*Author: Shujuan Ji*

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**Flask Application with PostgreSQL step by step guide**

**1. Install PostgreSQL**

**On Windows**:

• Download PostgreSQL from the [official website](https://www.postgresql.org/download/).

• Run the installer and follow the steps.

• During installation, set:

• The superuser password for the PostgreSQL user (postgres).

• The default port (usually 5432).

**2. Set Up a Database**

**1). Log in to PostgreSQL**

• Windows:

• Open the “SQL Shell (psql)” from your Start menu.

• Enter the following details when prompted:

• Server: Press Enter to use localhost.

• Database: Press Enter to use postgres.

• Port: Press Enter to use the default 5432.

• Username: Enter postgres (or the user you created during installation).

• Password: Enter the password set during installation.

• macOS/Linux:

**Open your terminal and run:**

**psql -U postgres**

If prompted, enter the password for the postgres user.

**2). Create a New Database**

Once you’re logged into the PostgreSQL interactive shell (psql), create a new database:

CREATE DATABASE myapp;

You should see:

CREATE DATABASE

**3). Create a New User (Optional)**

To improve security, create a specific user for your application instead of using the postgres default user:

CREATE USER myuser WITH PASSWORD 'mypassword';

Grant this user full privileges on your new database:

GRANT ALL PRIVILEGES ON DATABASE myapp TO myuser;

**4). Verify Your Setup**

List all databases to confirm that myapp was created:

\l

You should see something like this:

Name | Owner | Encoding

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myapp | postgres | UTF8

Switch to the new database:

\c myapp

You’ll see:

You are now connected to database "myapp".

**5. Exit the PostgreSQL Shell**

**Type \q to exit the PostgreSQL interactive shell.**

**3. Install Required Python Libraries**

Install libraries to integrate PostgreSQL with Flask:

pip install psycopg2 flask-sqlalchemy

**4. Configure Flask to Use PostgreSQL**

• Create a Flask project directory with the following structure:

myapp/

├── app.py

├── config.py

├── models.py

config.py

Define the database connection:

models.py

Define database models:

**5. Connect PostgreSQL to JavaScript**

To connect your JavaScript frontend to Flask:

1. Use Flask as the backend server that communicates with PostgreSQL.

2. Use JavaScript (e.g., fetch or Axios) to make API calls to Flask endpoints.

**6. Test the Setup**

1. Run the Flask app:

python app.py

2. Use psql or a GUI tool like **pgAdmin** to confirm that data is stored in PostgreSQL.

3. Access the API endpoint (e.g., /users) from the browser or with Postman.

4. Test the JavaScript application to ensure data is fetched and displayed correctly.

I also installed GUI tool **pgAdmin**

Website: [pgAdmin](https://www.pgadmin.org/)