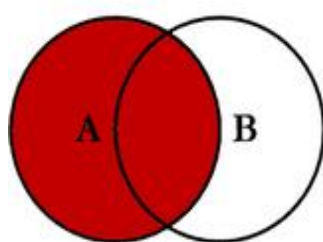# Name : Viraj Sheoran
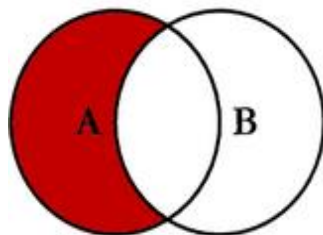# Prn = 23070122074

DBMS Lab Assignment - 6
SQL Joins

SQL JOINS are used to retrieve data from multiple tables. A SQL JOIN is performed whenever two or more tables are listed in a SQL statement.
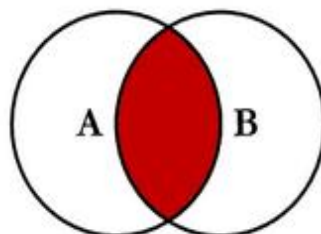
There are 4 different types of SQL joins:

- SQL INNER JOIN (sometimes called simple join)
- SQL LEFT OUTER JOIN (sometimes called LEFT JOIN)
- SQL RIGHT OUTER JOIN (sometimes called RIGHT JOIN)
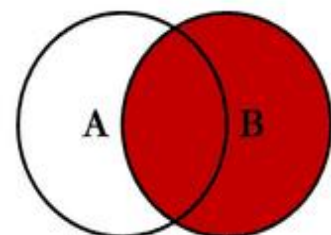- SQL FULL OUTER JOIN (sometimes called FULL JOIN)
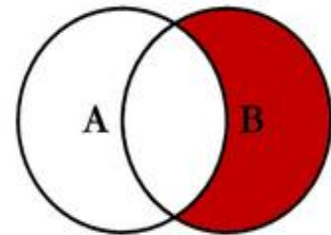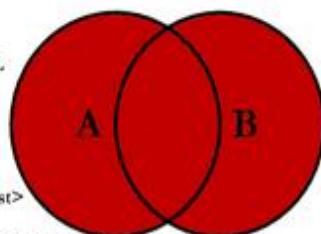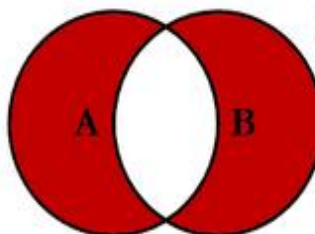
Assignment 6 Lab Questions

Using SQL joins, obtain the following information from SIU Library Database

1. Students in the Civil department.

```
3 •    SELECT Sname, email FROM STUDENT
4      JOIN DEPARTMENT ON STUDENT.deptid = DEPARTMENT.Deptid
5      WHERE deptname = 'CIVIL';
6
```

Sname	email
Eva	eva@example.com

2. Books in SIT library.

```
8 •    SELECT Bname, Price FROM BOOKS
9      JOIN Ilibrary ON BOOKS.Lid = Ilibrary.Lid
10     WHERE Ilibrary.lname = 'SIT';
11
```

Bname	Price
Database Systems	500

3. Books with less than 3 copies in SIT Library.

```sql
12  SELECT Bname FROM BOOKS
13  JOIN Noofcopies ON BOOKS.Bid = Noofcopies.bid
14  JOIN Ilibrary ON BOOKS.Lid = Ilibrary.Lid
15  WHERE Ilibrary.lname = 'SIT' AND Noofcopies.bnid < 3;
16
17
```

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

Bname
▶ Database Systems

4. Sellers in the same city as SIT.

```sql
17  SELECT SELLER.Sid, slname, SELLER.city FROM SELLER
18  JOIN Ilibrary ON SELLER.city = Ilibrary.city
19  WHERE Ilibrary.lname = 'SIT';
20
```

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

Sid	slname	city

5. Sellers selling books to SIT.

```sql
21  SELECT SELLER.Sid, slname FROM SELLER
22  JOIN PURCHASE ON SELLER.Sid = PURCHASE.sid
23  JOIN Ilibrary ON PURCHASE.lid = Ilibrary.Lid
24  WHERE Ilibrary.lname = 'SIT';
```

Result Grid | Filter Rows: | Export: | Wrap

Sid	slname
▶ 1	BookWorld

6. Books authored by Brian Kernighan, and published by Tata McGraw Hill.

```sql
26  SELECT Bname FROM BOOKS
27  JOIN Writes ON BOOKS.Bid = Writes.Bid
28  JOIN AUTHOR ON Writes.Aid = AUTHOR.Aid
29  JOIN PUBLISHER ON Writes.pid = PUBLISHER.Pid
30  WHERE AUTHOR.Aname = 'Brian Kernighan' AND PUBLISHER.Pname = 'Tata McGraw Hill';
```

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

Bname

7. Books authored by Ken Thompson.

```sql
32  SELECT Bname FROM BOOKS
33  JOIN Writes ON BOOKS.Bid = Writes.Bid
34  JOIN AUTHOR ON Writes.Aid = AUTHOR.Aid
35  WHERE AUTHOR.Aname = 'Ken Thompson';
```

Result Grid | Filter Rows: | Export:

Bname

8. Books issued by Meera.

```sql
37  SELECT Bname FROM BOOKS
38  JOIN ISSUE ON BOOKS.Bid = ISSUE.bid
39  JOIN STUDENT ON ISSUE.memid = STUDENT.memid
40  WHERE STUDENT.Sname = 'Meera';
```

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

Bname

9. Books issued by SSBS staff.

```sql
42   SELECT Bname FROM BOOKS
43   JOIN ISSUE ON BOOKS.Bid = ISSUE.bid
44   JOIN STAFF ON ISSUE.memid = STAFF.memid
45   JOIN DEPARTMENT ON STAFF.deptid = DEPARTMENT.Deptid
46   WHERE DEPARTMENT.deptname = 'SSBS';
47
```

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

Bname

10. Publisher that provides books to SSLA through Shiksha.

```sql
49   SELECT DISTINCT PUBLISHER.Pname FROM PUBLISHER
50   JOIN PURCHASE ON PUBLISHER.Pid = PURCHASE.pid
51   JOIN Ilibrary ON PURCHASE.lid = Ilibrary.Lid
52   WHERE Ilibrary.lname = 'SSLA' AND PURCHASE.sid =
53   (SELECT Sid FROM SELLER WHERE slname = 'Shiksha');
54
55
```

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

Pname

11. Institutes whose staff and students have issued book with bid 4.

```sql
56   SELECT DISTINCT i.lname
57   FROM Ilibrary i
58   JOIN Member m ON i.lid = m.lid
59   JOIN Issue iss ON m.memid = iss.memid
60   WHERE iss.bid = 4;
61
62
```

Result Grid | Filter Rows: | Export: | Wr

lname

12. Sellers selling to libraries in the same city.

```
62 •    SELECT DISTINCT SELLER.slname FROM SELLER
63      JOIN PURCHASE ON SELLER.Sid = PURCHASE.sid
64      JOIN Ilibrary L1 ON PURCHASE.lid = L1.Lid
65      WHERE L1.city IN (SELECT city FROM Ilibrary);
```

slname
BookWorld
ReadersHub
Pagesta
LibraryMart
BookBarn

13. Authors with books costing more than rs 500.

```
67 •    SELECT DISTINCT AUTHOR.Aname FROM AUTHOR
68      JOIN Writes ON AUTHOR.Aid = Writes.Aid
69      JOIN BOOKS ON Writes.Bid = BOOKS.Bid
70      WHERE BOOKS.Price > 500;
```

Aname
Jane Smith
Emma Wilson
shruti

14. Which members have issued books that belongs to E&TC department of SIT.

```
72 •    SELECT DISTINCT MEMBER.memid FROM MEMBER
73      JOIN ISSUE ON MEMBER.memid = ISSUE.memid
74      JOIN BOOKS ON ISSUE.bid = BOOKS.Bid
75      JOIN DEPARTMENT ON BOOKS.Lid = DEPARTMENT.lid
76      WHERE DEPARTMENT.deptname = 'E&TC' AND DEPARTMENT.Deptid = (SELECT Deptid FROM DEPARTMENT WHERE deptname = 'SIT');
77
78
```

memid

15. List the books of SIT library

```
79 ●    SELECT Bname FROM BOOKS
80      JOIN Ilibrary ON BOOKS.Lid = Ilibrary.Lid
81      WHERE Ilibrary.lname = 'SIT';
82
```

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

Bname
▶ Database Systems

16. Which books are written by " Ken Coel"

```
78 ●    SELECT Bname FROM BOOKS
79      JOIN Writes ON BOOKS.Bid = Writes.Bid
80      JOIN AUTHOR ON Writes.Aid = AUTHOR.Aid
81      WHERE AUTHOR.Aname = 'Ken Coel';
82
83
84
```

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

Bname

17. Find the staff members who's salaries are less than atleast one employee

```
90 ●    SELECT empname FROM Employee WHERE salary < ANY (SELECT salary FROM Employee);
```

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

empname
▶ Emma
Liam
Olivia
Noah

18. Find the books who's price is greater than atleast one book in the library.

```
91
92 ● SELECT Bname FROM BOOKS WHERE Price > ANY (SELECT Price FROM BOOKS);
93
94
```

	Bname
▶	Database Systems
	Operating Systems
	Machine Learning
	AI Fundamentals

19. Find the employees who's salary is greater than all the employees of Civil department.

```
94 ● SELECT empname FROM Employee WHERE salary > ALL
95   (SELECT salary FROM Employee JOIN DEPARTMENT ON Employee.lid = DEPARTMENT.lid WHERE DEPARTMENT.deptname = 'CIVIL');
96
97
```

empname

20. Find such purchases who's total cost is greater than all the purchases which are done by "SIT library"

```
97 ● SELECT * FROM PURCHASE WHERE totalcost > ALL
98   (SELECT totalcost FROM PURCHASE WHERE Lid = (SELECT Lid FROM Ilibrary WHERE lname = 'SIT'));
99
100
```

	prid	lid	sid	pid	bid	quantity	date	totalcost
▶	2	2	2	2	2	15	2024-01-02	7500
	3	3	3	3	3	20	2024-01-03	10000
	4	4	4	4	4	25	2024-01-04	12500
	5	5	5	5	5	30	2024-01-05	15000
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

21. Find name of such SIU library which is located in Nashik and has Ilibrary named as "SIOM library"(solve using exists)

```
100    SELECT lname FROM Ilibrary L1 WHERE city = 'Nashik'
101    AND EXISTS (SELECT * FROM Ilibrary L2 WHERE L2.lname = 'SIOM library' AND L1.city = L2.city);
102
103
```

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

lname

22. Find such staff members who's name starts with "S" and do not work for "CS" department. (solve using not exists)

```
103    SELECT stname FROM STAFF WHERE stname LIKE 'S%'
104    AND NOT EXISTS (SELECT * FROM DEPARTMENT WHERE deptname = 'CS' AND STAFF.deptid = DEPARTMENT.Deptid);
105
106
```

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

stname

23. Which books are issued by student Meera?

```
106    SELECT Bname FROM BOOKS
107    JOIN ISSUE ON BOOKS.Bid = ISSUE.bid
108    JOIN STUDENT ON ISSUE.memid = STUDENT.memid
109    WHERE STUDENT.Sname = 'Meera';
110
```

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

Bname

9

24. From which seller did SIT library purchases books of "Technical publications"?

```
111 •    SELECT SELLER.slname FROM SELLER
112      JOIN PURCHASE ON SELLER.Sid = PURCHASE.sid
113      JOIN PUBLISHER ON PURCHASE.pid = PUBLISHER.Pid
114      JOIN Ilibrary ON PURCHASE.lid = Ilibrary.Lid
115      WHERE Ilibrary.lname = 'SIT' AND PUBLISHER.Pname = 'Technical publications';
116
117
```

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

slname

25. Which books are issued by staff of SSAC Structure department?

```
118 •    SELECT Bname FROM BOOKS
119      JOIN ISSUE ON BOOKS.Bid = ISSUE.bid
120      JOIN STAFF ON ISSUE.memid = STAFF.memid
121      JOIN DEPARTMENT ON STAFF.deptid = DEPARTMENT.Deptid
122      WHERE DEPARTMENT.deptname = 'SSLA';
123
124
```

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

Bname

\

26. Which sellers reside in the same city in which SIT library resides?

```
125 •    SELECT DISTINCT s.Sid, s.slname, s.city
126      FROM SELLER s
127      JOIN Ilibrary l ON l.city = s.city
128      WHERE l.lname = 'SIT';
129      |
```

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

Sid	slname	city

27. Find out the publishers whose books are provided by the seller "pragati books store" to SSBS library.

```
131 ●   SELECT DISTINCT p.Pid, p.Pname
132     FROM PURCHASE pu
133     JOIN BOOKS b ON pu.bid = b.Bid
134     JOIN PUBLISHER p ON pu.pid = p.Pid
135     JOIN SELLER s ON pu.sid = s.Sid
136     JOIN Ilibrary l ON pu.lid = l.Lid
137     WHERE s.slname = 'Pragati Books Store' AND l.lname = 'SSBS Library';
```

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

Pid	Pname

28. Which books are published by "Shivam Kapoor" with the publishing house Prentice Hall publications?

```
140 ●   SELECT b.Bid, b.Bname
141     FROM BOOKS b
142     JOIN WRITES w ON b.Bid = w.Bid
143     JOIN AUTHOR a ON w.Aid = a.Aid
144     JOIN PUBLISHER p ON w.pid = p.Pid
145     WHERE a.Aname = 'Shivam Kapoor' AND p.Pname = 'Prentice Hall Publications';
146
```

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

Bid	Bname

29. What are the purchase details of the SSAC library for the month of March?

```
149 ●   SELECT *
150     FROM PURCHASE
151     WHERE lid = (SELECT Lid FROM Ilibrary WHERE lname = 'SSAC Library')
152     AND MONTH(date) = 3;
```

| Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap |

prid	lid	sid	pid	bid	quantity	date	totalcost
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

30. Which institute does the member belong who have issued book number 453?

```
154 ●    SELECT i.lname AS Institute
155      FROM ISSUE iss
156      JOIN MEMBER m ON iss.memid = m.memid
157      JOIN Ilibrary i ON m.lid = i.Lid
158      WHERE iss.bid = 453;
159
160
```

| Result Grid | | Filter Rows: | | Export: |

Institute

31. Increase the price of all the books by 10%.

```
160 ●    SET SQL_SAFE_UPDATES = 0;
161 ●    UPDATE BOOKS
162      SET Price = Price * 1.10;
163
164
165
```

Output

Action Output

#	Time	Action
✓	51 10:49:40	SET SQL_SAFE_UPDATES = 0
✓	52 10:49:47	SET SQL_SAFE_UPDATES = 0
✓	53 10:49:52	UPDATE BOOKS SET Price = Price * 1.10

32. Change the institute name to SSBS of "Biology department"

```
164 ●    UPDATE DEPARTMENT
165      SET Iname = 'SSBS'
166      WHERE deptname = 'Biology';
167
```

Output

Action Output ▾

#	Time	Action
✓	56 10:51:12	UPDATE DEPARTMENT SET Iname = 'SSBS' WHERE deptname = 'Biology'
✓	57 10:51:35	UPDATE DEPARTMENT SET Iname = 'SSBS' WHERE deptname = 'Biology'

33. Provide 25% Diwali bonus to SIT staff.

```
168 ●    UPDATE Employee
169      SET salary = salary * 1.25
170      WHERE lid = (SELECT Lid FROM Ilibrary WHERE lname = 'SIT Library');
171
```

Output

Action Output ▾

#	Time	Action
✓	57 10:51:35	UPDATE DEPARTMENT SET Iname = 'SSBS' WHERE deptname = 'Biology'
✓	58 10:52:33	UPDATE Employee SET salary = salary * 1.25 WHERE lid = (SELECT Lid FROM Ilibrary WHERE In...

34. Delete the purchase details which are happened in 2016.

```
172 ●    DELETE FROM PURCHASE
173      WHERE YEAR(date) = 2016;
174
```

Output

Action Output ▾

#	Time	Action
✓	58 10:52:33	UPDATE Employee SET salary = salary * 1.25 WHERE lid = (SELECT Lid FRO
✓	59 10:53:04	DELETE FROM PURCHASE WHERE YEAR(date) = 2016

35. Delete such issues where books are already returned in 2017.

```
175  ●    DELETE FROM ISSUE
176       WHERE YEAR(returndate) = 2017;
177
178
179
180
```

Output

Action Output ▼

#	Time	Action
✅	59	10:53:04	DELETE FROM PURCHASE WHERE YEAR(date) = 2016
✅	60	10:53:52	DELETE FROM ISSUE WHERE YEAR(returndate) = 2017