Lab 12 Exercise - Postgresql

Student’s name: *Sally Han*

**Lab 12 exercise A**

Tuesday, April 29, 2025 (introduction)

**Lab 12 exercise B**

Thursday, May 1: CRUD

1. **CREATE a table**

*Create: Create records*

CREATE TABLE books (

id SERIAL PRIMARY KEY,

title VARCHAR(100) NOT NULL,

author VARCHAR(100) NOT NULL,

year\_published INT);

*Insert: Insert records*

INSERT INTO books (title, author, year\_published)

VALUES

('The Great Gatsby', 'F. Scott Fitzgerald', 1925),

('Animal Farm', 'George Orwell', 1945),

('To Kill a Mockingbird', 'Harper Lee', 1960),

('Brave New World Aldous', 'Huxley', 1932)

1. **READ**

-- Select all books

SELECT \*

FROM Books;

-- Select books where the author is 'George Orwell'

SELECT \*

FROM Books

WHERE author = 'George Orwell';

1. **UPDATE**

-- Update the year published of Brave New World to 1931

Update books

SET year\_published = 1931

WHERE title = 'Brave New World'

1. **DELETE**

-- Delete the record for 'To Kill a Mockingbird'

DELETE FROM books

WHERE title = 'To Kill a Mockingbird'

1. **Final (Verification)**

-- View Final Table

SELECT \*

FROM books;

**Bonus\***

–-- Add a new column genre to the books table

ALTER TABLE books

ADD COLUMN genre VARCHAR(50);

-- Update the genre for each book

UPDATE books

SET genre = 'Dystopian'

WHERE title = 'Brave New World Aldous';

UPDATE books

SET genre = 'Classic Literature'

WHERE title = 'The Great Gatsby';

UPDATE books

SET genre = 'Satire'

WHERE title = 'Animal Farm';

-- Select all books grouped by genre

SELECT genre, title, author, year\_published

FROM books

ORDER BY genre, title;

Final view

**LAB 12C exercise C**

Friday, May 2: Relational Database

**CREATE:**

CREATE TABLE students(

id SERIAL PRIMARY KEY,

name VARCHAR(100),

major VARCHAR(100)

);

CREATE TABLE courses(

id SERIAL PRIMARY KEY,

title VARCHAR(100),

department VARCHAR(100)

);

CREATE TABLE enrollments(

id SERIAL PRIMARY KEY,

grade VARCHAR(2),

student\_id INT REFERENCES students(id),

course\_id INT REFERENCES courses(id)

);

**INSERT:**

INSERT INTO students (name, major)

VALUES

('Alice Brown', 'Computer Science'),

('Peter Pan', 'Mathematics'),

('Annie Chen', 'Physics'),

('Sally Han', 'Computer Science');

INSERT INTO courses (title, department)

VALUES

('Database Systems', 'computer science'),

('Linear Algebra', 'mathematics'),

('Quantum Mechanics', 'physics'),

('Python Programming', 'computer science'),

('Calculus III', 'mathematics');

INPUT INTO enrollments (student\_id, course\_id, grade)

VALUES

(4, 'A',),

('B', 'Annie'),

('C', 'Peter'),

('B+', 'Alice');

**READ:**

\*The course taken for each student are not assigned.

\*Student table already exists.

















