SoftServe
Empowering your Business through Software Development

Module 3
SIMPLE SQL QUERIES

Agenda

- SELECT … FROM
- DISTINCT
- ORDER BY
- SELECT … FROM … WHERE
- IN, BETWEEN, LIKE, NOT
- NULL VALUE
- DATE AND TIME

SELECT ... FROM

Main SQL commands to extract data from database tables:

- SELECT * FROM <table name>
- SELECT <field name1>, <field name2>, ... FROM <table>

For example:

SELECT CITY FROM DEPARTMENT

SELECT ID, NAME FROM STUDENT

COMPANY database

DEPARTMENT

ID

NAME

CITY

EMPLOYEE

🔑 ID

LASTNAME

FIRSTNAME

POSITION

DATE_EMPLOYMENT

ID_DEPARTMENT

ID_BOSS

RATE

BONUS

SALARY_Grade

ID

LOW_SALARY

HIGH_SALARY

DEMONSTRATION

- Demo 1

ORDER BY

The ORDER BY keyword is used for sorting the result set by one or more columns.

To sort the records in a descending order,
we can use the DESC keyword.

For example
        SELECT NAME
        FROM DEPARTMENT
        ORDER BY NAME
        DESC

DISTINCT

To avoid duplication of information we get from the database, we use the DISTINCT keyword.

SELECT CITY

FROM DEPARTMENT

SELECT DISTINCT CITY

FROM DEPARTMENT

WHERE

The WHERE clause is used to extract only those records that fulfill a specified criterion

SELECT <LIST OF FIELDS>

FROM <TABLE>

WHERE <CRITERIA>

Comparison operators:

- =, >, <, >=, <=, <>
- NOT
- AND
- OR

DEMONSTRATION

- Demo 3

IN, BETWEEN

- The IN operator allows you to specify multiple values in a WHERE clause.

For example

SELECT FIRSTNAME, LASTNAME

FROM EMPLOYEE

WHERE POSITION IN ('MANAGER', 'SELLER')

LIKE

- The LIKE operator is used in a WHERE clause to search for a specified pattern in a column
- In SQL, wildcard characters are used with the SQL LIKE operator
- Wildcard characters
  - % – a substitute for zero or more characters
  - _ – a substitute for a single character

NOT

- NOT operator is used to negate a condition in a SELECT, INSERT, UPDATE, or DELETE statement.

    NOT CONDITION

For example

    SELECT CITY

    FROM DEPARTMENT

    WHERE NOT CITY LIKE 'Lviv'

NULL value

- NULL values represent missing unknown data.
- IS NULL
- IS NOT NULL

For example

```
SELECT LASTNAME, FIRSTNAME
FROM EMPLOYEE
WHERE BONUS IS NULL
```

DEMONSTRATION

- Demo 4

Working with DATE type

- DATEPART(datepart, date)
- DAY(date)
- MONTH(date)
- YEAR(date)
- DATEDIFF(datepart, startdate, enddate)

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Thank you!

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