

Heaven's Light is Our Guide
Rajshahi University of Engineering and Technology



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Lab Report 2: Creating a database and doing operations on it using SQL

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Contents

1	Tools Used	3
2	Process	3
2.1	SQL Codes:	3
2.1.1	Create a orderdetails table orderdetails(order_no, customer_no, address, product_category, quantity, unit_price):	3
2.1.2	Add a cloumn named order_date that expresses the ordered date:	4
2.1.3	Rename the column customer_name to cust_name.	4
2.1.4	Drop the product_category column and recreate the column. .	4
2.1.5	Keep the orde_no as auto increment column.	4
2.1.6	Now insert at least 15 rows into the table.	5
2.1.7	Show the orderdetails in ascending order based on the quantity.	5
2.1.8	Show the orderdetails in descending order based on the uni_price	6
2.1.9	Show the order_no, cust_name, address and unit_price in ascending order based on the 10% increment in unit_price. . . .	6
2.2	Output	7

Basic MySQL Operations

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1 Tools Used

- MySQL
- VS Code - as an IDE to use SQL
- MacTeX - $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ compiler
- VS Code with LaTeX workshop extension as a text editor

2 Process

2.1 SQL Codes:

2.1.1 Create a orderdetails table orderdetails(order_no, customer_no, address, product_category, quantity, unit_price):

Code:

```
1 CREATE DATABASE if NOT EXISTS ProductOrder;
2 use ProductOrder;
3 create TABLE
4     OrderDetails (
5         Order_No int AUTO_INCREMENT primary key,
6         CustomerName varchar(30),
7         Address_ varchar(300),
8         ProductCatagory varchar(20),
9         Quantity int,
10        UnitPrice decimal(8, 2)
11    )
```

Here a new database named ProductOrder. Then with the *Use* command, the database was selected and then using Create Table, a new table was created as asked.

2.1.2 Add a cloumn named order_date that expresses the ordered date:

Code:

```
1      ALTER TABLE ProductOrder.OrderDetails ADD OrderDate DATETIME
      ↪ after UnitPrice
```

Here, using the ALTER TABLE clause, a new column, which wasn't added in during the CREATE TABLE clause, is added at the end of the table.

2.1.3 Rename the column customer_name to cust_name.

Code:

```
1      ALTER TABLE ProductOrder.OrderDetails change CustomerName
      ↪ Cust_name varchar(30);
```

Same as 2.1.2, ALTER TABLE clause was used to modify a column's name.

2.1.4 Drop the product_category column and recreate the column.

Code:

```
1      ALTER TABLE ProductOrder.OrderDetails
2      drop column ProductCatagory;
3
4      ALTER TABLE ProductOrder.OrderDetails ADD ProductCatagory
      ↪ varchar(20) after Address_;
```

Here too, ALTER TABLE clause was used to modify the table. We first dropped the column and then inserted it into the same place.

2.1.5 Keep the orde_no as auto increment column.

To do this, the line no. 7 in 2.1.1 was used. While creating the table, the column was declared as PRIMARY_KEY and another attribute: AUTO_INCREMENT was added right there.

2.1.6 Now insert at least 15 rows into the table.

Code:

```
1      INSERT INTO
2      ProductOrder.OrderDetails (
3          Cust_name,
4          Address_,
5          ProductCatagory,
6          Quantity,
7          UnitPrice,
8          OrderDate
9      )
10     VALUES
11     (
12         'Rahul',
13         'Talaimari',
14         'Home Appliances',
15         4,
16         '3000.00',
17         now ()
18     ),
19     ...
20     ...
```

Using the INSERT INTO clause, 15 different entity was entered into the table. (To save space, only two instances of the code is shown here.)

2.1.7 Show the orderdetails in ascending order based on the quantity.

Code:

```
1      SELECT
2      *
3      FROM
4      ProductOrder.OrderDetails
5      ORDER BY
6      Quantity ASC;
```

Using the select clause, this task was done. The * selects all the data in the table and ORDER BY clause defines how to show the table.

2.1.8 Show the orderdetails in descending order based on the uni_price

Code:

```
1      SELECT
2      *
3      FROM
4      ProductOrder.OrderDetails
5      ORDER BY
6      UnitPrice DESC;
```

Same as the last task, only difference was here the ORDER BY was done in descending order.

2.1.9 Show the order_no, cust_name, address and unit_price in ascending order based on the 10% increment in unit_price.

Code:

```
1      SELECT
2      Order_No,
3      Cust_name,
4      Address_,
5      UnitPrice+UnitPrice*.1 as New_Price
6      FROM
7      ProductOrder.OrderDetails
8      ORDER BY
9      UnitPrice DESC;
```

By formatting in the SELECT clause, the UnitPrice column was shown differently as wanted. Then using the ORDER BY clause, the sorting was done.

2.2 Output








Order_No	Cust_name	Address_	ProductCatagory	Quantity	UnitPrice	OrderDate
 Filter...	 Filter...	 Filter...	 Filter...	 Filter...	 Filter...	 Filter...
1	Rahul	Talaimari	Home Appliances	4	2940.30	2023-09-12
2	Adiba	Talaimari	Fabrics	5	3920.40	2023-10-11
3	Mahin	Vodra	Electronics	100	39.20	2023-10-20
4	Kamrul	Monnafer Mor	Device	1	147015.00	2023-10-08
5	Maysha	Shadur Mor	Equipment	2	6566.67	2022-10-20
6	Adiba2	Talaimari	Fabrics	3	4312.44	2022-10-10
7	Mahin2	Vodra	Electronics	10	394.98	2022-10-19
8	Kamrul2	Monnafer Mor	Device	2	14701.50	2022-10-29
9	Maysha2	Shadur Mor	Equipment	4	6615.68	2022-10-01
10	Adiba3	Talaimari	Fabrics	55	39.20	2022-10-02
11	Mahin3	Vodra	Electronics	11	34.31	2022-10-04
12	Kamrul3	Monnafer Mor	Device	12	1509.35	2023-10-08
13	Maysha3	Shadur Mor	Equipment	20	65.67	2023-10-08
14	Adiba4	Talaimari	Fabrics	51	44.11	2022-07-04
15	Mahin4	Vodra	Electronics	10	11.76	2022-07-11

Figure 1: Table of Product Order Details








Order_No	Cust_name	Address_	ProductCatagory	Quantity	UnitPrice	OrderDate
 Filter...	 Filter...	 Filter...	 Filter...	 Filter...	 Filter...	 Filter...
4	Kamrul	Monnafer Mor	Device	1	147015.00	2023-10-08
5	Maysha	Shadur Mor	Equipment	2	6566.67	2022-10-20
8	Kamrul2	Monnafer Mor	Device	2	14701.50	2022-10-29
6	Adiba2	Talaimari	Fabrics	3	4312.44	2022-10-10
1	Rahul	Talaimari	Home Appliances	4	2940.30	2023-09-12
9	Maysha2	Shadur Mor	Equipment	4	6615.68	2022-10-01
2	Adiba	Talaimari	Fabrics	5	3920.40	2023-10-11
7	Mahin2	Vodra	Electronics	10	394.98	2022-10-19
15	Mahin4	Vodra	Electronics	10	11.76	2022-07-11
11	Mahin3	Vodra	Electronics	11	34.31	2022-10-04
12	Kamrul3	Monnafer Mor	Device	12	1509.35	2023-10-08
13	Maysha3	Shadur Mor	Equipment	20	65.67	2023-10-08
14	Adiba4	Talaimari	Fabrics	51	44.11	2022-07-04
10	Adiba3	Talaimari	Fabrics	55	39.20	2022-10-02
3	Mahin	Vodra	Electronics	100	39.20	2023-10-20

Figure 2: Table sorted in ascending order of Quantity

Order_No	Cust_name	Address_	ProductCategory	Quantity	UnitPrice	OrderDate
abc Filter...	abc Filter...	abc Filter...	abc Filter...	abc Filter...	abc Filter...	abc Filter...
4	Kamrul	Monnafer Mor	Device	1	147015.00	2023-10-08
8	Kamrul2	Monnafer Mor	Device	2	14701.50	2022-10-29
9	Maysha2	Shadur Mor	Equipment	4	6615.68	2022-10-01
5	Maysha	Shadur Mor	Equipment	2	6566.67	2022-10-20
6	Adiba2	Talaimari	Fabrics	3	4312.44	2022-10-10
2	Adiba	Talaimari	Fabrics	5	3920.40	2023-10-11
1	Rahul	Talaimari	Home Appliances	4	2940.30	2023-09-12
12	Kamrul3	Monnafer Mor	Device	12	1509.35	2023-10-08
7	Mahin2	Vodra	Electronics	10	394.98	2022-10-19
13	Maysha3	Shadur Mor	Equipment	20	65.67	2023-10-08
14	Adiba4	Talaimari	Fabrics	51	44.11	2022-07-04
3	Mahin	Vodra	Electronics	100	39.20	2023-10-20
10	Adiba3	Talaimari	Fabrics	55	39.20	2022-10-02
11	Mahin3	Vodra	Electronics	11	34.31	2022-10-04
15	Mahin4	Vodra	Electronics	10	11.76	2022-07-11

Figure 3: Table sorted in descending order of UnitPrice

Order_No	Cust_name	Address_	New_Price
abc Filter...	abc Filter...	abc Filter...	abc Filter...
4	Kamrul	Monnafer Mor	161716.500
8	Kamrul2	Monnafer Mor	16171.650
9	Maysha2	Shadur Mor	7277.248
5	Maysha	Shadur Mor	7223.337
6	Adiba2	Talaimari	4743.684
2	Adiba	Talaimari	4312.440
1	Rahul	Talaimari	3234.330
12	Kamrul3	Monnafer Mor	1660.285
7	Mahin2	Vodra	434.478
13	Maysha3	Shadur Mor	72.237
14	Adiba4	Talaimari	48.521
3	Mahin	Vodra	43.120
10	Adiba3	Talaimari	43.120
11	Mahin3	Vodra	37.741
15	Mahin4	Vodra	12.936

Figure 4: Table query with edit in UnitPrice