In this session we will learn about retrieving data from one or more tables.

Syntax:

SELECT * FROM <table-name>;

Illustration: Selects records from ticket table,

Select * from bus_tkt;

Lets now try to fetch data based on some conditions.

Select statement

Syntax:

SELECT <COLUMN NAME(S)> FROM <Table name> WHERE<CONDITION>;

Illustration: This selects all the passenger records whose age is greater than 18.

SELECT Name FROM ticket_passenger WHERE age >18;

Points To Note:
- There could be one or more conditions in the where clause.

- Wild card * is used to retrieve all the column values of a table.

DUAL Table

DUAL table is a

- Special one row table present by default in all My SQL DB installations.
- This is a system table.
- Can be used for selecting a pseudo column like SYSDATE or USER.

Illustration:

1. SELECT 2+2 FROM DUAL;

   Output: 4

2. SELECT now() FROM DUAL;

   Output: 08-Feb-14

3. SELECT CURRENT_USER FROM DUAL;

   Output: system

Adam is back with a problem

Adam when building GPS application encounters a scenario where he has to display data stored in multiple tables in a screen.

He was puzzled and was wondering how to solve it?

Guess how Adam would have cracked it?
He used *SQL joins* to retrieve records from multiple tables.

So what is a join?

Join is a way by which records from two or more tables/views are retrieved and displayed to the user.

Joins will be efficient when they are joined with each other using the primary key and foreign keys.

How to join two tables?

Join Condition: The condition specified in the **Where** clause compares the values of two columns from the tables to be joined.

Illustration : if there are two tables **Table 1** and **Table 2** with columns **C1** & **C2** respectively. The join condition will be as follows,

Table1.C1=Table2.C2

How the above join condition works?

- My SQL database combines pairs of rows, each row from each of the tables.

- Then validates the join condition in our case it is Table1.C1=Table2.C2).

- If the condition evaluates to TRUE for the pair, the row is selected.

How Join works for three tables?

If three tables **D1,D2,D3** with columns **C1,C2,C3** respectively. If the three tables needs to be joined, the join condition in will be as follows

$$D1.C1=D2.C2 \quad \text{and} \quad D2.C2=D3.C3$$

How database engine process the join and retrieves data?

- The engine first joins two of the tables (D1 & D2) using join conditions (C1=C2) and compares their column values.

   Assume this retrieves five records based on the condition **D1.C1=D2.C2**.

- The next join condition will be fired on the retrieved records and are further filtered based on the condition.

The condition **D2.C2=D3.C3** will be fired on the 5 records retrieved and validated for the condition.

- The records which meets the condition are selected.

- My SQL continues this process until all conditions are executed in the query.