**Tutorial for SQL Language**

1. **SELECT**

SELECT [\*] FORM [table name]

SELECT DISTINCT [...](one col) FROM [...]

SELECT [\*] FORM [table name] WHERE [...] AND/OR [...]

SELECT [\*] FORM [table name] ORDER BY [...(support multi cols)] ASC/DESC

1. **INSERT**

INSERT INTO [table name] ([col\_names]) VALUES (['values'])

1. **UPDATE**

UPDATE [table name] set [col\_name] = [new\_values], [col\_name] = [new\_values]

WHERE [condition](eg: which column);

1. **DELETE**

DELETE FROM [table name] WHERE [condition]

1. **ALERT**

ALTER TABLE [table name]

CHANGE COLUMN [col name] [col name] [DOUBLE] [NOT NULL],

CHANGE COLUMN [col name] [col name] [DOUBLE] [NOT NULL];

1. **WHERE LIKE**

SELECT [\*] FROM [table name]

WHERE [url] LIKE ['https%'];

# Other examples: '%oo%', '\_oogle', 'G\_o\_le', '^[GFs]'(start with G, F or s)

1. **WHERE IN**

SELECT [\*] FROM [Websites]

WHERE [name] IN [('Google','Facebook')]

1. **WHERE Between**

SELECT [\*] FROM [Websites]

WHERE [alexa] BETWEEN [1 AND 20];

# other examples:

# BETWEEN 'A' AND 'H', BETWEEN '2016-05-10' AND '2016-05-14'

1. **SELECT AS**

SELECT [w.name], [w.url], [a.count], [a.date]

FROM [Websites] AS [w], [access\_log] AS [a]

WHERE [a.site\_id = w.id] and [w.name = 'Facebook'];

SELECT [name], [CONCAT(url, ', ', alexa, ', ', country)] AS [site\_info]

FROM [Websites];

1. **INNER JOIN**

SELECT [Websites.name], [access\_log.count], [access\_log.date]

FROM [Websites]

INNER JOIN [access\_log]

ON [Websites.id = access\_log.site\_id];

# INNER JOIN return only if at least one matched line in the table

# if lines in the "Websites" table but not in "access\_log"

# It will not return those lines

1. **LEFT JOIN**

SELECT [Websites.name, access\_log.count, access\_log.date]

FROM [Websites]

LEFT JOIN [access\_log]

ON [Websites.id = access\_log.site\_id];

# LEFT JOIN result show all lines on the left table 'websites',

# even there are some lines not in access\_log

1. **RIGHT JOIN**

# RIGHT JOIN result show all lines on the right table 'access\_log',

# even there are some lines not in websites

1. **FULL JOIN**

# return all lines in right and left table

1. **UNION and UNION ALL**

SELECT [country], [name] FROM [Websites]

WHERE [country] = 'CN'

UNION (UNION ALL)

SELECT [country], [app\_name] FROM [apps]

WHERE [country = 'CN']

ORDER BY [country]

# UNION only show unique results

# UNION ALL show all results

1. **SELECT INTO**

SELECT \*

INTO [new table]

FROM [old table]

# MySQL don’t support

# Alternative method

CREATE TABLE [NEW TABLE]

AS

SELECT \* FROM [OLD TABLS]

1. **INSERT INTO SELECT**

INSERT INTO [Websites] [(name, country)]  
SELECT [app name], [country] FROM [apps];

1. **CREATE DATABASE**

CREATE DATABASE [my db]

1. **CREATE TABLE**

CREATE TABLE [`test`.`test\_table3`]

(

[`id`] [INT] [NOT NULL],

[`sport`] [VARCHAR(45)] [NULL],

PRIMARY KEY ([`id`])

);

# Not null is a constraint name

# other examples:

# UNIQUE, NULL, NOT NULL, PRIMARY KEY, CHECK, DEFAULT

1. UNIQUE
2. PRIMARY KEY
3. FOREIGN KEY
4. CHECK
5. DEFAULT

DELETE

CREATE DATABASE

ALTER DATABASE

CREATE TABLE

ALTER TABLE

DROP TABLE

CREATE INDEX

DROP INDEX