

# DBMS Lab Assignment

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Slot: D1+TD1

1. Create table for the given Order table without using any normalization

**ORDER**  
Customer No: 001964      Order Number: 00012345  
Name: Mark Campbell      Order Date: 14-Feb-2002  
Address: 1 The House  
          Leytonstone  
          E11 9ZZ

Product Number	Product Description	Unit Price	Order Quantity	Line Total
T5060	Hook	5.00	5	25.00
PT42	Bolt	2.50	10	20.50
QZE48	Spanner	20.00	1	20.00

Order Total: 65.50

```
SQL> Create table order1
2  (
3      order_no number(10),
4      order_date date,
5      cust_no number(10),
6      cust_name varchar2(20),
7      cust_add varchar2(50),
8      prod_no varchar2(10),
9      prod_desc varchar2(10),
10     unit_price number(5,2),
11     ord_qty number(5),
12     line_total number(10,2),
13     order_total number(10,2)
14 );
```

Table created.

2. Insert the values to the Order table

```
SQL>
```

```
SQL> insert into order1 values( 00012345,'14-feb-2002', 001964, 'Mark  
Campbell','E119ZZ','T5060','Hook',5.00,5,25.00,65.00);
```

1 row created.

```
SQL> insert into order1 values( 00012345,to_date('14-02-2002','dd-mm-yyyy'),  
001964, 'Mark Campbell','E119ZZ','PT42','Bolt',2.50,5,20.50,65.00);
```

1 row created.

```
SQL> insert into order1 values( 00012345,to_date('14-02-2002','dd-mm-yyyy'),  
001964, 'Mark Campbell','E119ZZ','QZE48','Spanner',20.00,1,20.00,65.00);
```

1 row created.

### 3. Write a query to display order no, customer no, product no, Product Desc, Unit price order Quantity and line total

```
SQL> select order_no, cust_no, prod_no, prod_desc, unit_price, ord_qty,  
line_total from order1;
```

ORDER_NO	CUST_NO	PROD_NO	PROD_DESC	UNIT_PRICE	ORD_QTY	LINE_TOTAL
12345	1964	T5060	Hook	5	5	25
12345	1964	PT42	Bolt	2.5	5	20.5
12345	1964	QZE48	Spanner	20	1	20

### 4. Normalize the created Table using 1NF for removing repeating groups. Write a query to display order no, customer no, product no, Product Desc, Unit price order Quantity and line total:

```
SQL> Create table ord1NF  
2  (  
3    order_no number(10) PRIMARY KEY,  
4    order_date date,  
5    cust_no  number(10),  
6    cust_name varchar2(20),  
7    cust_add varchar2(50),  
8    order_total number(10,2)  
9  );
```

Table created.

```
SQL>
```

```
SQL> CREATE TABLE prod1
```

```
2  (
```

```

3      order_no number(10),
4      prod_no varchar2(10),
5      prod_desc varchar2(10),
6      unit_price number(5,2),
7      ord_qty number(5),
8      line_total number(10,2),
9      CONSTRAINT pk PRIMARY KEY (order_no, prod_no),
10     CONSTRAINT fk FOREIGN KEY (order_no) REFERENCES ord1NF(order_no)
11 );

```

Table created.

```

SQL> insert into ord1NF values( 00012345,'14-feb-2002', 001964, 'Mark
Campbell',
'E119ZZ', 65.00);

```

1 row created.

```

SQL> insert into prod1 values(00012345,'T5060','Hook',5.00,5,25.00);

```

1 row created.

```

SQL> insert into prod1 values(00012345,'PT42','Bolt',2.50,10,25.00);

```

1 row created.

```

SQL> insert into prod1 values(00012345,'QZE48','Spanner',20.00,1,20.00);

```

1 row created.

```

SQL> select prod1.order_no, ord1NF.cust_no, prod_no, prod_desc, unit_price,
ord_
qty, line_total from prod1,ord1NF where prod1.order_no = ord1NF.order_no;

```

ORDER_NO	CUST_NO	PROD_NO	PROD_DESC	UNIT_PRICE	ORD_QTY	LINE_TOTAL
12345	1964	T5060	Hook	5	5	25
12345	1964	PT42	Bolt	2.5	10	25
12345	1964	QZE48	Spanner	20	1	20

**5. Normalize the created Table using 2NF for removing partial Dependencies. Write a query to display order no, customer no, product no, Product Desc, Unit price order Quantity and line total**

```

SQL> create table orderLine
2  (
3      order_no number(10),
4      prod_no varchar2(10) UNIQUE,

```

```
5      ord_qty number(5),
6      line_total number(10,2),
7      CONSTRAINT pk1 PRIMARY KEY (order_no, prod_no),
8      CONSTRAINT fk1 FOREIGN KEY (order_no) REFERENCES ord1NF(order_no)
9 );
```

Table created.

SQL>

SQL> create table PROD2

```
2  (
3      prod_no varchar2(10),
4      prod_desc varchar2(10),
5      unit_price number(5,2),
6      CONSTRAINT pk2 PRIMARY KEY (prod_no),
7      CONSTRAINT fk2 FOREIGN KEY (prod_no) REFERENCES orderLine(prod_no)
8 );
```

Table created.

SQL> insert into orderLine values(00012345,'T5060',5,25.00);

1 row created.

SQL> insert into orderLine values(00012345,'PT42',10,20.50);

1 row created.

SQL> insert into orderLine values(00012345,'QZE48',1,20.00);

1 row created.

SQL>

SQL> insert into prod2 values('T5060','Hook',5.00);

1 row created.

SQL> insert into prod2 values('PT42','Bolt',2.50);

1 row created.

SQL> insert into prod2 values('QZE48','Spanner',20.00);

1 row created.

SQL>

SQL> select ORD1NF.order\_no, ord1NF.cust\_no, orderLine.prod\_no, prod\_desc,  
unit\_price, ord\_qty, line\_total from ord1NF, orderLine, PROD2 where  
orderLine.order\_no = ord1NF.order\_no AND orderLine.prod\_no = PROD2.prod\_no;

ORDER_NO	CUST_NO	PROD_NO	PROD_DESC	UNIT_PRICE	ORD_QTY	LINE_TOTAL
12345	1964	T5060	Hook	5	5	25
12345	1964	PT42	Bolt	2.5	10	20.5
12345	1964	QZE48	Spanner	20	1	20

**6. Normalize the created Table using 3NF for removing transitivity. Write a query to display order no, customer no, product no, Product Desc, Unit price order Quantity and line total**

```
SQL> create table cust3NF
2  (
3      cust_no  number(10) PRIMARY KEY,
4      cust_name varchar2(20),
5      cust_add varchar2(50)
6  );
```

Table created.

```
SQL> create table ord3NF
2  (
3      order_no number(10) PRIMARY KEY,
4      cust_no  number(10),
5      order_date date,
6      order_total number(10,2),
7      CONSTRAINT fork FOREIGN KEY (cust_no) REFERENCES cust3NF(cust_no)
8  );
```

Table created.

```
SQL> insert into cust3NF values( 001964, 'Mark Campbell', 'E119ZZ');
```

1 row created.

```
SQL> insert into ord3NF values( 00012345, 001964,'14-feb-2002', 65.00);
```

1 row created.

```
SQL> commit;
```

Commit complete.

```
SQL> select ORD3NF.order_no, cust3NF.cust_no, orderLine.prod_no, prod_desc,
unit_price, ord_qty, line_total from cust3NF, ord3NF, orderLine, PROD2 where
orderLine.order_no = ord3NF.order_no AND orderLine.prod_no = PROD2.prod_no
AND cust3NF.cust_no = ord3NF.cust_no;
```

ORDER_NO	CUST_NO	PROD_NO	PROD_DESC	UNIT_PRICE	ORD_QTY	LINE_TOTAL
12345	1964	T5060	Hook	5	5	25
12345	1964	PT42	Bolt	2.5	10	20.5
12345	1964	QZE48	Spanner	20	1	20