SQL

Database – Lecture 8

Recap

- SQL
- Create Database With SQL
- Constraints
- Data Types

Contents

- Alter Table
- Update and Delete Data
- SELECT

Alter Table

- Modify an existing table by adding, modifying, renaming, or deleting columns and constraints.

```
students(id, name, phone, roll, email, address, dept_id)
```

- **Add a New Column**

```
ALTER TABLE students
ADD email VARCHAR(100);
```

- **Add Multiple Columns**

```
ALTER TABLE students
ADD (phone VARCHAR(15), address VARCHAR(255));
```

- **Modify Existing Column**

```
ALTER TABLE students
MODIFY email VARCHAR(150);
```

- **Rename Column and Change Data Types**

```
ALTER TABLE students
CHANGE phone contact VARCHAR(20);
```

Alter Table

- **Drop a Column**

```
ALTER TABLE students
DROP COLUMN address;
```

- **Add Primary key**

```
ALTER TABLE students
ADD primary key (id);
```

- **Drop Primary key**

```
ALTER TABLE students
DROP primary key;
```

- **Add Auto increment**

```
ALTER TABLE students
MODIFY id INT AUTO_INCREMENT;
```

Alter Table

- **Add foreign key**

```
ALTER TABLE students
ADD CONSTRAINT fk_department
FOREIGN KEY (dept_id)
REFERENCES departments(id);
```

- **Drop foreign key**

```
 ALTER TABLE students
DROP FOREIGN KEY fk_department;
```

- **Add Unique constraint**

```
ALTER TABLE students
ADD UNIQUE (email);
```

- **Drop Unique**

```
 ALTER TABLE students
DROP INDEX email;
```

Alter Table

- **Add default**

```
 ALTER TABLE students
ALTER email SET DEFAULT `abc@example.com';
```

- **Drop default**

```
 ALTER TABLE students
ALTER email DROP DEFAULT;
```

- **Rename table**

```
 ALTER TABLE students
 RENAME TO student_info;
```

- **Rename a database Name??**

Alter Table

- **Add check**

```
ALTER TABLE students
ADD CONSTRAINT chk_age CHECK (dob <= '2010-01-01');
```

- **Drop default**

```
       ALTER TABLE students
      DROP CONSTRAINT chk_age;
```

Update Data

- The **UPDATE** statement is used to modify the existing records in a table.
- The **WHERE** clause specifies which record(s) that should be updated. If you omit the WHERE clause, all records in the table will be updated!
- **Syntax:**

```
UPDATE table_name
SET column1 = value1, column2 = value2,..
WHERE condition;
```

Update Data

teachers

id	name	designation	city	salary
1	Trump	Professor	Dhaka	100000
2	Obama	Associate Professor	Dhaka	80000
3	Kim	Assictant Professor	Khulna	70000
4	King	Assistant Professor	Barishal	65000
5	Alice	Lecturer	Barishal	60000

Update Example

- **Update the name and city of the person whose id is 4**

```
UPDATE teachers
SET name = ’Mr King', City= Patuakhali’
WHERE id = 4;
```

- **Provide 10% salary increment of all assistant professor**

```
UPDATE teachers
SET salary = salary*1.1
WHERE designation = ’Assistant Professor’;
```

Delete Data

- The DELETE statement is used to delete existing records in a table.
- **Syntax:**

```
DELETE FROM table_name WHERE condition;
```

Example:

```
DELETE FROM teachers WHERE id=4;


DELETE FROM teachers; //delete all data
```

SELECT

References

- Alter: https://www.w3schools.com/sql/sql_alter.asp
- Update: https://www.w3schools.com/sql/sql_update.asp
- Delete: https://www.w3schools.com/sql/sql_delete.asp