AD 688
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Assignment 2
2/22/2022

Section 1

3. SELECT * FROM Book; SELECT * FROM Patron; SELECT * FROM Loan;

	call_no	title	subject
1	100	Physics Handbook	Physics
2	200	Database Systems	Computing
3	300	Modula-2	Computing
4	400	Database Design	Computing
5	500	Software Testing	Computing
6	600	Business Society	Business
7	700	Graphs	Mathematics
8	800	Cell Biology	Biology
9	900	Set Theory	Mathematics

	user_id	name	age
1	100	Wong	22
2	150	Colin	31
3	200	King	21
4	250	Das	67
5	300	Niall	17
6	350	Smith	72
7	400	Jones	41

	call_no	user_id	fine	paid
1	100	100	NULL	yes
2	300	100	NULL	NULL
3	900	200	1.9	yes
4	400	200	16.3	yes
5	600	200	16.3	yes
6	500	250	NULL	NULL
7	600	250	36.5	yes
8	700	300	NULL	NULL
9	800	350	2.9	yes
10	900	400	NULL	NULL

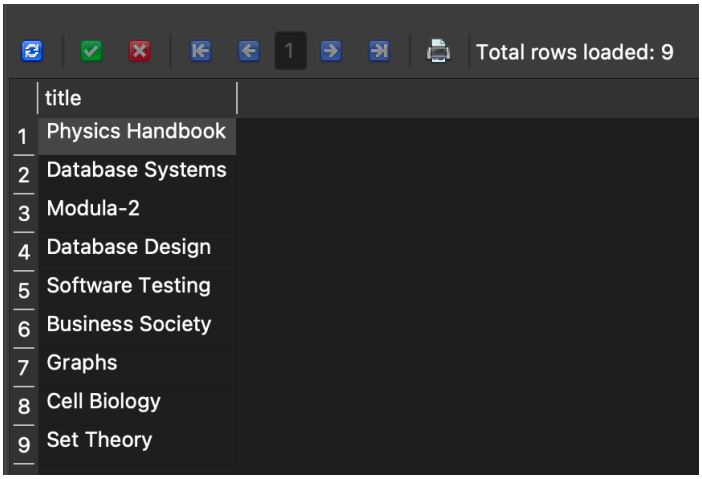
4. ALTER table Patron ADD address varchar(30);

	user_id	name	age	address
1	100	Wong	22	NULL
2	150	Colin	31	NULL
3	200	King	21	NULL
4	250	Das	67	NULL
5	300	Niall	17	NULL
6	350	Smith	72	NULL
7	400	Jones	41	NULL

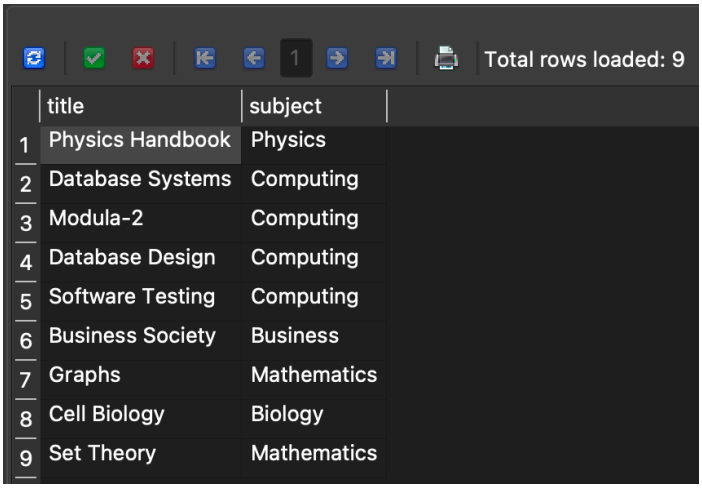
5. CREATE TABLE Seniors (user_id INT NOT NULL, name varchar(50) NOT NULL, age INT NOT NULL, address varchar(30)); INSERT INTO Seniors SELECT * From Patron where age > 65; SELECT * From Seniors;

	user_id	name	age	address
1	250	Das	67	NULL
2	350	Smith	72	NULL

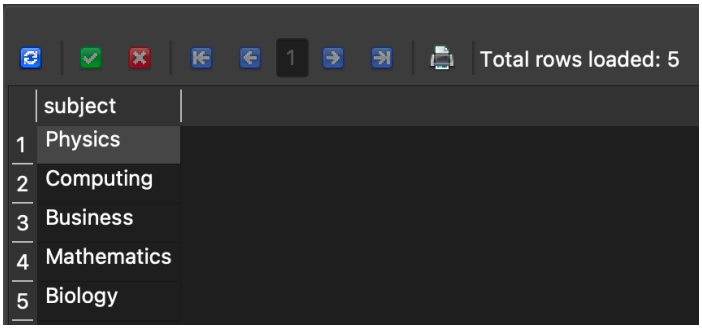
6. `SELECT DISTINCT title FROM Book;`



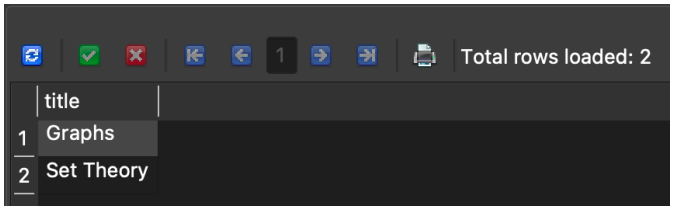
7. `SELECT title, subject FROM Book;`



8. `SELECT DISTINCT subject FROM Book;`



9. `SELECT title FROM Book WHERE subject = 'Mathematics';`



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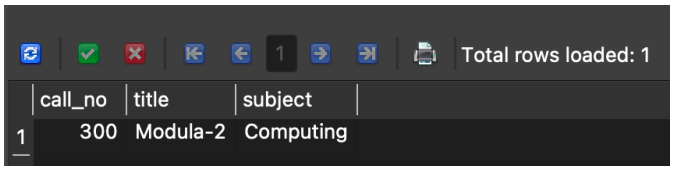
	title
1	Graphs
2	Set Theory

10. `SELECT * FROM Book WHERE call_no = '300';`

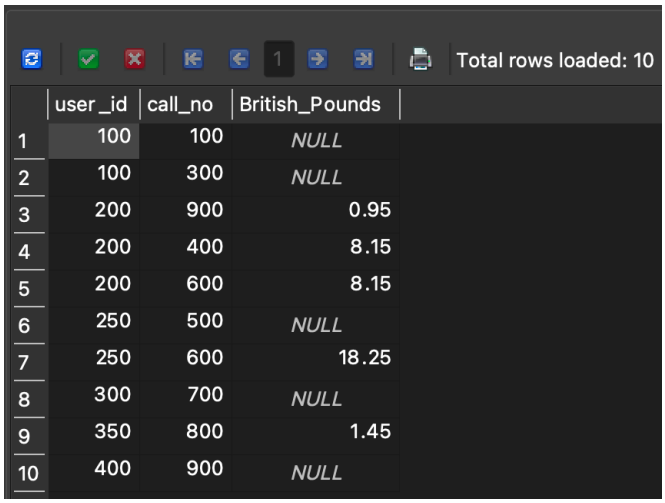


Total rows loaded: 1

	call_no	title	subject
1	300	Modula-2	Computing

Section 2

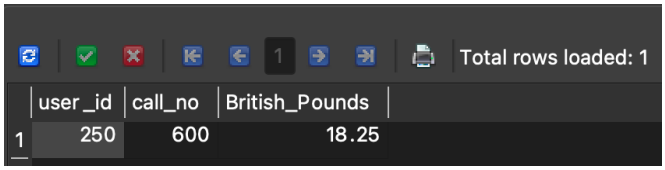
1. `SELECT user_id, call_no, fine/2 as British_Pounds FROM Loan;`



Total rows loaded: 10

	user_id	call_no	British_Pounds
1	100	100	*NULL*
2	100	300	*NULL*
3	200	900	0.95
4	200	400	8.15
5	200	600	8.15
6	250	500	*NULL*
7	250	600	18.25
8	300	700	*NULL*
9	350	800	1.45
10	400	900	*NULL*

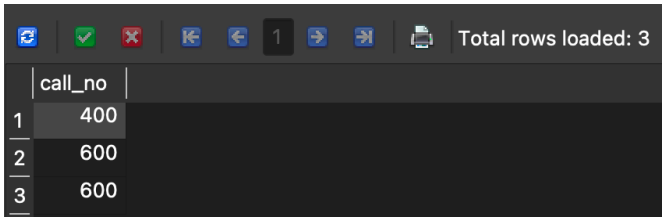
2. `SELECT user_id, call_no, fine/2 as British_Pounds FROM Loan WHERE British_Pounds > 10;`



Total rows loaded: 1

	user_id	call_no	British_Pounds
1	250	600	18.25

3. `SELECT call_no FROM Loan WHERE (user_id= 200 OR user_id= 250) and fine > 2;`



Total rows loaded: 3

	call_no
1	400
2	600
3	600

4. SELECT * FROM Book WHERE title LIKE 'Database%';

Total rows loaded: 2

	call_no	title	subject
1	200	Database Systems	Computing
2	400	Database Design	Computing

5. SELECT * FROM Book WHERE title LIKE '_O%';

	call_no	title	subject
1	300	Modula-2	Computing
2	500	Software Testing	Computing

6. SELECT * FROM Book WHERE call_no BETWEEN 200 AND 400;

	call_no	title	subject
1	200	Database Systems	Computing
2	300	Modula-2	Computing
3	400	Database Design	Computing

7. SELECT user_id, name, paid FROM Patron LEFT JOIN Loan ON Patron.user_id = Loan.user_id WHERE paid IS NULL;

Total rows loaded: 5

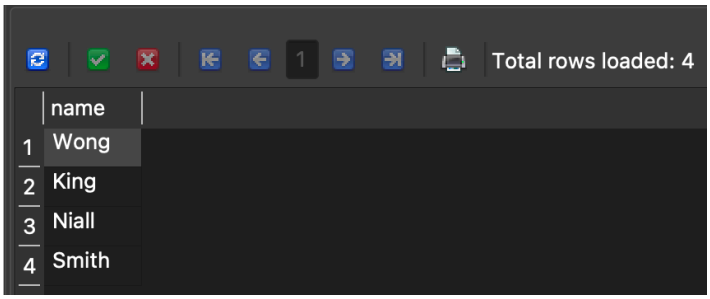
	user_id	name	paid
1	100	Wong	*NULL*
2	150	Colin	*NULL*
3	250	Das	*NULL*
4	300	Niall	*NULL*
5	400	Jones	*NULL*

8. SELECT user_id, name, paid FROM Patron LEFT JOIN Loan ON Patron.user_id = Loan.user_id WHERE paid IS NOT NULL;

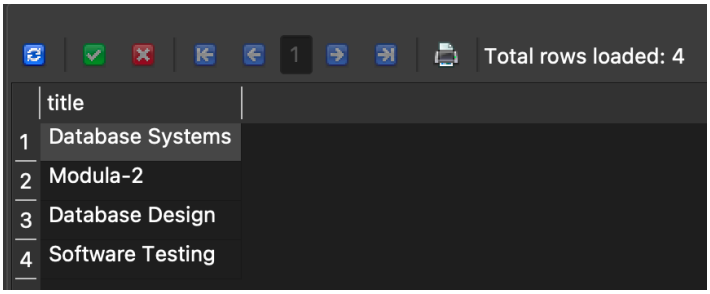
Total rows loaded: 6

	user_id	name	paid
1	100	Wong	yes
2	200	King	yes
3	200	King	yes
4	200	King	yes
5	250	Das	yes
6	350	Smith	yes

9. SELECT name FROM Patron WHERE user_id IN (100, 200, 300, 350);



10. SELECT title FROM Book WHERE subject IN ('Computing', 'History');



Section 3

1. SELECT MAX(fine) FROM Loan;
   The largest fine paid for an overdue book was **36.5**.

2. SELECT MIN(fine) FROM Loan;
   The least fine paid for an overdue book was **1.9**.

3. SELECT SUM(fine) FROM Loan;
   The library collected **73.9** in fines.

4. SELECT AVG(fine) FROM Loan;
   The average fine was **14.78**.

5. SELECT COUNT(title) FROM Book;
   There were **9** books in the library.

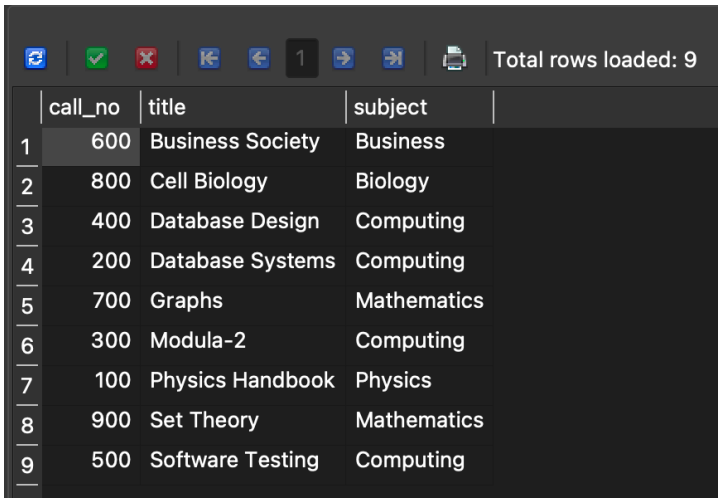
6. SELECT COUNT(paid) FROM Loan;
   6 times has a fine been collected.

7. SELECT COUNT(subject) FROM Book WHERE subject = 'Computing';
   4 books were computing books.

8. SELECT COUNT(DISTINCT subject) FROM Book;
   5 subject areas were in the library.

Section 4

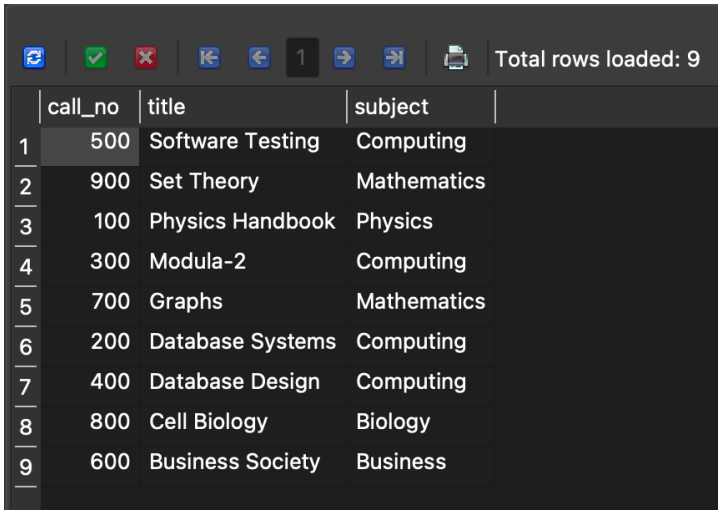
1. `SELECT * FROM Book ORDER BY title ASC;`



Total rows loaded: 9

	call_no	title	subject
1	600	Business Society	Business
2	800	Cell Biology	Biology
3	400	Database Design	Computing
4	200	Database Systems	Computing
5	700	Graphs	Mathematics
6	300	Modula-2	Computing
7	100	Physics Handbook	Physics
8	900	Set Theory	Mathematics
9	500	Software Testing	Computing

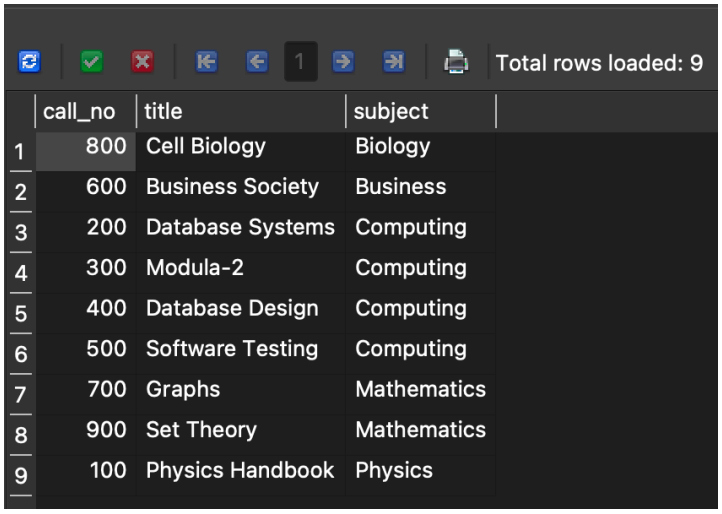
`SELECT * FROM Book ORDER BY title DESC;`



Total rows loaded: 9

	call_no	title	subject
1	500	Software Testing	Computing
2	900	Set Theory	Mathematics
3	100	Physics Handbook	Physics
4	300	Modula-2	Computing
5	700	Graphs	Mathematics
6	200	Database Systems	Computing
7	400	Database Design	Computing
8	800	Cell Biology	Biology
9	600	Business Society	Business

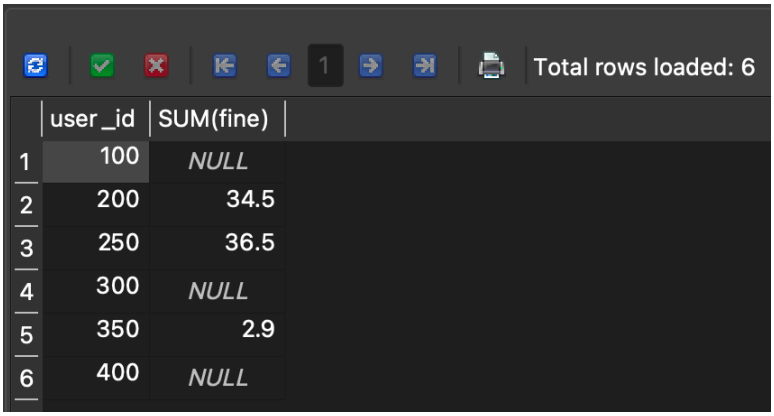
2. `SELECT * FROM Book ORDER BY subject, call_no;`



Total rows loaded: 9

	call_no	title	subject
1	800	Cell Biology	Biology
2	600	Business Society	Business
3	200	Database Systems	Computing
4	300	Modula-2	Computing
5	400	Database Design	Computing
6	500	Software Testing	Computing
7	700	Graphs	Mathematics
8	900	Set Theory	Mathematics
9	100	Physics Handbook	Physics

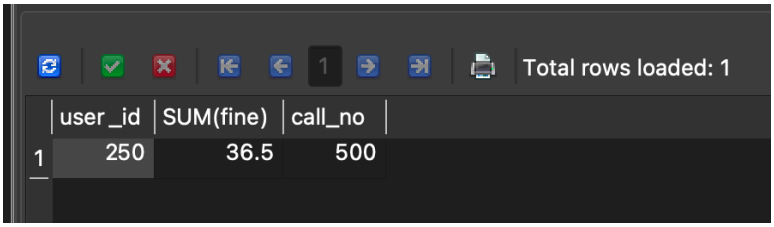
3. `SELECT user_id, SUM(fine) FROM Loan GROUP BY user_id;`



Total rows loaded: 6

	user_id	SUM(fine)
1	100	*NULL*
2	200	34.5
3	250	36.5
4	300	*NULL*
5	350	2.9
6	400	*NULL*

4. `SELECT user_id, SUM(fine), call_no FROM Loan WHERE call_no > 400 GROUP BY user_id HAVING SUM(fine) > 30;`

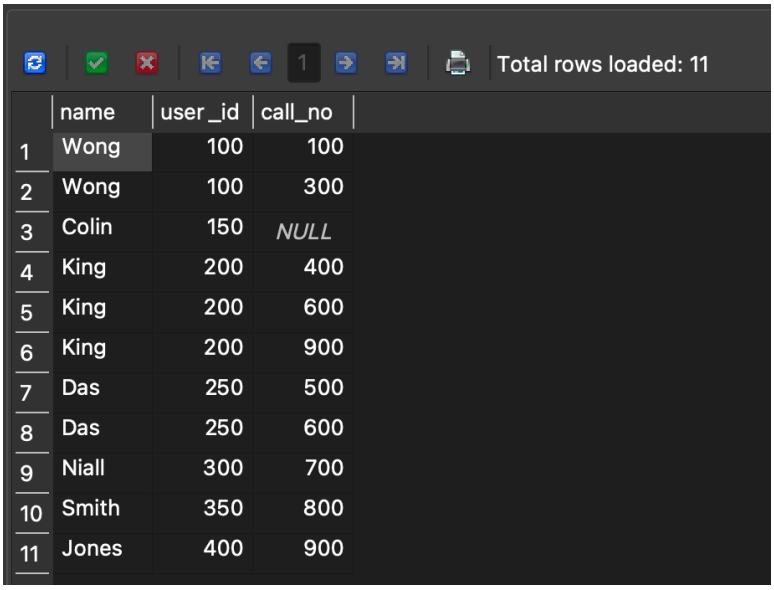


Total rows loaded: 1

	user_id	SUM(fine)	call_no
1	250	36.5	500

Section 5

1. `SELECT name, user_id, call_no FROM Patron LEFT JOIN Loan ON Patron.user_id = Loan.user_id LEFT JOIN Book On Book.call_no = Loan.call_no;`

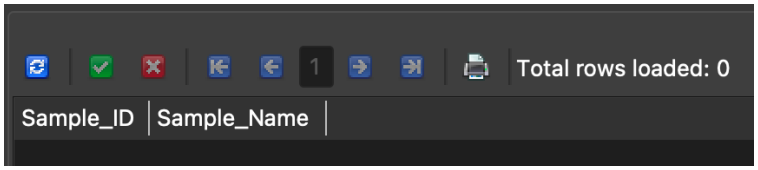


Total rows loaded: 11

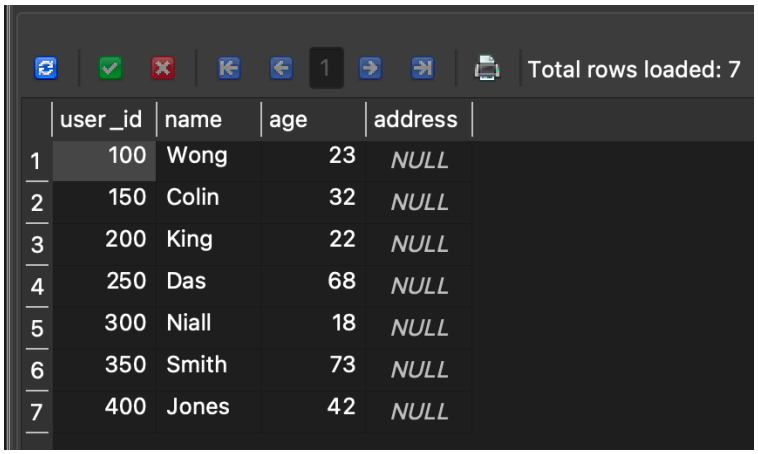
	name	user_id	call_no
1	Wong	100	100
2	Wong	100	300
3	Colin	150	*NULL*
4	King	200	400
5	King	200	600
6	King	200	900
7	Das	250	500
8	Das	250	600
9	Niall	300	700
10	Smith	350	800
11	Jones	400	900

Section 6

1. `CREATE TABLE Sample_Table(Sample_ID INT NOT NULL, Sample_Name varchar(60)); SELECT * FROM Sample_Table;`

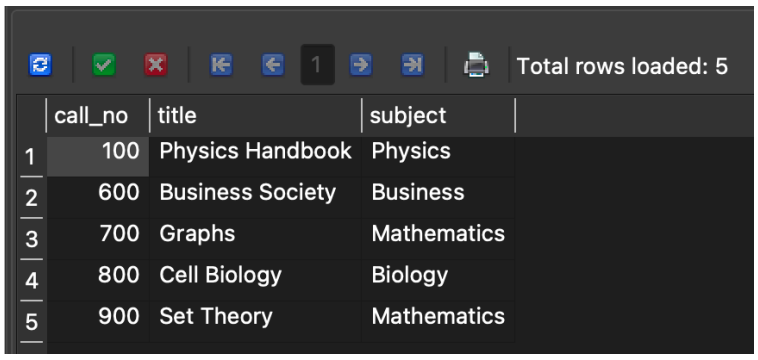


2. `DROP TABLE Sample_Table;`
   After running this code, the table was deleted.
3. `UPDATE Patron SET age = age + 1; SELECT * FROM Patron;`



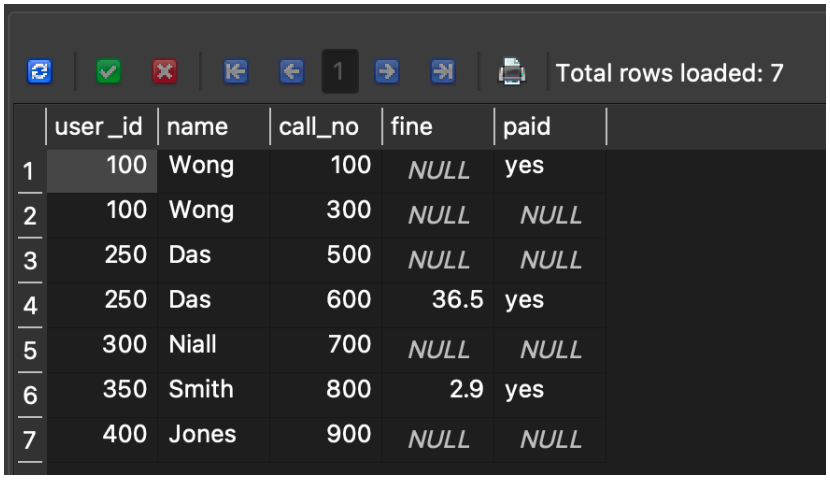
	user_id	name	age	address
1	100	Wong	23	NULL
2	150	Colin	32	NULL
3	200	King	22	NULL
4	250	Das	68	NULL
5	300	Niall	18	NULL
6	350	Smith	73	NULL
7	400	Jones	42	NULL

4. `DELETE FROM Book WHERE subject = 'Computing'; SELECT * FROM Book;`



	call_no	title	subject
1	100	Physics Handbook	Physics
2	600	Business Society	Business
3	700	Graphs	Mathematics
4	800	Cell Biology	Biology
5	900	Set Theory	Mathematics

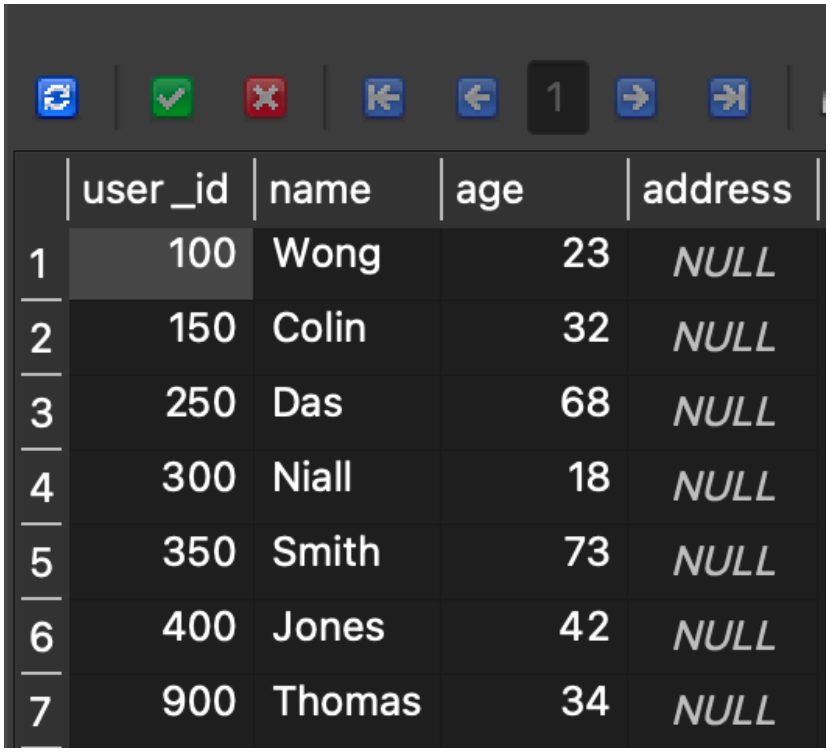
5. `DELETE FROM Loan WHERE user_id = (SELECT user_id FROM Patron WHERE name = 'King'); SELECT user_id, name, call_no, fine, paid FROM Loan LEFT JOIN Patron ON Loan.user_id = Patron.user_id;`



Total rows loaded: 7

	user_id	name	call_no	fine	paid
1	100	Wong	100	NULL	yes
2	100	Wong	300	NULL	NULL
3	250	Das	500	NULL	NULL
4	250	Das	600	36.5	yes
5	300	Niall	700	NULL	NULL
6	350	Smith	800	2.9	yes
7	400	Jones	900	NULL	NULL

6. `INSERT INTO Patron(name, user_id, age) VALUES('Thomas', 900, 34); SELECT * FROM Patron;`



	user_id	name	age	address
1	100	Wong	23	NULL
2	150	Colin	32	NULL
3	250	Das	68	NULL
4	300	Niall	18	NULL
5	350	Smith	73	NULL
6	400	Jones	42	NULL
7	900	Thomas	34	NULL