BACKGROUND

SQL, 'Structured Query Language', is a programming language designed to manage data stored in relational databases. SQL operates through simple, declarative statements. This keeps data accurate and secure, and helps maintain the integrity of databases, regardless of size.

Here's an appendix of commonly used commands.

COMMANDS

ALTER TABLE

```
ALTER TABLE table_name ADD column datatype;
```

`ALTER TABLE` lets you add columns to a table in a database.

AND

```
SELECT column_name(s)
FROM table_name
WHERE column_1 = value_1
AND column_2 = value_2;
```

`AND` is an operator that combines two conditions. Both conditions must be true for the row to be included in the result set.

AS

```
SELECT column_name AS 'Alias'
FROM table_name;
```

`AS` is a keyword in SQL that allows you to rename a column or table using an *alias*.

AVG

```
SELECT AVG(column_name)
FROM table_name;
```

`AVG()` is an aggregate function that returns the average value for a numeric column.

BETWEEN

```
SELECT column_name(s)
FROM table_name
WHERE column_name BETWEEN value_1 AND value_2;
```

The `BETWEEN` operator is used to filter the result set within a certain range. The values can be numbers, text or dates.

COUNT

```
SELECT COUNT(column_name)
FROM table_name;
```

`COUNT()` is a function that takes the name of a column as an argument and counts the number of rows where the column is not `NULL`.

CREATE TABLE

```
CREATE TABLE table_name (column_1 datatype, column_2 datatype, column_3 datatype);
```

`CREATE TABLE` creates a new table in the database. It allows you to specify the name of the table and the name of each column in the table.

DELETE

```
DELETE FROM table_name WHERE some_column = some_value;
```

`DELETE` statements are used to remove rows from a table.

GROUP BY

```
SELECT COUNT(*)
FROM table_name
GROUP BY column_name;
```

`GROUP BY` is a clause in SQL that is only used with aggregate functions. It is used in collaboration with the `SELECT` statement to arrange identical data into groups.

INNER JOIN

```
SELECT column_name(s) FROM table_1
JOIN table_2
ON table_1.column_name = table_2.column_name;
```

An inner join will combine rows from different tables if the *join condition* is true.

INSERT

```
INSERT INTO table_name (column_1, column_2, column_3) VALUES (value_1, 'value_2', value_3);
```

`INSERT` statements are used to add a new row to a table.

LIKE

```
SELECT column_name(s)
FROM table_name
WHERE column_name LIKE pattern;
```

`LIKE` is a special operator used with the `WHERE` clause to search for a specific pattern in a column.

LIMIT

```
SELECT column_name(s)
FROM table_name
LIMIT number;
```

`LIMIT` is a clause that lets you specify the maximum number of rows the result set will have.

MAX

```
SELECT MAX(column_name)
FROM table_name;
```

`MAX()` is a function that takes the name of a column as an argument and returns the largest value in that column.

MIN

```
SELECT MIN(column_name)
FROM table_name;
```

`MIN()` is a function that takes the name of a column as an argument and returns the smallest value in that column.

OR

```
SELECT column_name

FROM table_name

WHERE column_name = value_1

OR column_name = value_2;
```

`OR` is an operator that filters the result set to only include rows where either condition is true.

ORDER BY

```
SELECT column_name

FROM table_name

ORDER BY column_name ASC|DESC;
```

`ORDER BY` is a clause that indicates you want to sort the result set by a particular column either alphabetically or numerically.

OUTER JOIN

```
SELECT column_name(s) FROM table_1
LEFT JOIN table_2
ON table_1.column_name = table_2.column_name;
```

An outer join will combine rows from different tables even if the the join condition is not met. Every row in the *left* table is returned in the

result set, and if the join condition is not met, then `NULL` values are used to fill in the columns from the *right* table.

http://www.powerxing.com/sql-join/

ROUND

```
SELECT ROUND(column_name, integer)
FROM table_name;
```

`ROUND()` is a function that takes a column name and an integer as an argument. It rounds the values in the column to the number of decimal places specified by the integer.

integer 表示希望显示的小数位数

SELECT

```
SELECT column_name FROM table_name;
```

`SELECT` statements are used to fetch data from a database. Every query will begin with SELECT.

SELECT DISTINCT

```
SELECT DISTINCT column_name FROM table_name;
```

`SELECT DISTINCT` specifies that the statement is going to be a query that returns unique values in the specified column(s).

http://www.w3school.com.cn/sql/sql_distinct.asp

SUM

```
SELECT SUM(column_name)

FROM table_name;
```

`SUM()` is a function that takes the name of a column as an argument and returns the sum of all the values in that column.

UPDATE

```
UPDATE table_name
SET some_column = some_value
WHERE some_column = some_value;
```

`UPDATE` statments allow you to edit rows in a table.

WHERE

```
SELECT column_name(s)

FROM table_name

WHERE column_name operator value;
```

`WHERE` is a clause that indicates you want to filter the result set to include only rows where the following *condition* is true.