

Assignment 04b

Documentation for database and research

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Introduction

I have created a database using PostgreSQL, which is hosted for free on:

<https://www.neon.tech>

The database is called *it_firm* and has a schema called *personel*, which contains a table called *employees*. So it basically stores employee information in an IT company. Below is an excel ark with current data from the *employees* table:

employee_id	employment_type	firstname	middlename	lastname	hire_date
6c4d8219-5e0c-4b1b-8296-014b6694b3b9	DEV	Peter		Hansen	2025-04-09
cb56d503-cd79-44c3-bc4b-3e96b26f8a45	DEV	RAJ	PATHAK	KUMAR	2025-04-08
ef57c0e7-d4b3-4b28-8001-59480ff5772e	DEV	RAJ	PATHAK	KUMAR	2025-04-08

I have only made 1 table, because I think database design is beyond the scope of the assignment. Instead I have focused on choosing the right database technology.

How I implemented solution

It is not possible to achieve certain things through the GUI of the website, but Neon tech has a SQL section, where you can run SQL to work with the database and I utilized both ways.

To control access to the data at the most granular level I wanted to create a user that could only see the *hire_date* column. To achieve this I created a view on top of the *employees* table that only shows the *hire_date* column and assigned it to a user, created for the purpose.

Why PostgreSQL?

To control access level at the most fine grained level, my research suggested that Oracle and PostgreSQL DBMS's are the best choices here. There are other databases that also have the desired functionality, but they are not as popular as the 2 mentioned, which means there is a larger community behind them and better support options.

When deciding which one to use between them, since Oracle database is for enterprise applications and has more features, it would take longer to learn and implement. The documentation is also a bit difficult to use, in my personal opinion.

PostgreSQL is more lightweight in comparison and hence easier and quicker to learn, thus making it more suitable for this case.