

Basic Database Operations-II



- Understanding different data types that are used in SQL.
- Understanding WHERE clause in SQL
- Understand how to use logical and comparison operators in the WHERE clause.
- Understand the WILDCARDS in the WHERE clause.
- Understand the DISTINCT clause.
- Understand the concepts of ORDER BY.
- Understand the concepts of LIMIT and OFFSET.
- Understand commenting for documentation in SQL.
- Understanding the column alias.

```
mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| bike_shop |
| demo      |
| information_schema |
| mysql     |
| performance_schema |
| shop      |
| sys       |
+-----+
7 rows in set (0.00 sec)

mysql> SELECT DATABASE();
+-----+
| DATABASE() |
+-----+
| NULL      |
+-----+
1 row in set (0.00 sec)

mysql> USE Bike_shop;
Database changed
mysql> SELECT DATABASE();
+-----+
| DATABASE() |
+-----+
| bike_shop  |
+-----+
1 row in set (0.00 sec)
```

```
mysql> SHOW TABLES;
+-----+
| Tables_in_bike_shop |
+-----+
| customers           |
+-----+
1 row in set (0.02 sec)

mysql> USE shop;
Database changed
mysql> SELECT DATABASE();
+-----+
| DATABASE() |
+-----+
| shop      |
+-----+
1 row in set (0.00 sec)

mysql> SHOW TABLES;
Empty set (0.01 sec)
```

Helping us to know what database we are currently using

```
mysql> DESCRIBE Customers;
+-----+-----+-----+-----+-----+
| Field | Type  | Null | Key  | Default | Extra |
+-----+-----+-----+-----+-----+
| CustomerKey   | int    | YES  |      | NULL    |
| Prefix        | text   | YES  |      | NULL    |
| FirstName     | text   | YES  |      | NULL    |
| LastName       | text   | YES  |      | NULL    |
| BirthDate     | text   | YES  |      | NULL    |
| MyUnknownColumn | text  | YES  |      | NULL    |
| MaritalStatus  | text   | YES  |      | NULL    |
| Gender         | text   | YES  |      | NULL    |
| EmailAddress   | text   | YES  |      | NULL    |
| AnnualIncome    | text   | YES  |      | NULL    |
| TotalChildren   | int    | YES  |      | NULL    |
| EducationLevel | text   | YES  |      | NULL    |
| Occupation      | text   | YES  |      | NULL    |
| HomeOwner       | text   | YES  |      | NULL    |
| Phone_number    | bigint | YES  |      | NULL    |
+-----+-----+-----+-----+-----+
15 rows in set (0.01 sec)
```

```
SELECT *[all columns] FROM Customer <Table Name>
```

```
Select [few columns] FROM Customers;
```

We are reading almost 2000 records, so it is not feasible everytime.
So use LIMIT Command to read only few lines.

```
14 • select FirstName , MaritalStatus , Gender , AnnualIncome  
15   FROM Customers;
```

FirstName	MaritalStatus	Gender	AnnualIncome
JON	M	M	\$90,000
EUGENE	S	M	\$60,000
RUBEN	M	M	\$60,000
CHRISTY	S	F	
ELIZABETH	S	F	\$80,000
JULIO	S	M	\$70,000
MARCO	M	M	\$60,000
ROBIN	S	F	\$60,000
SHANNON	S	M	\$70,000
JACQUELYN	S	F	\$70,000
CURTIS	M	M	\$60,000
LAUREN	M	F	\$100,000

```
mysql> SELECT DATABASE();
```

```
+-----+  
| DATABASE() |  
+-----+
```

```
| bike_shop |  
+-----+
```

```
1 row in set (0.00 sec)
```

```
mysql> SHOW TABLES;
```

```
+-----+  
| Tables_in_bike_shop |  
+-----+  
| customers          |  
| products           |  
+-----+
```

```
2 rows in set (0.00 sec)
```

```
mysql> DESC Products;
```

Field	Type	Null	Key	Default	Extra
ProductKey	int	YES		NULL	
ProductSubcategoryKey	int	YES		NULL	
ProductSKU	text	YES		NULL	
ProductName	text	YES		NULL	
ModelName	text	YES		NULL	
ProductDescription	text	YES		NULL	
ProductColor	text	YES		NULL	
ProductSize	text	YES		NULL	
ProductStyle	text	YES		NULL	
ProductCost	double	YES		NULL	
ProductPrice	double	YES		NULL	

```
11 rows in set (0.00 sec)
```

```

mysql> SELECT ProductName , ProductSize , ProductStyle , ProductPrice FROM Products LIMIT 5;
+-----+-----+-----+-----+
| ProductName | ProductSize | ProductStyle | ProductPrice |
+-----+-----+-----+-----+
| Sport-100 Helmet, Red | 0 | 0 | 34.99 |
| Sport-100 Helmet, Black | 0 | 0 | 33.6442 |
| Mountain Bike Socks, M | M | U | 9.5 |
| Mountain Bike Socks, L | L | U | 9.5 |
| Sport-100 Helmet, Blue | 0 | 0 | 33.6442 |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> SELECT ProductName , ProductSize , ProductStyle , ProductPrice FROM Products LIMIT 10;
+-----+-----+-----+-----+
| ProductName | ProductSize | ProductStyle | ProductPrice |
+-----+-----+-----+-----+
| Sport-100 Helmet, Red | 0 | 0 | 34.99 |
| Sport-100 Helmet, Black | 0 | 0 | 33.6442 |
| Mountain Bike Socks, M | M | U | 9.5 |
| Mountain Bike Socks, L | L | U | 9.5 |
| Sport-100 Helmet, Blue | 0 | 0 | 33.6442 |
| AWC Logo Cap | 0 | U | 8.6442 |
| Long-Sleeve Logo Jersey, S | S | U | 48.0673 |
| Long-Sleeve Logo Jersey, M | M | U | 48.0673 |
| Long-Sleeve Logo Jersey, L | L | U | 48.0673 |
| Long-Sleeve Logo Jersey, XL | XL | U | 48.0673 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

 MySQL 8.0 Command Line Client
App

```

mysql> SELECT FirstName , Gender , AnnualIncome , Occupation FROM Customers LIMIT 10;
+-----+-----+-----+-----+
| FirstName | Gender | AnnualIncome | Occupation |
+-----+-----+-----+-----+
| JON | M | $90,000 | Professional |
| EUGENE | M | $60,000 | Professional |
| RUBEN | M | $60,000 | Professional |
| CHRISTY | F | | Professional |
| ELIZABETH | F | $80,000 | Professional |
| JULIO | M | $70,000 | Professional |
| MARCO | M | $60,000 | Professional |
| ROBIN | F | $60,000 | Professional |
| SHANNON | M | $70,000 | Professional |
| JACQUELYN | F | $70,000 | Professional |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

Professional |
| Management |
| Skilled Manual |
| Clerical |
| Manual

```

mysql> SELECT FirstName , Gender , AnnualIncome , Occupation FROM Customers WHERE Gender = "M" LIMIT 10;
+-----+-----+-----+-----+
| FirstName | Gender | AnnualIncome | Occupation |
+-----+-----+-----+-----+
| JON | M | $90,000 | Professional |
| EUGENE | M | $60,000 | Professional |
| RUBEN | M | $60,000 | Professional |
| JULIO | M | $70,000 | Professional |
| MARCO | M | $60,000 | Professional |
| SHANNON | M | $70,000 | Professional |
| CURTIS | M | $60,000 | Professional |
| IAN | M | $100,000 | Management |
| WYATT | M | $30,000 | Skilled Manual |
| CLARENCE | M | $30,000 | Clerical |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

```

mysql> SELECT FirstName , Gender , AnnualIncome , Occupation FROM Customers WHERE Gender = "M" ORDER BY AnnualIncome LIMIT 10;
+-----+-----+-----+-----+
| FirstName | Gender | AnnualIncome | Occupation |
+-----+-----+-----+-----+
| ADRIAN   | M     |             | Management
| JARROD   | M     |             | Manual
| ANTONIO  | M     |             | Clerical
| MARSHALL | M     |             | Professional
| EDDIE    | M     |             | Manual
| PHILLIP  | M     | $10,000    | Clerical
| KARL    | M     | $10,000    | Manual
| GARY    | M     | $10,000    | Manual
| ROY     | M     | $10,000    | Manual
| KYLE    | M     | $10,000    | Manual
+-----+-----+-----+-----+
10 rows in set (0.01 sec)

mysql> SELECT FirstName , Gender , AnnualIncome , Occupation FROM Customers WHERE Gender = "M" ORDER BY AnnualIncome DESC LIMIT 10;
+-----+-----+-----+-----+
| FirstName | Gender | AnnualIncome | Occupation |
+-----+-----+-----+-----+
| JON      | M     | $90,000    | Professional
| RAFAEL   | M     | $90,000    | Professional
| RANDY    | M     | $90,000    | Professional
| JIMMY    | M     | $90,000    | Professional
| JIMMY    | M     | $90,000    | Professional
| THOMAS   | M     | $90,000    | Management
| BRAD     | M     | $90,000    | Professional
| MARSHALL | M     | $90,000    | Professional
| EDUARDO  | M     | $90,000    | Professional
| ANDY    | M     | $90,000    | Management
+-----+-----+-----+-----+
10 rows in set (0.01 sec)

```

Query to find the customers with MaritalStatus as 'M'.

```

mysql> SELECT
    -> FirstName , MaritalStatus, Gender , Occupation
    -> FROM Customers
    -> WHERE MaritalStatus = "M"
    -> LIMIT 10;
+-----+-----+-----+-----+
| FirstName | MaritalStatus | Gender | Occupation |
+-----+-----+-----+-----+
| JON      | M             | M     | Professional
| RUBEN   | M             | M     | Professional
| MARCO   | M             | M     | Professional
| CURTIS  | M             | M     | Professional
| LAUREN  | M             | F     | Management
| IAN     | M             | M     | Management
| WYATT   | M             | M     | Skilled Manual
| ETHAN   | M             | M     | Skilled Manual
| SETH    | M             | M     | Skilled Manual
| RUSSELL | M             | M     | Skilled Manual
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

Query to find the married female customers and their Annual Income.

AND - Both the conditions
needs to be true

Prefix = "Mrs"

MaritalStatus & Gender

```

mysql> SELECT
    -> FirstName , LastName, Gender , MaritalStatus , Occupation, AnnualIncome
    -> FROM Customers
    -> WHERE MaritalStatus = "M"
    -> AND Gender = "F"
    -> LIMIT 10;
+-----+-----+-----+-----+-----+-----+
| FirstName | LastName | Gender | MaritalStatus | Occupation | AnnualIncome |
+-----+-----+-----+-----+-----+-----+
| LAUREN    | WALKER   | F      | M      | Management | $100,000   |
| JILL      | JIMENEZ  | F      | M      | Clerical   | $30,000    |
| BETHANY   | YUAN     | F      | M      | Clerical   | $10,000    |
| THERESA   | RAMOS    | F      | M      | Skilled Manual | $20,000   |
| DENISE    | STONE    | F      | M      | Skilled Manual | $20,000   |
| EBONY     | GONZALEZ | F      | M      | Skilled Manual | $20,000   |
| JENNIFER  | RUSSELL  | F      | M      | Skilled Manual | $60,000   |
| DIANA     | HERNANDEZ | F      | M      | Clerical   | $10,000    |
| AMANDA    | CARTER   | F      | M      | Skilled Manual | $60,000   |
| MEGAN     | SANCHEZ  | F      | M      | Skilled Manual | $70,000   |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

```

mysql> SELECT
    -> FirstName , LastName, Gender , MaritalStatus , Occupation
    -> FROM Customers
    -> WHERE Prefix = "Mrs."
    -> LIMIT 10;
+-----+-----+-----+-----+-----+
| FirstName | LastName | Gender | MaritalStatus | Occupation |
+-----+-----+-----+-----+-----+
| ELIZABETH | JOHNSON | F      | S      | Professional |
| ROBIN     | VERHOFF  | F      | S      | Professional |
| LAUREN    | WALKER   | F      | M      | Management   |
| SYDNEY    | BENNETT  | F      | S      | Management   |
| SHANNON   | WANG     | F      | S      | Skilled Manual |
| JILL      | JIMENEZ  | F      | M      | Clerical   |
| BETHANY   | YUAN     | F      | M      | Clerical   |
| THERESA   | RAMOS    | F      | M      | Skilled Manual |
| DENISE    | STONE    | F      | M      | Skilled Manual |
| EBONY     | GONZALEZ | F      | M      | Skilled Manual |
+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

```

mysql> SELECT DISTINCT Occupation FROM Customers;
+-----+
| Occupation |
+-----+
| Professional |
| Management |
| Skilled Manual |
| Clerical |
| Manual |
+-----+
5 rows in set (0.01 sec)

mysql> SELECT DISTINCT MaritalStatus FROM Customers;
+-----+
| MaritalStatus |
+-----+
| M |
| S |
+-----+
2 rows in set (0.00 sec)

```

Operators

= , > , < , >= , <=

!= , <> [Not Equal]

```

mysql> SELECT
    -> ProductName , ProductSize, ProductCost, ProductPrice
    -> FROM Products
    -> WHERE productPrice > 1000
    -> LIMIT 10;
+-----+-----+-----+-----+
| ProductName | ProductSize | ProductCost | ProductPrice |
+-----+-----+-----+-----+
| HL Road Frame - Red, 62 | 62 | 747.9682 | 1263.4598 |
| HL Road Frame - Red, 44 | 44 | 747.9682 | 1263.4598 |
| HL Road Frame - Red, 48 | 48 | 747.9682 | 1263.4598 |
| HL Road Frame - Red, 52 | 52 | 747.9682 | 1263.4598 |
| HL Road Frame - Red, 56 | 56 | 747.9682 | 1263.4598 |
| HL Mountain Frame - Silver, 42 | 42 | 623.8403 | 1204.3248 |
| HL Mountain Frame - Silver, 44 | 44 | 706.811 | 1364.5 |
| HL Mountain Frame - Silver, 48 | 48 | 706.811 | 1364.5 |
| HL Mountain Frame - Silver, 46 | 46 | 623.8403 | 1204.3248 |
| HL Mountain Frame - Black, 42 | 42 | 617.0281 | 1191.1739 |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

Query to find the customers who have more than 2 children.

```

mysql> SELECT
    -> FirstName , LastName, Gender ,TotalChildren, MaritalStatus , Occupation
    -> FROM Customers
    -> WHERE TotalChildren > 2
    -> LIMIT 10;
+-----+-----+-----+-----+-----+-----+
| FirstName | LastName | Gender | TotalChildren | MaritalStatus | Occupation |
+-----+-----+-----+-----+-----+-----+
| EUGENE | HUANG | M | 3 | S | Professional |
| RUBEN | TORRES | M | 3 | M | Professional |
| ELIZABETH | JOHNSON | F | 5 | S | Professional |
| MARCO | MEHTA | M | 3 | M | Professional |
| ROBIN | VERHOFF | F | 4 | S | Professional |
| CURTIS | LU | M | 4 | M | Professional |
| SYDNEY | BENNETT | F | 3 | S | Management |
| SHANNON | WANG | F | 4 | S | Skilled Manual |
| THERESA | RAMOS | F | 4 | M | Skilled Manual |
| DENISE | STONE | F | 4 | M | Skilled Manual |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

Query to find the customers with the total number of children not equal to 5.

```

mysql> SELECT
    -> FirstName , LastName, Gender ,TotalChildren, MaritalStatus , Occupation
    -> FROM Customers
    -> WHERE TotalChildren != 5
    -> LIMIT 10;
+-----+-----+-----+-----+-----+-----+
| FirstName | LastName | Gender | TotalChildren | MaritalStatus | Occupation |
+-----+-----+-----+-----+-----+-----+
| JON | YANG | M | 2 | M | Professional |
| EUGENE | HUANG | M | 3 | S | Professional |
| RUBEN | TORRES | M | 3 | M | Professional |
| CHRISTY | ZHU | F | 0 | S | Professional |
| JULIO | RUIZ | M | 0 | S | Professional |
| MARCO | MEHTA | M | 3 | M | Professional |
| ROBIN | VERHOFF | F | 4 | S | Professional |
| SHANNON | CARLSON | M | 0 | S | Professional |
| JACQUELYN | SUAREZ | F | 0 | S | Professional |
| CURTIS | LU | M | 4 | M | Professional |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

```

mysql> SELECT
-> FirstName , LastName, Gender ,TotalChildren, MaritalStatus , Occupation
-> FROM Customers
-> WHERE TotalChildren <> 5
-> LIMIT 10;
+-----+-----+-----+-----+-----+-----+
| FirstName | LastName | Gender | TotalChildren | MaritalStatus | Occupation |
+-----+-----+-----+-----+-----+-----+
| JON       | YANG     | M      | 2           | M            | Professional |
| EUGENE    | HUANG    | M      | 3           | S            | Professional |
| RUBEN     | TORRES   | M      | 3           | M            | Professional |
| CHRISTY   | ZHU       | F      | 0           | S            | Professional |
| JULIO     | RUIZ      | M      | 0           | S            | Professional |
| MARCO     | MEHTA    | M      | 3           | M            | Professional |
| ROBIN     | VERHOFF   | F      | 4           | S            | Professional |
| SHANNON   | CARLSON  | M      | 0           | S            | Professional |
| JACQUELYN | SUAREZ   | F      | 0           | S            | Professional |
| CURTIS    | LU        | M      | 4           | M            | Professional |
+-----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

```

AND Logic

OR Logic

NOT Logic

BETWEEN - AND [Range]

LIKE - WildCard [% , _]

IN Logic - Replacing Multiple OR

WildCard [CrossWord] [% , _]

Give me all the words -

B_T - BAT, BUT, BIT, BOT, BET

%ing - Painting, Giving, Killing, Smiling,
Betting, Running, Blaming,
Bathing, Swimming, walking.

Bad% - Badminton, Bad, etc.

%ion - Passion, Mention, Nation,
Tension, Solution, Fusion, etc.

%ta% - Potato, Magenta, Intangible,
temptation.

_ means fill it with only one character

% means, it can be filled with 0 or more character.

Zip Code = 1100__ [00 to 99] [Where clause to apply filter]

Phone Number = +(____) 998232____

String Matching - Forgetting the complete name, but still
you can fetch the information from the dataset.

"% potter %"

"String Pattern"