CSE 311L(Database Management System)

LAB-Week 03 (Part A)

Instructor: AAN

Topics:

- Basic SELECT Statement
- Selecting All Columns, Specific Columns
- Arithmetic Expressions, Using Arithmetic Operators, Parenthesis
- Defining a Column Alias

Basic SELECT Statement

```
SELECT *|{[DISTINCT] column|expression [alias],...}
FROM table;
```

Arithmetic Operators

```
SELECT last_name, salary, 12*(salary+100)
FROM employees;
```

Using Column Aliases

```
SELECT last_name "Name", salary*12 "Annual Salary"
FROM employees;
```

Activity 01:

Write a query that displays the last name , weekly salary, department number of the employees. Name the salary column as "Weekly Salary".

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LAB-Week 03 (Part B)

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Objectives:

After completing this lesson, you should be able to do the following:

- Eliminating Duplicate Rows
- Displaying Table Structure
- Concatenation Operator

Using the Concatenation Operator

```
SELECT last_name ||' is a '||job_id
AS "Employee Details"
FROM employees;
```

Eliminating Duplicate Rows

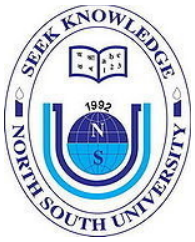
```
SELECT DISTINCT department_id
FROM employees;
```

Displaying Table Structure

```
SELECT DISTINCT department_id
FROM employees;
```

Activity 01:

Write a query that displays the last name concatenated with the job ID, separated by a comma and space, and name the column Employee and Title.



CSE 311L(Database Management System)
LAB-Week 03 (Part C)

Instructor: AAN

Restricting and Sorting Data

Topics:

- Limiting the Rows Selected
- Restricting with Character Strings and Dates
- Comparison Conditions
- Other Comparison Conditions,

Limiting the Rows Selected

```
SELECT employee_id, last_name, job_id, department_id
FROM employees
WHERE department_id = 90 ;
```

Character Strings and Dates

```
SELECT last_name, job_id, department_id
FROM employees
WHERE last_name = 'WHALEN';
```

Comparison Conditions

Operator	Meaning
=	Equal to
>	Greater than
>=	Greater than or equal to
<	Less than
<=	Less than or equal to
<>	Not equal to

Operator	Meaning
BETWEEN ...AND...	Between two values (inclusive),
IN(set)	Match any of a list of values
LIKE	Match a character pattern
IS NULL	Is a null value

```
SELECT last_name, salary
FROM employees
WHERE salary <= 3000;
```

Other Comparison Conditions

```
SELECT last_name, salary
FROM employees
WHERE salary BETWEEN 2500 AND 3500;

SELECT employee_id, last_name, salary, manager_id
FROM employees
WHERE manager_id IN (100, 101, 201);
```

`ORDER BY` Clause

```
SELECT last_name, job_id, department_id, hire_date
FROM employees
ORDER BY hire_date DESC ;
```

LAST_NAME	JOB_ID	DEPARTMENT_ID	HIRE_DATE
Zlotkey	SA_MAN	80	29-JAN-00
Mourgos	ST_MAN	50	16-NOV-99
Grant	SA_REP		24-MAY-99
Lorentz	IT_PROG	60	07-FEB-99
Vargas	ST_CLERK	50	09-JUL-98

Sorting by Multiple Columns

```
SELECT last_name, department_id, salary
FROM employees
ORDER BY department_id, salary DESC;
```

LAST_NAME	DEPARTMENT_ID	SALARY
Whalen	10	4400
Hartstein	20	13000
Fay	20	6000
Mourgos	50	5800
Rajs	50	3500
Davies	50	3100
Matos	50	2600
Vargas	50	2500

Activity 01:

Display the employee last name, job ID, and start date of employees hired between February 20, 1998, and May 1, 1998. Order the query in ascending order by start date.

Activity 02:

Display the last name and department number of all employees in departments 20 and 50 in alphabetical order by name.

CSE 311L(Database Management System)
LAB-Week 03 (Part D)

Instructor: AAN

Topics:

After completing this lesson, you should be able to restrict rows:

- Using the LIKE Condition
- Using the NULL Conditions
- Logical Conditions

Using the `LIKE` Condition

- Use the LIKE condition to perform wildcard searches of valid search string values.
- Search conditions can contain either literal characters or numbers:
  - % denotes zero or many characters.
  - _ denotes one character.

```
SELECT last_name
FROM employees
WHERE last_name LIKE '_o%';
```

The `ESCAPE` Option

```
SELECT employee_id, last_name, job_id
FROM employees
WHERE job_id LIKE '%SA\_%' ESCAPE '\';
```

EMPLOYEE_ID	LAST_NAME	JOB_ID
149	Zlotkey	SA_MAN
174	Abel	SA_REP
176	Taylor	SA_REP
178	Grant	SA_REP

Using the `NULL` Conditions

```
SELECT last_name, manager_id
FROM employees
WHERE manager_id IS NULL;
```

Logical Conditions

Operator	Meaning
AND	Returns TRUE if *both* component conditions are true
OR	Returns TRUE if *either* component condition is true
NOT	Returns TRUE if the following condition is false

```
SELECT employee_id, last_name, job_id, salary
FROM employees
WHERE salary >=10000
AND job_id LIKE '%MAN%';
```

EMPLOYEE_ID	LAST_NAME	JOB_ID	SALARY
149	Zlotkey	SA_MAN	10500
201	Hartstein	MK_MAN	13000

Using the NOT Operator

```
SELECT last_name, job_id
FROM employees
WHERE job_id
NOT IN ('IT_PROG', 'ST_CLERK', 'SA_REP');
```

LAST_NAME	JOB_ID
King	AD_PRES
Kochhar	AD_VP
De Haan	AD_VP
Mourgos	ST_MAN
Zlotkey	SA_MAN
Whalen	AD_ASST
Hartstein	MK_MAN
Fay	MK_REP

Activity 01:

Display the last name and hire date of every employee who was hired in 1994.

Activity 02:

Display the last name, salary, and commission for all employees who earn commissions. Sort data in descending order of salary and commissions.Title.

Activity 03:

Display the last name of all employees who have an *a* and an *e* in their last name.