



# Database System

Lecture 13

SQL Sub Languages

**TCL-Transaction Control Language**

***COMMIT***

***SAVEPOINT***

***ROLLBACK***

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# SQL Components Or SQL Sub Languages

**DCL:** Data Control Language

Example: Grant, Revoke.

**DDL:** Data Definition Language.

Example: Create, Alter, Drop, Rename and Truncate.

**DML:** Data Manipulation Language

Example: Insert, Update, Delete

**DRL:** Data Retrieval Language

Example: Select

**TCL:** Transaction Control Language

Example : Rollback, Commit, Savepoint

# TCL-Transaction Control Language

## TCL-Transaction Control Language

*TCL commands:*

- ***COMMIT***
- ***SAVEPOINT***
- ***ROLLBACK***

# TCL-Transaction Control Language

- Transaction is a unit of work.
- The unit is will depend on your application but generally it defines some sequence of statements .
- Transactions are made up of any number of DML commands

# TCL - COMMIT

Used to save any unsaved updates to the database and all savepoints and locks are released. We must always issue a Commit or Rollback command to finish a unit of work, which prevents an indeterminate state of an application while leaving DB.

# TCL - SAVEPOINT

It divides a transaction into smaller sub units. It has a parameter which is the name of the savepoint. This name can be used to rollback all updates from the time when you issued the named savepoint.

# TCL - ROLLBACK

- Removes pending database updates.
- Rollback without specifying a savepoint name removes all pending updates.

# TCL - Examples

***Suppose*** : you have create employees3 table with four columns as below:

(Empid , Empname, EmpJob,EmpSal)

***CREATE TABLE Employees3***

***(***  
***Empid            NUMBER(10)    NOT NULL,***  
***Empname        VARCHAR2(20) NOT NULL,***  
***EmpJob          VARCHAR2(20),***  
***EmpSal          NUMBER(7,2)***  
***);***



# TCL - Examples

## Examples :

```
INSERT INTO Employees3  
VALUES (101,'Dhafer','manager',7866.67);
```

Commit;

Now :

We save the insert statement to the database.

# TCL - Examples

## Examples :

```
INSERT INTO Employees3  
VALUES (102,'Mohammed','Supervisor',6000);
```

Savepoint One

```
select * from Employees3 ;
```

```
INSERT INTO Employees3  
VALUES (103,'Ahmed','Teamleader ',4000.43);
```

Savepoint Two

```
select * from Employees3 ;
```

```
INSERT INTO Employees  
VALUES (104,'Riyad','Teamleader ',4500);
```

Savepoint Three

# TCL - Examples

## Examples :

```
select * from Employees3 ;
```

```
INSERT INTO Employees3
```

```
VALUES (105,'Hadil','HR',1500);
```

```
select * from Employees3 ;
```

Rollack to Three

```
select * from Employees3 ;
```

Rollack to Two

```
select * from Employees3 ;
```

Rollack to One

```
select * from Employees3 ;
```



A close-up photograph of a right hand holding a silver pen, writing the words "Thank you" in a fluid, cursive script on a white surface. The pen is positioned at the end of the word "you".

Thank you

*Dhafar Sabah Yaseen*