



Institut Informatika & Bisnis
DARMAJAYA
Yayasan Alfian Husin



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DATA SCIENCE DARMAJAYA
“YOUR BEST FUTURE IN DATA”

MEETING: [23 & 24]

STRUCTURE QUERY LANGUAGE (SQL) DATA MANIPULATION LANGUAGE (DML) SELECT

BY: HENDRA KURNIAWAN



STRUCTURE QUERY LANGUAGE (SQL) DATA MANIPULATION LANGUAGE (DML) INSERT, UPDATE, DELETE, SELECT

1. Introduction to SQL
2. Data Manipulation Language (DML)
3. Select Commands



Learning Objectives

1. Students be able to comprehend and apply the principles of Data Manipulation Language (DML),
2. Students will gain the skills to select values in one or more tables.

Summary of SQL Queries

- A query in SQL can consist of up to six clauses, but only the first two, SELECT and FROM, are mandatory. The clauses are specified in the following order:

```
SELECT <attribute list>  
FROM <table list>  
[WHERE <condition>]  
[GROUP BY <grouping attribute(s)>]  
[HAVING <group condition>]  
[ORDER BY <attribute list>]
```



Summary of SQL Queries (cont.)

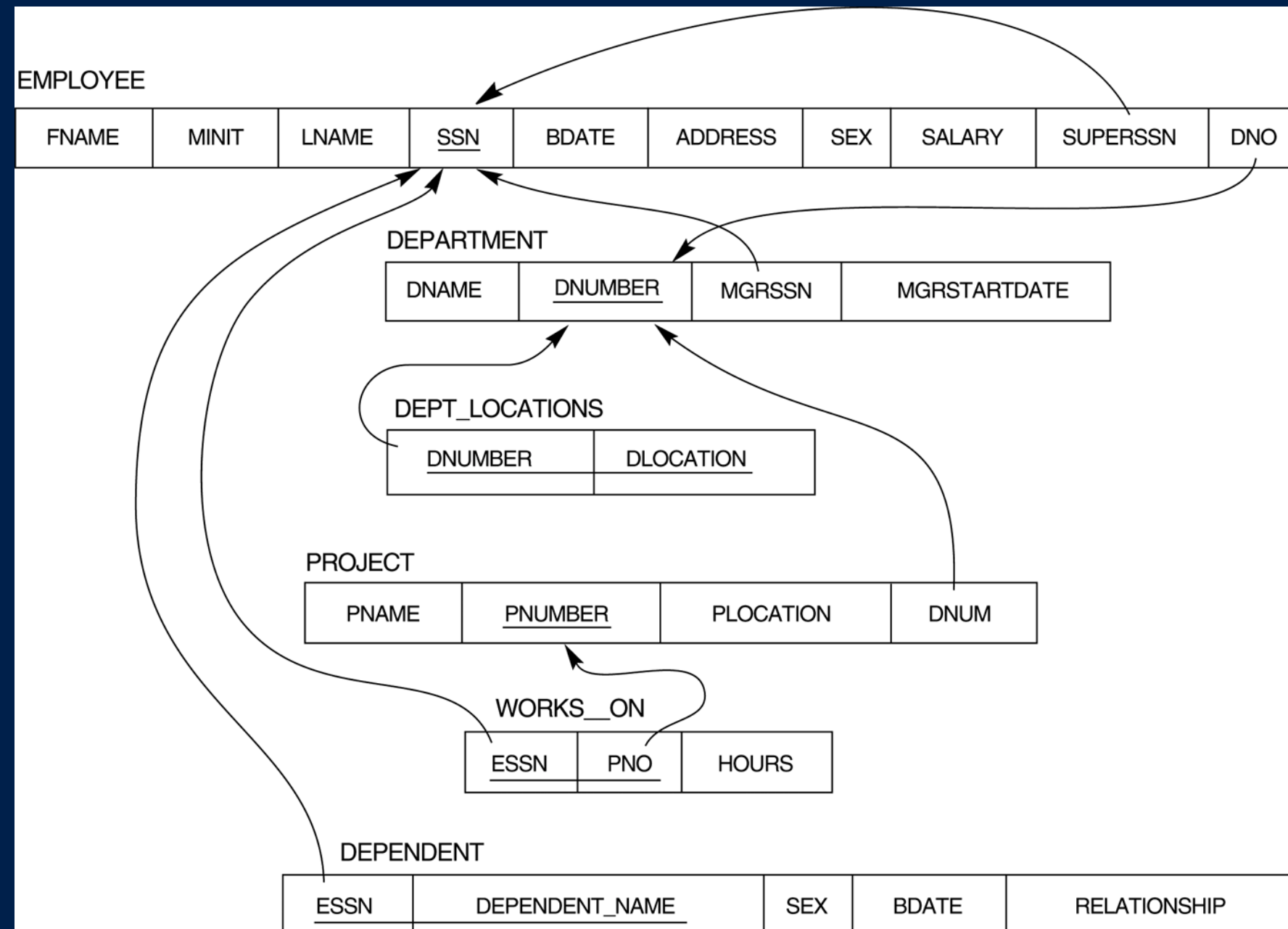
- The SELECT-clause lists the attributes or functions to be retrieved
- The FROM-clause specifies all relations (or aliases) needed in the query but not those needed in nested queries
- The WHERE-clause specifies the conditions for selection and join of tuples from the relations specified in the FROM-clause
- GROUP BY specifies grouping attributes
- HAVING specifies a condition for selection of groups
- ORDER BY specifies an order for displaying the result of a query
- A query is evaluated by first applying the WHERE-clause, then GROUP BY and HAVING, and finally the SELECT-clause



THE HAVING-CLAUSE

Query: For each project *on which more than two employees work* , retrieve the project number, project name, and the number of employees who work on that project.

```
SELECT    PNUMBER, PNAME, COUNT (*)
FROM      PROJECT, WORKS_ON
WHERE     PNUMBER=PNO
GROUP BY  PNUMBER, PNAME
HAVING    COUNT (*) > 2
```





```
SQL> select * from employee;
```

NAME	SSN	SALARY	DNO	SUPERSSN
johny	12345	40000	5	33344
frank	33344	30000	5	88866
james	88866	40000	4	77777
borgs	77777	30000	5	88866
(Zhang	55555	35000	4	12345
TTTT	66666	10000	1	33344)

Q: count total # of employees whose salaries exceed \$35000, but only for dept where more than 1 employee works.



```
SQL> select dname,count(*)  
2  from dept,employee  
3  where dnumber=dno and salary >35000  
4  group by dname  
5  having count(*) > 1;
```

no rows selected



```
SQL> select dname,count(*)  
       from dept,employee  
       where dnumber=dno and salary >35000 and dno in (select dno from employee  
       group by dno  
       having count(*) > 1)  
       group by dname;
```

```
DNAME  COUNT(*)  
-----  
resea      1
```



```
SQL> select * from employee1;
```

FNAME	LNAME	SSN	SUPERSSN
johny smith		12345	33344
frank whong		33344	88866
james borgs		88866	

```
SQL> select * from depedent;
```

FNAME	LNAME	SSN	AGE
johny smith		12345	4
frank whong		33344	6
johny smith		12345	14
james borgs		88866	16
james borgs		88866	18



CONCLUSION

Data Retrieval:

The primary purpose of the SELECT statement is to retrieve data from one or more tables in a database.

Columns and Rows:

SELECT allows you to specify the columns you want to retrieve, offering flexibility in fetching only the necessary information.

Filtering with WHERE:

The WHERE clause in a SELECT statement allows you to filter rows based on specified conditions, helping you retrieve specific subsets of data.



REFERENCES

1. Connolly. T., Begg. Carolyn. 2015. Database System: A Pratical Approach to Design, Implementation, and Management. Sixth Edition. Global Edition. Pearson.



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THANK YOU!!

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