande...	female	31	1	0	345763	18		S

Basic Retrieval & Filtering

Que 1 :-Display all columns for all passengers in the Titanic dataset
Query :-   select * from titanic;

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
▶	1	Died	3	Braund, Mr. Owen Harris	male	22	1	0	A/5 21171	7.25		S
	2	Survived	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38	1	0	PC 17599	71.2833	C85	C
	3	Survived	3	Heikkinen, Miss. Laina	female	26	0	0	STON/O2. 3101282	7.925		S
	4	Survived	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35	1	0	113803	53.1	C123	S
	5	Died	3	Allen, Mr. William Henry	male	35	0	0	373450	8.05		S
	7	Died	1	McCarthy, Mr. Timothy J	male	54	0	0	17463	51.8625	E46	S
	8	Died	3	Palsson, Master. Gosta Leonard	male	2	3	1	349909	21.075		S
	9	Survived	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27	0	2	347742	11.1333		S
	10	Survived	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14	1	0	237736	30.0708		C
	11	Survived	3	Sandstrom, Miss. Marguerite Rut	female	4	1	1	PP 9549	16.7	G6	S
	12	Survived	1	Bonnell, Miss. Elizabeth	female	58	0	0	113783	26.55	C103	S
	13	Died	3	Saundercock, Mr. William Henry	male	20	0	0	A/5. 2151	8.05		S
	14	Died	3	Andersson, Mr. Anders Johan	male	39	1	5	347082	31.275		S
	15	Died	3	Vestrom, Miss. Hulda Amanda Adolfina	female	14	0	0	350406	7.8542		S
	16	Survived	2	Hewlett, Mrs. (Mary D Kingcome)	female	55	0	0	248706	16		S
	17	Died	3	Rice, Master. Eugene	male	2	4	1	382652	29.125		Q
	19	Died	3	Vander Planke, Mrs. Julius (Emelia Maria Vande...	female	31	1	0	345763	18		S
	21	Died	2	Fynney, Mr. Joseph J	male	35	0	0	239865	26		S
	22	Survived	2	Beesley, Mr. Lawrence	male	34	0	0	248698	13	D56	S
	23	Survived	3	McGowan, Miss. Anna "Annie"""	female	15	0	0	330923	8.0292		Q
	24	Survived	1	Sloper, Mr. William Thompson	male	28	0	0	113788	35.5	A6	S

Basic Retrieval & Filtering

Que 2 :-Show the first 10 passengers in the dataset.
Query :-   select * from titanic limit 10;

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
1	Died	3	Braund, Mr. Owen Harris	male	22	1	0	A/5 21171	7.25		S
2	Survived	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38	1	0	PC 17599	71.2833	C85	C
3	Survived	3	Heikkinen, Miss. Laina	female	26	0	0	STON/O2. 3101282	7.925		S
4	Survived	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35	1	0	113803	53.1	C123	S
5	Died	3	Allen, Mr. William Henry	male	35	0	0	373450	8.05		S
7	Died	1	McCarthy, Mr. Timothy J	male	54	0	0	17463	51.8625	E46	S
8	Died	3	Palsson, Master. Gosta Leonard	male	2	3	1	349909	21.075		S
9	Survived	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27	0	2	347742	11.1333		S
10	Survived	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14	1	0	237736	30.0708		C
11	Survived	3	Sandstrom, Miss. Marguerite Rut	female	4	1	1	PP 9549	16.7	G6	S

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

Basic Retrieval & Filtering

Que 3 :-List the average age of passengers grouped by class and embarkation port.
Query :- **select avg(age) from titanic group by Pclass and Embarked;**

	avg(age)
▶	29.69911764705882

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Basic Retrieval & Filtering

Que 4 :-Count how many passengers had zero fare.
Query :- **select count(*) from titanic where fare=0;**

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
180	Died	3	Leonard, Mr. Lionel	male	36	0	0	LINE	0		S
264	Died	1	Harrison, Mr. William	male	40	0	0	112059	0	B94	S
272	Survived	3	Tornquist, Mr. William Henry	male	25	0	0	LINE	0		S
303	Died	3	Johnson, Mr. William Cahoone Jr	male	19	0	0	LINE	0		S
598	Died	3	Johnson, Mr. Alfred	male	49	0	0	LINE	0		S
807	Died	1	Andrews, Mr. Thomas Jr	male	39	0	0	112050	0	A36	S
823	Died	1	Reuchlin, Jonkheer. John George	male	38	0	0	19972	0		S

Advanced Filtering

Que 5 :-List passengers who were either in 1st or 2nd class and survived.
Query :- **select * from titanic where Pclass in (1,2) and survived=Survived;**

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
▶	2	Survived	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38	1	0	PC 17599	71.2833	C85	C
	4	Survived	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35	1	0	113803	53.1	C123	S
	10	Survived	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14	1	0	237736	30.0708		C
	12	Survived	1	Bonnell, Miss. Elizabeth	female	58	0	0	113783	26.55	C103	S
	16	Survived	2	Hewlett, Mrs. (Mary D Kingcome)	female	55	0	0	248706	16		S
	22	Survived	2	Beesley, Mr. Lawrence	male	34	0	0	248698	13	D56	S
	24	Survived	1	Sloper, Mr. William Thompson	male	28	0	0	113788	35.5	A6	S
	44	Survived	2	Laroche, Miss. Simonne Marie Anne Andree	female	3	1	2	SC/Paris 2123	41.5792		C
	53	Survived	1	Harper, Mrs. Henry Sleeper (Myna Haxtun)	female	49	1	0	PC 17572	76.7292	D33	C
	54	Survived	2	Faunthorpe, Mrs. Lizzie (Elizabeth Anne Wilkinson)	female	29	1	0	2926	26		S
	57	Survived	2	Rugg, Miss. Emily	female	21	0	0	C.A. 31026	10.5		S
	59	Survived	2	West, Miss. Constance Mirium	female	5	1	2	C.A. 34651	27.75		S
	62	Survived	1	Icard, Miss. Amelie	female	38	0	0	113572	80	B28	
	67	Survived	2	Nye, Mrs. (Elizabeth Ramell)	female	29	0	0	C.A. 29395	10.5	F33	S
	79	Survived	2	Caldwell, Master. Alden Gates	male	0.83	0	2	248738	29		S
	85	Survived	2	Ilett, Miss. Bertha	female	17	0	0	SO/C 14885	10.5		S
	89	Survived	1	Fortune, Miss. Mabel Helen	female	23	3	2	19950	263	C23 ...	S
	98	Survived	1	Greenfield, Mr. William Bertram	male	23	0	1	PC 17759	63.3583	D10 ...	C
	99	Survived	2	Doling, Mrs. John T (Ada Julia Bone)	female	34	0	1	231919	23		S
	124	Survived	2	Webber, Miss. Susan	female	32.5	0	0	27267	13	E101	S
	134	Survived	2	Weisz, Mrs. Leopold (Mathilde Francoise Pede)	female	29	1	0	228414	26		S
	137	Survived	1	Newsom, Miss. Helen Monypeny	female	19	0	2	11752	26.2833	D47	S
	152	Survived	1	Pears, Mrs. Thomas (Edith Wearne)	female	22	1	0	113776	66.6	C2	S
	162	Survived	2	Watt, Mrs. James (Elizabeth "Bessie"" Inglis Miln...	female	40	0	0	C.A. 33595	15.75		S
	184	Survived	2	Becker, Master. Richard F	male	1	2	1	230136	39	F4	S
	188	Survived	1	Romaine, Mr. Charles Hallace ("Mr C Rolmane""")	male	45	0	0	111428	26.55		S

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Advanced Filtering

Que 6 :-Show names of passengers whose fare was between 50 and 100.
Query :- select * from titanic where fare between 50 and 100;

name	fare
Cumings, Mrs. John Bradley (Florence Briggs Th...	71.2833
Futrelle, Mrs. Jacques Heath (Lily May Peel)	53.1
McCarthy, Mr. Timothy J	51.8625
Meyer, Mr. Edgar Joseph	82.1708
Holverson, Mr. Alexander Oskar	52
Harper, Mrs. Henry Sleeper (Myna Haxtun)	76.7292
Ostby, Mr. Engelhart Cornelius	61.9792
Icard, Miss. Amelie	80
Harris, Mr. Henry Birkhardt	83.475
Hood, Mr. Ambrose Jr	73.5
Bing, Mr. Lee	56.4958
Chaffee, Mr. Herbert Fuller	61.175
Greenfield, Mr. William Bertram	63.3583
White, Mr. Richard Frasar	77.2875
Porter, Mr. Walter Chamberlain	52
Hickman, Mr. Stanley George	73.5
White, Mr. Percival Wayland	77.2875
Futrelle, Mr. Jacques Heath	53.1
Giglio, Mr. Victor	79.2
Pears, Mrs. Thomas (Edith Wearne)	66.6
Williams, Mr. Charles Duane	61.3792

Advanced Filtering

Que 7 :-Show passengers whose names contain 'John'.
Query :- select * from titanic where name like '%john%' ;

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
2	Survived	1	Cumings, Mrs. John Bradley (Florence Briggs Th...	female	38	1	0	PC 17599	71.2833	C85	C
9	Survived	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27	0	2	347742	11.1333		S
42	Died	2	Turpin, Mrs. William John Robert (Dorothy Ann ...	female	27	1	0	11668	21		S
99	Survived	2	Doling, Mrs. John T (Ada Julia Bone)	female	34	0	1	231919	23		S
113	Died	3	Barton, Mr. David John	male	22	0	0	324669	8.05		S
118	Died	2	Turpin, Mr. William John Robert	male	29	1	0	11668	21		S
161	Died	3	Cribb, Mr. John Hatfield	male	44	0	1	371362	16.1		S
163	Died	3	Bengtsson, Mr. John Viktor	male	26	0	0	347068	7.775		S
166	Survived	3	Goldsmith, Master. Frank John William "Frankie"""	male	9	0	2	363291	20.525		S
173	Survived	3	Johnson, Miss. Eleanor Ileen	female	1	1	1	347742	11.1333		S
189	Died	3	Bourke, Mr. John	male	40	1	1	364849	15.5		Q
213	Died	3	Perkin, Mr. John Henry	male	22	0	0	A/5 21174	7.25		S
227	Survived	2	Mellors, Mr. William John	male	19	0	0	SW/PP 751	10.5		S
228	Died	3	Lovell, Mr. John Hall ("Henry"")"	male	20.5	0	0	A/5 21173	7.25		S
303	Died	3	Johnson, Mr. William Cahoone Jr	male	19	0	0	LINE	0		S
329	Survived	3	Goldsmith, Mrs. Frank John (Emily Alice Brown)	female	31	1	1	363291	20.525		S
402	Died	3	Adams, Mr. John	male	26	0	0	341826	8.05		S
419	Died	2	Matthews, Mr. William John	male	30	0	0	28228	13		S
468	Died	1	Smart, Mr. John Montgomery	male	56	0	0	113792	26.55		S
549	Died	3	Goldsmith, Mr. Frank John	male	33	1	1	363291	20.525		S
550	Survived	2	Davies, Master. John Morgan Jr	male	8	1	1	C.A. 33112	36.75		S

Advanced Filtering

Que 8 :-Display passengers with ages not between 20 and 40.
Query :- select name ,age from titanic where age not between 20 and 40;

name	age
McCarthy, Mr. Timothy J	54
Palsson, Master. Gosta Leonard	2
Nasser, Mrs. Nicholas (Adele Achem)	14
Sandstrom, Miss. Marguerite Rut	4
Bonnell, Miss. Elizabeth	58
Vestrom, Miss. Hulda Amanda Adolfina	14
Hewlett, Mrs. (Mary D Kingcome)	55
Rice, Master. Eugene	2
McGowan, Miss. Anna "Annie"""	15
Palsson, Miss. Torborg Danira	8
Fortune, Mr. Charles Alexander	19
Wheadon, Mr. Edward H	66
Holverson, Mr. Alexander Oskar	42
Vander Planke, Miss. Augusta Maria	18
Nicola-Yarred, Miss. Jamila	14
Laroche, Miss. Simonne Marie Anne A...	3
Devaney, Miss. Margaret Delia	19
Arnold-Franchi, Mrs. Josef (Josefine ...	18
Panula, Master. Juha Niilo	7
Harper, Mrs. Henry Sleeper (Myna Ha...	49

Sorting & Ordering

Que 9 :-List the top 10 youngest passengers.
Query :-select * from titanic order by age limit 10;

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
804	Survived	3	Thomas, Master. Assad Alexander	male	0.42	0	1	2625	8.5167		C
756	Survived	2	Hamalainen, Master. Viljo	male	0.67	1	1	250649	14.5		S
645	Survived	3	Baclini, Miss. Eugenie	female	0.75	2	1	2666	19.2583		C
470	Survived	3	Baclini, Miss. Helene Barbara	female	0.75	2	1	2666	19.2583		C
79	Survived	2	Caldwell, Master. Alden Gates	male	0.83	0	2	248738	29		S
832	Survived	2	Richards, Master. George Sibley	male	0.83	1	1	29106	18.75		S
306	Survived	1	Allison, Master. Hudson Trevor	male	0.92	1	2	113781	151.55	C22 C26	S
165	Died	3	Panula, Master. Eino Viljami	male	1	4	1	3101295	39.6875		S
382	Survived	3	Nakid, Miss. Maria ("Mary"")"	female	1	0	2	2653	15.7417		C
789	Survived	3	Dean, Master. Bertram Vere	male	1	1	2	C.A. 2315	20.575		S

Sorting & Ordering

Que 10 :-Display the names of the 5 passengers who paid the lowest fares.
Query :-select name ,fare from titanic order by fare limit 5;

	name	fare
▶	Andrews, Mr. Thomas Jr	0
	Johnson, Mr. William Cahoone Jr	0
	Tornquist, Mr. William Henry	0
	Harrison, Mr. William	0
	Leonard, Mr. Lionel	0

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Sorting & Ordering

Que 11 :-List passengers sorted by survival status and then by fare in descending order.
Query :-select * from titanic order by survival ,fare desc;

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
▶	439	Died	1	Fortune, Mr. Mark	male	64	1	4	19950	263	C23 C25 C27	S
	28	Died	1	Fortune, Mr. Charles Alexander	male	19	3	2	19950	263	C23 C25 C27	S
	119	Died	1	Baxter, Mr. Quigg Edmond	male	24	0	1	PC 17558	247.5208	B58 B60	C
	378	Died	1	Widener, Mr. Harry Elkins	male	27	0	2	113503	211.5	C82	C
	333	Died	1	Graham, Mr. George Edward	male	38	0	1	PC 17582	153.4625	C91	S
	298	Died	1	Allison, Miss. Helen Loraine	female	2	1	2	113781	151.55	C22 C26	S
	499	Died	1	Allison, Mrs. Hudson J C (Bessie Waldo Daniels)	female	25	1	2	113781	151.55	C22 C26	S
	374	Died	1	Ringhini, Mr. Sante	male	22	0	0	PC 17760	135.6333		C
	660	Died	1	Newell, Mr. Arthur Webster	male	58	0	2	35273	113.275	D48	C
	699	Died	1	Thayer, Mr. John Borland	male	49	1	1	17421	110.8833	C68	C
	506	Died	1	Penasco y Castellana, Mr. Victor de Satode	male	18	1	0	PC 17758	108.9	C65	C
	545	Died	1	Douglas, Mr. Walter Donald	male	50	1	0	PC 17761	106.425	C86	C
	246	Died	1	Minahan, Dr. William Edward	male	44	2	0	19928	90	C78	Q
	63	Died	1	Harris, Mr. Henry Birkhardt	male	45	1	0	36973	83.475	C83	S
	35	Died	1	Meyer, Mr. Edgar Joseph	male	28	1	0	PC 17604	82.1708		C
	263	Died	1	Taussig, Mr. Emil	male	52	1	1	110413	79.65	E67	S
	790	Died	1	Guggenheim, Mr. Benjamin	male	46	0	0	PC 17593	79.2	B82 B84	C
	140	Died	1	Giglio, Mr. Victor	male	24	0	0	PC 17593	79.2	B86	C

Sorting & Ordering

Que 12 :-List top 5 oldest passengers who survived.
Query :-select * from titanic where survived ='survived' order by age desc limit 5;

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

PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
631	Survived	1	Barkworth, Mr. Algernon Henry Wilson	male	80	0	0	27042	30	A23	S
484	Survived	3	Turkula, Mrs. (Hedwig)	female	63	0	0	4134	9.5875		S
276	Survived	1	Andrews, Miss. Kornelia Theodosia	female	63	1	0	13502	77.9583	D7	S
830	Survived	1	Stone, Mrs. George Nelson (Martha Evelyn)	female	62	0	0	113572	80	B28	
571	Survived	2	Harris, Mr. George	male	62	0	0	S.W./PP 752	10.5		S

Conditional Logic (CASE)

Que 13 :-Create a new column that labels passengers as 'Minor' or 'Adult' based on age.
Query :-**# to add column**
```
alter table titanic add column adult varchar(50);
# case condition
update titanic set adult=case
when age > 18 then 'Adult'
else 'Minor'
end;
```

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

name	age	adult
Braund, Mr. Owen Harris	22	Adult
Cumings, Mrs. John Bradley (Florence Briggs Th...	38	Adult
Heikkinen, Miss. Laina	26	Adult
Futrelle, Mrs. Jacques Heath (Lily May Peel)	35	Adult
Allen, Mr. William Henry	35	Adult
McCarthy, Mr. Timothy J	54	Adult
Palsson, Master. Gosta Leonard	2	Minor
Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	27	Adult
Nasser, Mrs. Nicholas (Adele Achem)	14	Minor
Sandstrom, Miss. Marguerite Rut	4	Minor

Conditional Logic (CASE)

Que 14 :-Create a column showing 'Expensive', 'Moderate', or 'Cheap' based on fare..
Query :-**# to add column**
       alter table titanic add column Fare_type varchar(50);
       # case condition
       update titanic set fare_type=case
       when fare< 100 then 'Cheap'
       when fare between 101 and 399 then 'Moderate'
       when fare>399 then 'Expensive'
       end;

name	fare	Fare_type
Ward, Miss. Anna	512.3292	Expensive
Cardeza, Mr. Thomas Drake Martinez	512.3292	Expensive
Lesurer, Mr. Gustave J	512.3292	Expensive
Fortune, Mr. Charles Alexander	263	Moderate
Fortune, Miss. Mabel Helen	263	Moderate
Fortune, Miss. Alice Elizabeth	263	Moderate
Fortune, Mr. Mark	263	Moderate
Ryerson, Miss. Emily Borie	262.375	Moderate

Set Operations / Pattern Matching

Que 15 :-List passengers with titles like 'Mr.' or 'Mrs.' in their name.
Query :-select * from titanic where name like '%Mr.%' or name like 'Mrs.';

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	name
▶	Braund, Mr. Owen Harris
	Cumings, Mrs. John Bradley (Florence Briggs Th...
	Futrelle, Mrs. Jacques Heath (Lily May Peel)
	Allen, Mr. William Henry
	McCarthy, Mr. Timothy J
	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)
	Nasser, Mrs. Nicholas (Adele Achem)
	Saundercock, Mr. William Henry
	Andersson, Mr. Anders Johan
	Hewlett, Mrs. (Mary D Kingcome)
	Vander Planke, Mrs. Julius (Emelia Maria Vande...
	Fynney, Mr. Joseph J
	Beesley, Mr. Lawrence

Set Operations / Pattern Matching

Que 16 :-Find passengers who embarked from either 'C' or 'Q' using IN.
Query :-select * from titanic where embarked in ('C','Q');

name	embarked
Cumings, Mrs. John Bradley (Florence Briggs Th...	C
Nasser, Mrs. Nicholas (Adele Achem)	C
Rice, Master. Eugene	Q
McGowan, Miss. Anna "Annie"""	Q
Uruchurtu, Don. Manuel E	C
Meyer, Mr. Edgar Joseph	C
Nicola-Yarred, Miss. Jamila	C
Laroche, Miss. Simonne Marie Anne Andree	C
Devaney, Miss. Margaret Delia	Q
Harper, Mrs. Henry Sleeper (Myna Haxtun)	C
Ostby, Mr. Engelhart Cornelius	C
Novel, Mr. Mansouer	C
Sirayanian, Mr. Orsen	C

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

Set Operations / Pattern Matching

Que 17 :-Find passengers with duplicate fare values.
Query :-SELECT * FROM titanic WHERE fare IN (select fare from titanic as count group
by fare having count(fare)>1);

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embark
▶	1	Died	3	Braund, Mr. Owen Harris	male	22	1	0	A/5 21171	7.25		S
	3	Survived	3	Heikkinen, Miss. Laina	female	26	0	0	STON/O2. 3101282	7.925		S
	4	Survived	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35	1	0	113803	53.1	C123	S
	5	Died	3	Allen, Mr. William Henry	male	35	0	0	373450	8.05		S
	8	Died	3	Palsson, Master. Gosta Leonard	male	2	3	1	349909	21.075		S
	9	Survived	3	Johnson, Mrs. Oscar W (Elisabeth Vilhelmina Berg)	female	27	0	2	347742	11.1333		S
	10	Survived	2	Nasser, Mrs. Nicholas (Adele Achem)	female	14	1	0	237736	30.0708		C
	11	Survived	3	Sandstrom, Miss. Marguerite Rut	female	4	1	1	PP 9549	16.7	G6	S
	12	Survived	1	Bonnell, Miss. Elizabeth	female	58	0	0	113783	26.55	C103	S
	13	Died	3	Saundercock, Mr. William Henry	male	20	0	0	A/5. 2151	8.05		S
	14	Died	3	Andersson, Mr. Anders Johan	male	39	1	5	347082	31.275		S
	15	Died	3	Vestrom, Miss. Hulda Amanda Adolfina	female	14	0	0	350406	7.8542		S
	17	Died	3	Rice, Master. Eugene	male	2	4	1	382652	29.125		Q
	19	Died	3	Vander Planke, Mrs. Julius (Emelia Maria Vande...	female	31	1	0	345763	18		S

Subqueries

Que 18 :-Find passengers who paid more than the average fare.
Query :-select * from titanic where fare> (select avg(fare) from titanic);

	PassengerId	Survived	Pclass	Name	Sex	Age	SibSp	Parch	Ticket	Fare	Cabin	Embarked
▶	2	Survived	1	Cumings, Mrs. John Bradley (Florence Briggs Th…	female	38	1	0	PC 17599	71.2833	C85	C
	4	Survived	1	Futrelle, Mrs. Jacques Heath (Lily May Peel)	female	35	1	0	113803	53.1	C123	S
	7	Died	1	McCarthy, Mr. Timothy J	male	54	0	0	17463	51.8625	E46	S
	24	Survived	1	Sloper, Mr. William Thompson	male	28	0	0	113788	35.5	A6	S
	28	Died	1	Fortune, Mr. Charles Alexander	male	19	3	2	19950	263	C23 C25 C27	S
	35	Died	1	Meyer, Mr. Edgar Joseph	male	28	1	0	PC 17604	82.1708		C
	36	Died	1	Holverson, Mr. Alexander Oskar	male	42	1	0	113789	52		S
	44	Survived	2	Laroche, Miss. Simonne Marie Anne Andree	female	3	1	2	SC/Paris 2123	41.5792		C
	51	Died	3	Panula, Master. Juha Niilo	male	7	4	1	3101295	39.6875		S
	53	Survived	1	Harper, Mrs. Henry Sleeper (Myna Haxtun)	female	49	1	0	PC 17572	76.7292	D33	C
	55	Died	1	Ostby, Mr. Engelhart Cornelius	male	65	0	1	113509	61.9792	B30	C
	60	Died	3	Goodwin, Master. William Frederick	male	11	5	2	CA 2144	46.9		S
	62	Survived	1	Icard, Miss. Amelie	female	38	0	0	113572	80	B28	
	63	Died	1	Harris, Mr. Henry Birkhardt	male	45	1	0	36973	83.475	C83	S
	72	Died	3	Goodwin, Miss. Lillian Amy	female	16	5	2	CA 2144	46.9		S

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

Subqueries

Que 19 :-List passengers older than the average age.

Query :-select name ,age from titanic where age>(select avg(age) from titanic);

name	age
Cumings, Mrs. John Bradley (Florence Briggs Th...	38
Futrelle, Mrs. Jacques Heath (Lily May Peel)	35
Allen, Mr. William Henry	35
McCarthy, Mr. Timothy J	54
Bonnell, Miss. Elizabeth	58
Andersson, Mr. Anders Johan	39
Hewlett, Mrs. (Mary D Kingcome)	55
Vander Planke, Mrs. Julius (Emelia Maria Vande...	31
Fynney, Mr. Joseph J	35
Beesley, Mr. Lawrence	34
Asplund, Mrs. Carl Oscar (Selma Augusta Emilia ...	38
Uruchurtu, Don. Manuel E	40
Wheadon, Mr. Edward H	66
Holverson, Mr. Alexander Oskar	42

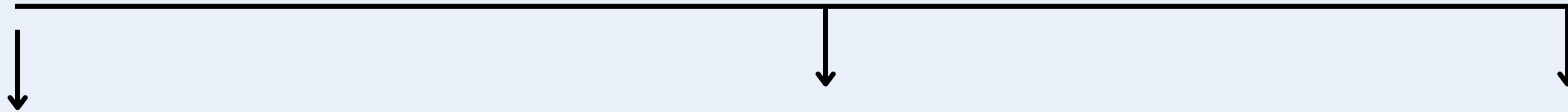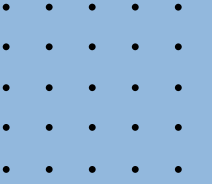Result Grid | Filter Rows: | Export: | Wrap Cell Content: A

Subqueries

Que 20 :-Find the name(s) of the youngest passenger(s).
Query :-select name,age from titanic where age=(select min(age) from titanic);

Result Grid | Filter Rows: | Export: | Wrap Cel

name	age
Thomas, Master. Assad Alexander	0.42

Key Insights

- The dataset contains a total of 891 passengers.
- Most passengers embarked from port 'S' (Southampton).
- Fewer passengers came from ports 'C' (Cherbourg) and 'Q' (Queenstown).
- The average fare paid by passengers was around 32.

- The highest fare recorded was $512.33, likely for a 1st-class passenger.
- Many 3rd class passengers paid less than $20.
- A significant number of passengers traveled free of cost or with low fare, possibly crew or infants.

- The average age of passengers was about 29.7 years.
- 177 records had missing values for the age column
- 177 records had missing values for the age column

Conclusion

Working on the Titanic dataset using MySQL has been a valuable learning experience and a great opportunity to strengthen my understanding of SQL. This project allowed me to apply various SQL concepts such as data selection, filtering, aggregation, grouping, conditional logic, subqueries, and pattern matching in a practical and meaningful way.

By exploring real-world data:
- I learned how to structure SQL queries to answer specific business questions.
- I developed confidence in using GROUP BY, HAVING, SUBQUERY and CASE statements to extract deeper insights.
- Handling missing data and filtering conditions helped me think more critically about data quality and interpretation.
- Writing queries for survival analysis and fare distribution improved my skills in data-driven storytelling.