**The concept of Joins**

**Joint Multiple Table (Equi Join):** Sometimes we require to treat more than one table as though manipulate data from all the tables as though the tables were not separate object but one single entity. To achieve this we have to join tables. Tables are joined on column that have same data type and data with in tables.

The tables that have to be joined are specified in the FROM clause and the joining attributes in the WHERE clause.

##### Algorithm for JOIN in SQL:

* 1. Cartesian product of tables (specified in the FROM clause)
	2. Selection of rows that match (predicate in the WHERE clause)
	3. Project column specified in the SELECT clause.

##### Cartesian product:

Consider two tables student and course

 Select B.\*, P.\*

FROM student B, course P;

##### INNER JOIN:

Cartesian product followed by selection

 Select B.\*, P.\*

FROM student B, Course P WHERE B.course # = P.course # ;

##### LEFT OUTER JOIN:

LEFT OUTER JOIN = Cartesian product + selection but include rows from the left table, which are unmatched put nulls in the values of attributes belonging to the second table

Select B.\*, P\*

FROM student B left join course P ON B.course # = P.course #;

##### RIGHT OUTER JOIN:

RIGHT OUTER JOIN = Cartesian product + selection but include rows from right table, which are unmatched put nulls in the values of attributes belonging to the second table

 Select B.\*, P.\*

From student B RIGHT JOIN course P ON B.course# = P .course #;

##### FULL OUTER JOIN

Select B.\*, P.\*

From student B FULL JOIN course P On B.course # = P .course #;

## ASSIGNMENT NO. 2

#####  Create the following tables:

##### Sales\_master

|  |  |  |  |
| --- | --- | --- | --- |
| **Column name** | **Datatype** | **Size** | **Attributes** |
| Salesman\_no | varchar2 | 6 | Primary key |
| Sal\_name | varchar2 | 20 | Not null |
| Address | varchar2 |  | Not null |
| City | varchar2 | 20 |  |
| State | varchar2 | 20 |  |
| Pincode | Number | 6 |  |
| Sal\_amt | Number | 8,2 | Not null |
| Tgt\_to\_get | Number | 6,2 | Not null |
| Ytd\_sales | Number | 6,2 | Not null |
| Remarks | Varchar2 | 30 |  |

* 1. **Sales\_order**

|  |  |  |  |
| --- | --- | --- | --- |
| **Column name** | **Datatype** | **Size** | **Attributes** |
| S\_order\_no | varchar2 | 6 | Primary |
| S\_order\_date | Date | 6 |  |
| Client\_no | Varchar2 | 25 | Primary key reference clientno of client\_master table |
| Dely\_add | Varchar2 | 6 |  |
| Salesman\_no | Varchar2 | 6 | Foreign key references salesman\_no of salesman\_master table |
| Dely\_type | Char | 1 | Delivery part(p)/full(f),default f |
| Billed\_yn | Char | 1 |  |
| Dely\_date | Date |  |  |
| Order\_status | Varchar2 | 10 | Values (‘in process’;’fulfilled’;back order’;’canceled) |

* 1. **Sales\_order\_details**

|  |  |  |  |
| --- | --- | --- | --- |
| **Column name** | **Datatype** | **Size** | **Attributes** |
| S\_order\_no | Varchar2 | 6 | Primary key/foreign key references s\_order\_no of sales\_order |
| Product\_no | Varchar2 | 6 | Primary key/foreign key references product\_no of product\_master |
| Qty\_order | Number | 8 |  |
| Qty\_disp | Number | 8 |  |
| Product\_rate | Number | 10,2 |  |

1. **Insert the following data into their respective tables:**

##### Data for sales\_man master table:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Salesman\_ no** | **Salesman name** | **Address** | **City** | **Pin code** | **State** | **Sal\_amt** | **Tgt\_to\_get** | **Ytd\_Sales** | **Remarks** |
| 500001 | Kiran | A/14 worli | Bombay | 400002 | Mah | 3000 | 100 | 50 | Goo |
| 500002 | Manish | 65,narim an | Bombay | 400001 | Mah | 3000 | 200 | 100 | Goo |
| 500003 | Ravi | P-7 Bandra | Bombay | 400032 | Mah | 3000 | 200 | 100 | Goo |
| 500004 | Ashish | A/5 Juhu | Bombay | 400044 | Mah | 3500 | 200 | 150 | Goo |

##### Data for salesorder table:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **S\_orderno** | **S\_orderdate** | **Client no** | **Dely type** | **Bill yn** | **Salesman no** | **Delay date** | **Orderstatus** |
| 019001 | 12-jan-96 | 0001 | F | N | 50001 | 20-jan- 96 | Ip |
| 019002 | 25-jan-96 | 0002 | P | N | 50002 | 27-jan- 96 | C |
| 016865 | 18-feb-96 | 0003 | F | Y | 500003 | 20-feb- 96 | F |
| 019003 | 03-apr-96 | 0001 | F | Y | 500001 | 07-apr- 96 | F |
| 046866 | 20-may-96 | 0004 | P | N | 500002 | 22- may-96 | C |
| 010008 | 24-may-96 | 0005 | F | N | 500004 | 26- may-96 | Ip |

1. **Data for sales\_order\_details table:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S\_order no | Product no | Qty ordered | Qty disp | Product\_rate |
| 019001 | P00001 | 4 | 4 | 525 |
| 019001 | P07965 | 2 | 1 | 8400 |
| 019001 | P07885 | 2 | 1 | 5250 |
| 019002 | P00001 | 10 | 0 | 525 |
| 046865 | P07868 | 3 | 3 | 3150 |
| 046865 | P07885 | 10 | 10 | 5250 |
| 019003 | P00001 | 4 | 4 | 1050 |
| 019003 | P03453 | 2 | 2 | 1050 |
| 046866 | P06734 | 1 | 1 | 12000 |
| 046866 | P07965 | 1 | 0 | 8400 |
| 010008 | P07975 | 1 | 0 | 1050 |
| 010008 | P00001 | 10 | 5 | 525 |

1. **Answer the following Queries:**
	1. Find out the product which has been sold to ‘Ali’
	2. Find out the product and their quantities that will have do delivered.
	3. Find the product\_no of cancelled products.
	4. Find out the names of clients who have delivery part order.
	5. List the product\_no and s\_order\_no having qty ordered less than 5.