

The SELECT Command

Introduction to the SELECT command

The foundation to all SQL queries is the SELECT command. Made up of two core keywords, the SELECT command provides a means for retrieving the data from the database. In its simplest form, the SELECT command is written using the following elements:

- ❖ **SELECT** - The SELECT keyword is used to identify the command or action you are attempting to perform on the database.
- ❖ *** or field names** - The asterisk or names of the fields tell the statement which columns (fields) you want to extract data from. In this case, the asterisk means “all fields.”
- ❖ **FROM** - The FROM keyword identifies which table to extract the data from. The FROM keyword is required with all SELECT statements.

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Basic syntax of the SELECT command

Using the elements in the previous slide, we could construct a statement as follows:

```
SELECT * FROM employees
```

This statement (otherwise known as a query) uses two keywords - the SELECT keyword and the FROM keyword - to extract all records from the employees table. It would produce the following result (assuming we had 5 rows of data in there):

employeeid	name	username	password	email	roleid
1	Wally	wwebmaster	password	wally@vectacorp.com	1
2	Wilbur	wfounder	password	wilbur@vectacorp.com	2
3	Tina	ttechie	abc123	tina@vectacorp.com	1
4	Agnes	aaccountant	12345	agnes@vectacorp.com	2
5	Damon	ddeveloper	ispeakbinary	damon@vectacorp.com	1

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Selecting individual fields

If you didn't want to select all the fields in the database table, you could modify the field names to include only the fields that you wanted to retrieve:

```
SELECT name, username, password FROM employees
```

This statement retrieves only the name, username, and password fields. The query produces the following result:

name	username	password
Wally	wwebmaster	password
Wilbur	wfounder	password
Tina	ttechie	abc123
Agnes	aaccountant	12345
Damon	ddeveloper	ispeakbinary

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Changing the order of fields selected

You could also change the order of the fields queried. For example, we could switch the field names by placing name after password like this:

```
SELECT username, password, name FROM employees
```

This query would give the following result:

username	password	Name
wwebmaster	password	Wally
wfounder	password	Wilbur
ttechie	abc123	Tina
aaccountant	12345	Agnes
ddeveloper	lspeakbinary	Damon

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Selecting distinct records

The information in the employees table contains duplicate values. As you can see, we have two employees in our table that have the same generic password. In a real scenario, you could have thousands of employees with the same password, perhaps inventory with the same title, same cost, etc. If someone wanted to query only unique instances of a value in our database, we would have to modify the statement to produce distinct results. The DISTINCT keyword does just that. Consider the following statement and the results:

```
SELECT DISTINCT password FROM employees
```

password
password
abc123
12345
ispeakbinary

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Limiting how many records are queried

The SELECT TOP clause is used to specify the number of records to return. This can be useful on large tables with thousands of records as large number of records can impact performance.

SQL Server

```
SELECT TOP 2 * FROM employees
```

MySQL and SQLite

```
SELECT * FROM employees LIMIT 2
```

employeeid	name	username	password	email	roleid
1	Wally	wwebmaster	password	wally@vectacorp.com	1
2	Wilbur	wfounder	password	wilbur@vectacorp.com	2

Note: Not all database systems support the SELECT TOP clause. MySQL and SQLite support the LIMIT clause to select a limited number of records, while Oracle uses ROWNUM.