Python DB Tennis Tutorials

Read/Watch the required knowledge, and complete each section’s activity

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# 1: Databases: setup

**Required Knowledge:**  
Watch postgres + pgadmin walkthrough

<https://www.youtube.com/watch?v=Dd2ej-QKrWY>

Bookmark the postgres reference documentation

<https://www.postgresql.org/docs/current/index.html>

Bookmark the pg admin website

<https://www.pgadmin.org/download/pgadmin-4-windows/>

**Activities:**

create a local postgres database server using ‘postgres’ docker

<https://hub.docker.com/_/postgres/>

login into database using pg admin

<https://www.pgadmin.org/download/pgadmin-4-windows/>

***Hint: Helpful guide if you get stuck***  
[https://dev.to/steadylearner/how-to-set-up-postgresql-and-pgadmin-with-docker-51h](https://dev.to/steadylearner/how-to-set-up-postgresql-and-pgadmin-with-docker-51h#:~:text=Use%20%24docker%20exec%20-it%20postgres%20%2Fbin%2Fbash%20to%20use,if%20you%20want%20after%20you%20complete%20this%20post)

Run a few commands

CREATE TABLE hello (

key varchar(80),

value varchar(80),

PRIMARY KEY (key)

);

INSERT INTO hello VALUES ('key1', 'inserted via values');

INSERT INTO hello (key, value) VALUES ('key2', 'inserted via columns');  
SELECT \* FROM hello  
SELECT key FROM hello

SELECT value FROM hello WHERE key='key1'

Congrats well done!

# 2: Databases: 101 tutorial

**Activities:**

Do tutorial covering create database / simple table insertion, deletion and selection SQL  
- recommended to use the docker postgres instance from part 2, rather than install locally postgres

<https://www.postgresql.org/docs/current/tutorial-sql.html>

***Hint: use postgres pgadmin instead of postgres cli, it’s much much easier !***

# 3: Databases: beyond basics tutorial

**Activities:**  
***WARNING these are advanced topics, don’t expect to understand these first time, it’s like layers of paint, you get exposure here, so when you do SQL in the future it won’t be new but something remembered***

Do tutorial covering advanced database topics: views / foreign keys / transactions / functions / inheritance   
- recommended to use the docker postgres instance from part 2, rather than install locally postgres

<https://www.postgresql.org/docs/current/tutorial-advanced.html>   
***Hint: use postgres pgadmin instead of postgres cli, it’s much much easier !***

# 4: Databases: hello python

**Required Knowledge:**

Read up on psycopg2  
<https://pypi.org/project/psycopg2/>

<https://www.psycopg.org/docs/>

<https://www.psycopg.org/docs/usage.html>

**Activities:**  
Follow the postgresql.org tutorial to run SQL in python on your local database   
- recommended to use the docker postgres instance from part 2, rather than install locally postgres

<https://wiki.postgresql.org/wiki/Psycopg2_Tutorial>  
***Hint: use postgres pgadmin instead of postgres cli, it’s much much easier !***

# 5: DB + HTTP Bonus : Weatherman Postcode Lookup Service

**OPTIONAL BONUS ACTIVITY**

**Bonus Activity:**  
If you’re feeling adventurous, this will combine the database work and the weather service look up  
  
- load the government’s postcode lookup csv

- load it into the database

- add a “postcode” argument to your weatherman app from the http examples  
 (that will query the postcode and get’s lat/lon and then return the weather of the place)

government’s postcode lookup csv:  
<https://geoportal.statistics.gov.uk/datasets/ons::national-statistics-postcode-lookup-november-2021/about>   
  
  
Sidenote government has created a burglary hit list…

<https://www.data.gov.uk/dataset/1d15d99c-9b7f-47b1-afd9-22e2e7a6951f/location-of-empty-homes>   
  
***Hint: use postgres pgadmin instead of postgres cli, it’s much much easier !***