Mohammad Ali Jinnah University Karachi

Department of Computer Science

LAB MANUAL

CS2231: Database Management System

LAB 09

Instructor
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LAB 09

Schema

Doctors (docid, docname, docdept, docfee)
Patients (patid, patname, patage, pathistory)
Visits (docid, patid, no_of_visits, date_firstvisit)

PRE-STEPS

1- Create tables according to the schema provided above. Apply proper constraints.
2- Insert 10 rows in each of the doctors and patients tables and 20 rows in the visits table.

SQL Joins(Continued)

Self Join

A self join is a join of a table to itself. This table appears twice in the FROM clause and is followed by table aliases that qualify column names in the join condition.

// you may wish to compare the doctors on the basis of their fee

Syntax

```
SELECT      d1.docname, d2.docname, d1.docfee, d2.docfee
FROM        doctors d1, doctors d2
WHERE       d1.docfee < d2.docfee
ORDER BY    d1.docfee;
```

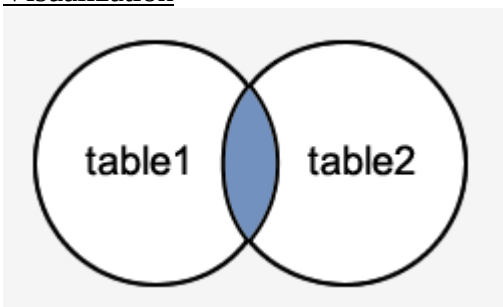
//Another query may request doctors with same fees.

```
SELECT      d1.docname, d2.docname, d1.docfee, d2.docfee
FROM        doctors d1, doctors d2
WHERE       d1.docfee = d2.docfee
AND         d1.docname < > d2.docname
ORDER BY    d1.docfee;
```

Inner Join

An inner join (sometimes called a "simple join") is a join of two or more tables that returns only those rows that satisfy the join condition. It returns only those records that match in both tables.

Visualization



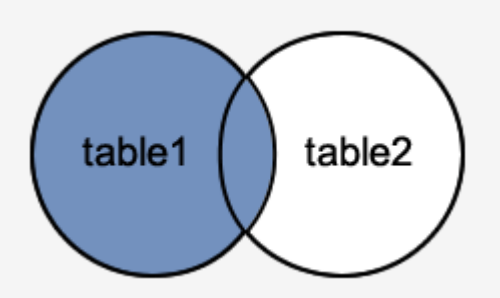
Syntax

```
SELECT      p.patid, p.patname, d.docid, d.docname
FROM        patients    p
INNER JOIN  doctors     d
ON          p.patname = d.docname;
```

Left Outer Join

Left outer join returns all rows (in the specified column) from Table1 along with the matching rows (in the specified column) from Table2.

Visualization



Syntax

```
SELECT      p.patid, p.patname, d.docid, d.docname
FROM        patients    p
LEFT OUTER JOIN  doctors     d
ON          p.patname = d.docname;
```

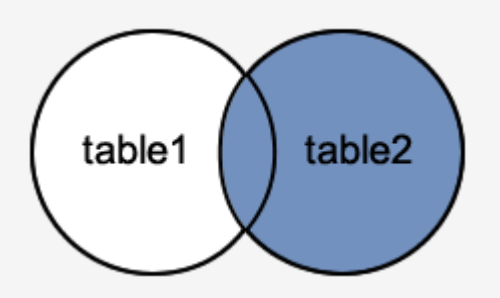
// you may wish to see members for table 1 only and leave the matching rows from table 2

Syntax

Ritgh Outer Join

Right outer join returns all rows (in the specified column) from Table2 along with the matching rows (in the specified column) from Table1.

Visualization



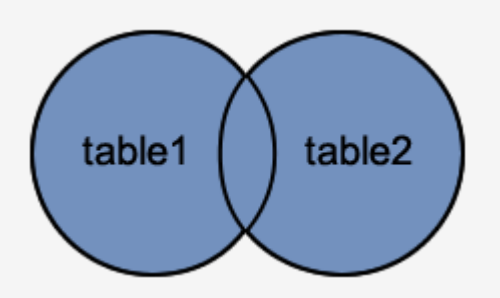
Syntax

```
SELECT          p.patid, p.patname, d.docid, d.docname
FROM            patients        p
RIGHT OUTER  JOIN       doctors         d
ON              p.patname = d.docname;
```

Full Outer Join

Full outer join returns all rows from the LEFT-hand table and RIGHT-hand table with nulls in place where the join condition is not met..

Visualization



Syntax

```
SELECT          p.patid, p.patname, d.docid, d.docname
FROM            patients        p
FULL OUTER  JOIN        doctors         d
ON              p.patname = d.docname;
```

Note: MySql **DOES NOT** support Full Outer Join.

Joining Three Tables ☺

It's simple.

Cartesian Join Syntax

```
SELECT  *
FROM  patients, doctors, visits;
```

Equijoin Syntax

```
SELECT *
FROM  patients, doctors, visits
WHERE  patients.patid = visits.patid
AND     doctors.docid = visits.docid;
```

Lab Activity

1- Show the names of the patients whose date of first visit to a doctor is same.
2- Show the patient names and Ids who are teenagers and have visited some doctor twice or more.
3- Show the name of the doctors who take more than Rs. 500 as their fee and have patients with more than 3 visits.
4- Show the patients, who are teenagers and have been diagnosed to have T.B and have never visited a doctor.
5- If the query for the requirements in part 4 do not return any record, EITHER re-write the query OR insert data in the tables, so that the query returns at least one record ☺[Again run the query in part 4]
6- Show complete information of the patients along with the information of their visits to doctors. The patient information must also be shown for the patient, who has never visited a doctor.
7- Show the doctors who have the same name as **their** patients. HINT: All three tables will be involved and visits table plays the key role ☺
8- If the above query does not return any result, EITHER re-write the query OR insert data in the tables, so that the query returns at least one record ☺[Again run the query in part 7].
9- Show the patients who have same disease and have visited the same doctor for treatment.