

# Go and RDBMS

---

## Overview



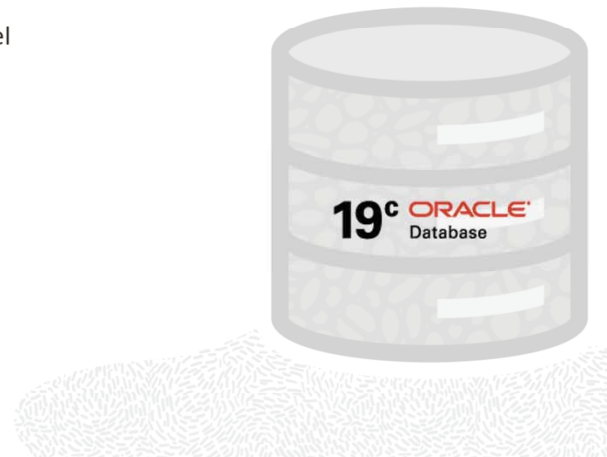
Identify the major components of Database

Retrieve data with the SELECT statement

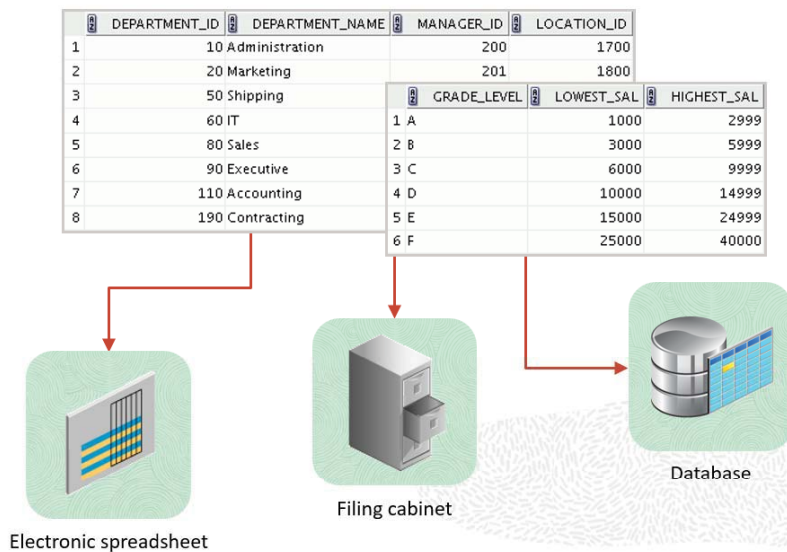
Run DML statements

# Relational and Object Relational Database Management Systems

- Relational model and object relational model
- User-defined data types and objects
- Fully compatible with relational database
- Supports multimedia and large objects
- High-quality database server features



## Data Storage on Different Media

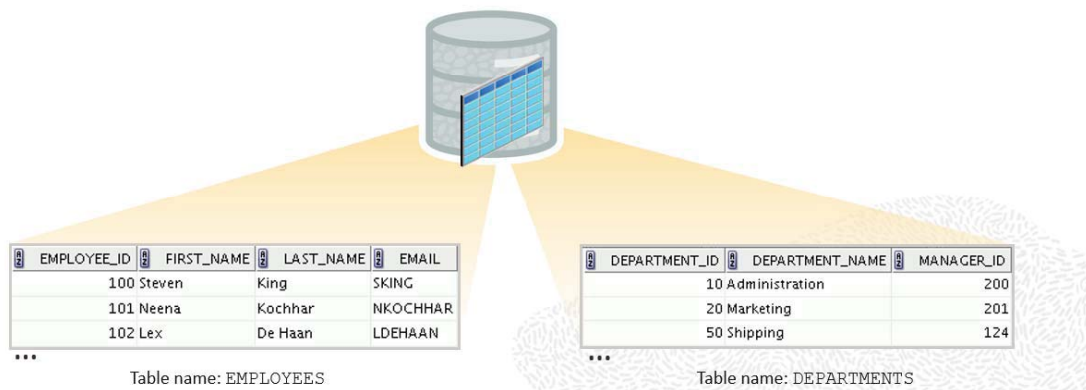


# Relational Database Concept

- Dr. E. F. Codd proposed the relational model for database systems in 1970.
- It is the basis for RDBMS.
- The relational model consists of:
  - Collection of objects or relations
  - Set of operators to act on the relations
  - Data integrity for accuracy and consistency

## Definition of a Relational Database

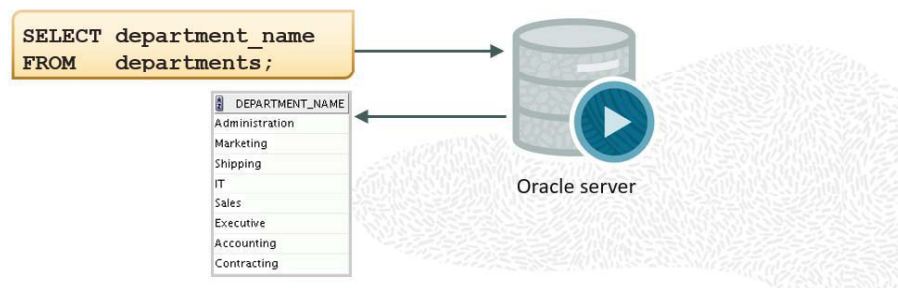
A relational database is a collection of relations or two-dimensional tables controlled by the Database server.



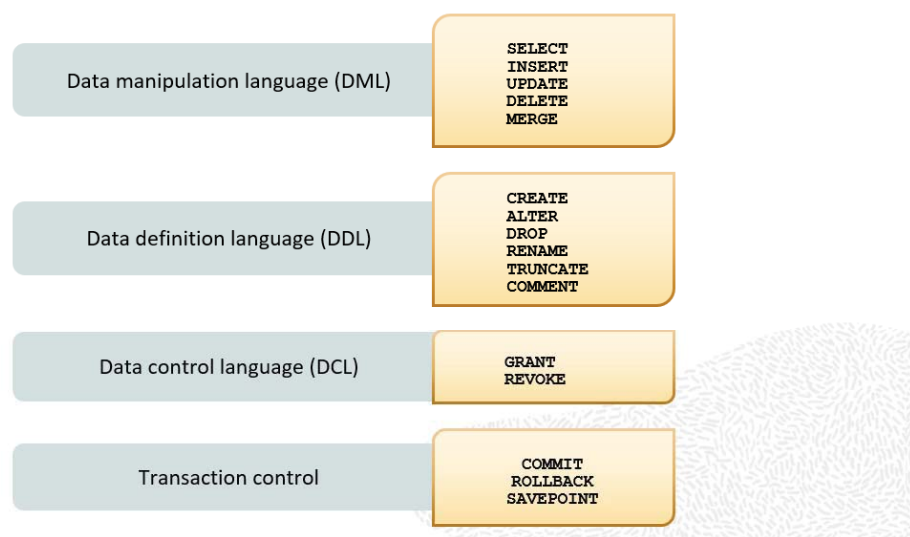
# Using SQL to Query Your Database

Structured query language (SQL) is:

- The ANSI standard language for operating relational databases
- Efficient and easy to learn and use
- Functionally complete (With SQL, you can define, retrieve, and manipulate data in tables.)



## SQL Statements Used in the Course



# SELECT Statement

```
SELECT job_id, SUM(salary) PAYROLL
FROM employees
WHERE job_id NOT LIKE '%REP%'
GROUP BY job_id
HAVING SUM(salary) > 13000
ORDER BY SUM(salary);
```



#	JOB_ID	PAYROLL
1	IT_PROG	19200
2	AD_PRES	24000
3	AD_VP	34000



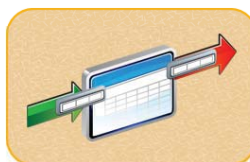
#	job_id	PAYROLL
1	IT_PROG	19200.00
2	AD_PRES	24000.00
3	AD_VP	34000.00

## Data Manipulation Language

- A DML statement is executed when you:
  - Add new rows to a table
  - Modify existing rows in a table
  - Remove existing rows from a table
- A *transaction* consists of a collection of DML statements that form a logical unit of work.



Insert



Update



Delete

## Inserting New Rows

- Insert a new row containing values for each column.
- List values in the default order of the columns in the table.
- Optionally, list the columns in the `INSERT` clause.

```
INSERT INTO departments(department_id,  
                        department_name, manager_id, location_id)  
VALUES (70, 'Public Relations', 100, 1700);
```

```
1 row inserted.
```

- Enclose character and date values within single quotation marks.

## Updating Rows in a Table

- Values for a specific row or rows are modified if you specify the `WHERE` clause:

```
UPDATE employees  
SET    department_id = 50  
WHERE  employee_id = 113;
```

```
1 row updated.
```

- Values for all the rows in the table are modified if you omit the `WHERE` clause:

```
UPDATE    copy_emp  
SET       department_id = 110;
```

```
22 rows updated
```

# Deleting Rows from a Table

- Specific rows are deleted if you specify the `WHERE` clause:

```
DELETE FROM departments
WHERE department_name = 'Finance';
```

1 row deleted.

- All rows in the table are deleted if you omit the `WHERE` clause:

```
DELETE FROM copy_emp;
```

22 rows deleted

## Summary



Identify the major components of Database

Retrieve data with the `SELECT` statement

Run DML statements