Database Systems 1

Lab – SQL DML Statements

(Modifying Data)

Department of Information Technology
Database Systems 1 (IT215)
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- SQL DML Statements
  - INSERT Statement
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SQL Data Manipulation Language (DML)

- SQL **DML** Commands are for
  - Inserting new records into a table (**INSERT** Statement)
  - Deleting records from a table (**DELETE** Statement)
  - Updating records in a table (**UPDATE** Statement)

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INSERT Statement

- The **INSERT** statement is used to put new records into a table.

INSERT INTO *tablename* (column names) **VALUES** (*value*. . .);

Note: the column names are optional if we are inserting values for all columns in their proper order.

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Inserting One Record into a Table

- Insert information about '**Accounting**' department in the department table:
  - **Accounting** department is in building **3**, with **3000.50** budget amount.

department (deptName, building, budget)

- You can use **insert into** statement in two different ways:

```
insert into department values ('Accounting', 3 , 3000.50);
```

```
insert into department (deptName, building, budget) values ('Accounting', 3 , 3000.50);
```

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Inserting One Record into a Table

Department Table

deptName	building	budget
Accounting	3	3000.50
IT	2	***NULL***

You can use **insert into** statement in two different ways:

```
insert into department values ('IT', 2 , Null);
```

```
insert into department (deptName, building) values ('IT', 2);
```

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Inserting Multiple Records into a Table

- Insert the data related to two new students into the **student** table:

SID	SName	deptName
1	John	Accounting
2	Smith	Null

```
insert into department values (1 , 'John' , 'Accounting'),
                              (2, 'Smith' , Null);
```

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Check the Result of this Command

insert into Student **values** (2, 'Marry', 'IT');

Violation of Primary key

SID	SName	deptName
1	John	Accounting
2	Smith	Null

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Check the Result of this Command

insert into Student **values** (3, 'Kate', 'Banking');

Violation of Foreign key

deptName in the **student** table is a foreign key referring to **deptName** in the **department** table.

student

SID	SName	deptName
1	John	Accounting
2	Smith	Null

department

deptName	building	budget
Accounting	3	3000.50
IT	2	***NULL***

Check the Result of this Command

insert into Student (SID, Sname) **values** (3, 'Tom');

insert into Student (Sname, deptName) **values** ('Tom' , 'Accounting');

Primary key is not allowed to be null

insert into department **values** ('Business' , 'Main' , 2500.25);

ERROR!

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Delete Records from a table

- The **DELETE** command is used to delete records from a table.
- The number of records deleted may be zero, one, or many, depending on how many satisfy the condition (predicate).

```
DELETE  FROM  table_name
WHERE  predicate;
```

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Example – Deleting Records

- Delete records of only students who study in the **'Accounting'** department.

student

SID	SName	deptName
1	John	Accounting
2	Smith	Null

```
DELETE FROM student
WHERE deptName = 'Accounting';
```

SID	SName	deptName
2	Smith	Null

- Delete records of all students from the **student** table.

student

SID	SName	deptName
1	John	Accounting
2	Smith	Null

```
DELETE FROM student;
```

SID	SName	deptName

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