

Week 5 Mini Project: SQL Database and CRUD Operations

This project demonstrates how to connect to an SQLite database, perform CRUD operations, and automate the testing process using GitLab CI/CD.

Project Overview

This project connects to a SQLite database, performs CRUD (Create, Read, Update, Delete) operations, and demonstrates the use of SQL queries. The project is set up to run in a Continuous Integration/Continuous Deployment (CI/CD) pipeline where the `.db` file is loaded and tested.

Deliverables

- Python script (`main.py`) for CRUD operations
- Test script (`test_main.py`) for unit testing
- `.gitlab-ci.yml` for CI/CD pipeline
- **Screenshot of successful database operations:**

```
1 ▶ Run python3 src/main.py # Run main.py to generate the .db file
9 Users (before update): [(1, 'Alice', 30), (2, 'Bob', 25)]
10 Users (after update): [(1, 'Alice Smith', 31), (2, 'Bob', 25)]
11 Users (after delete): [(1, 'Alice Smith', 31)]
```

Setup

1. Clone the repository:

```
git clone https://github.com/yourusername/YOUR_REPO_NAME.git
```

2. Run the Python script:

```
python3 main.py
```

3. Check the `.db` file is created and populated by running:

```
sqlite3 week5_project.db
```

CI/CD Pipeline

The GitLab pipeline will automatically run the Python script and log the output for testing the database operations.