

# Data Manipulation Language(DML)

Data Manipulation Language deals with data manipulation and includes most common SQL statements such SELECT, INSERT, UPDATE, DELETE, etc., and it is used to store, modify, retrieve, delete and update data in a database.

## Connecting with the database

```
In [ ]: %load_ext sql
# replace with your own credentials
%sql ibm_db_sa://my-username:my-password@dashdb-txn-sbox-yp-dal09-03.services.dal.ibmcloud.net:50000/BLUDB
```

## 1. Insert Command

Insert command is used to insert values to tables. In other words inserting values in tuples.

```
In [6]: %%sql

insert into STUDENTS (country, first_name, last_name, test_score)
values
('United States', 'Marshall', 'Bernadot', 54),
('United States', 'Celinda', 'Malkin', 51),
('Ukraine', 'Guillermo', 'Furze', 53),
('Ukraine', 'Aharon', 'Tunnow', 48),
('Russia', 'Bail', 'Goodwin', 46),
('Poland', 'Cole', 'Winteringham', 49),
('Sweden', 'Emlyn', 'Erricker', 55),
('Russia', 'Cathee', 'Sivewright', 49),
('Poland', 'Barney', 'Ingerson', 57),
('Sweden', 'Sharla', 'Papaccio', 55)

* ibm_db_sa://lzv55210:***@dashdb-txn-sbox-yp-dal09-12.services.dal.ibmcloud.net:50000/BLUDB
10 rows affected.

Out[6]: []
```

## 2. Select Command

Select command is used to select a table. It can be achieved by just writing the name of the table.

```
In [7]: %sql select * from STUDENTS

* ibm_db_sa://lzv55210:***@dashdb-txn-sbox-yp-dal09-12.services.dal.ibmcloud.net:50000/BLUDB
Done.

Out[7]:
```

	country	first_name	last_name	test_score
	United States	Marshall	Bernadot	54
	United States	Celinda	Malkin	51
	Ukraine	Guillermo	Furze	53
	Ukraine	Aharon	Tunnow	48
	Russia	Bail	Goodwin	46
	Poland	Cole	Winteringham	49
	Sweden	Emlyn	Erricker	55
	Russia	Cathee	Sivewright	49
	Poland	Barney	Ingerson	57
	Sweden	Sharla	Papaccio	55

```
In [8]: country = "Ukraine"
%sql select * from STUDENTS where country = :country

* ibm_db_sa://lzv55210:***@dashdb-txn-sbox-yp-dal09-12.services.dal.ibmcloud.net:50000/BLUDB
Done.

Out[8]:
```

	country	first_name	last_name	test_score
	Ukraine	Guillermo	Furze	53
	Ukraine	Aharon	Tunnow	48

## 3. Update Command

Update command is used to make changes in any tuple. It is achieved by using field value of any other attribute of that particular tuple.

```
In [9]: %%sql

update STUDENTS
set test_score = 52
where first_name='Aharon';

select * from STUDENTS

* ibm_db_sa://lzv55210:***@dashdb-txn-sbox-yp-dal09-12.services.dal.ibmcloud.net:50000/BLUDB
1 rows affected.
Done.

Out[9]:
```

	country	first_name	last_name	test_score
	United States	Marshall	Bernadot	54
	United States	Celinda	Malkin	51
	Ukraine	Guillermo	Furze	53
	Ukraine	Aharon	Tunnow	52
	Russia	Bail	Goodwin	46
	Poland	Cole	Winteringham	49
	Sweden	Emlyn	Erricker	55
	Russia	Cathee	Sivewright	49
	Poland	Barney	Ingerson	57
	Sweden	Sharla	Papaccio	55

## 4. Delete Command

Delete command is used to delete any tuple from the table.

```
In [10]: %%sql

delete from STUDENTS where first_name='Aharon' ;

select * from STUDENTS

* ibm_db_sa://lzv55210:***@dashdb-txn-sbox-yp-dal09-12.services.dal.ibmcloud.net:50000/BLUDB
1 rows affected.
Done.

Out[10]:
```

	country	first_name	last_name	test_score
	United States	Marshall	Bernadot	54
	United States	Celinda	Malkin	51
	Ukraine	Guillermo	Furze	53
	Russia	Bail	Goodwin	46
	Poland	Cole	Winteringham	49
	Sweden	Emlyn	Erricker	55
	Russia	Cathee	Sivewright	49
	Poland	Barney	Ingerson	57
	Sweden	Sharla	Papaccio	55