ECE-GY 9941: Advanced Projects 3, Section BK32 Fall 2021 Adam Akturin: aa8381
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We Offer Wellness Report 3: OLTP Database Implementation

Project status

Since the last report, I have finished implementing the OLTP database. Also, I have introduced several changes to the schema:

- Some columns, such as 'doctor_id,' have been turn to a regular, non-primary key column, because you can have same 'doctor_id's in different hospitals. However, the combination of 'hospital_id', 'department_id', and 'doctor_id', was made a unique constraint since you cannot have two doctors with same ids working in the same department of the same hospital.
- Added 'hospital id' and 'department id' columns to several tables for more efficient JOIN operations.
- Added a trigger that would update 'TLB_LAST_DATE' column each time a respective row in a table has been updated.
- Added table partitioning by 'hospital_id'
- Added unique constraints

I changed the design of the schema

Project progress

Below, you can see the timeline of the project. The completed stages of the project are marked with bold font.

- **9/26/2021: OLTP database design.**
- **10/10/2021: OLTP database implementation.**
- 10/24/2021: DW design and implementation.
- 11/07/2021: ETL code.
- 11/21/2021: reports and analytics from DW database.
- 12/12/2021: end-to-end tests, project demo.
- 12/14/2021: final project report.
- TBA: final presentation.

I host my database on AWS RDS.

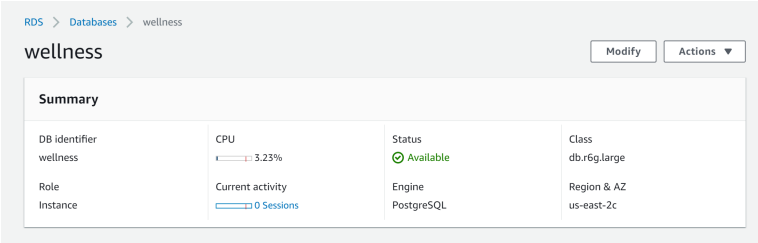

Figure 1: AWS RDS database summary.

I use PostgreSQL as DB layer. To interact with the database hosted on RDS, I use pgAdmin.

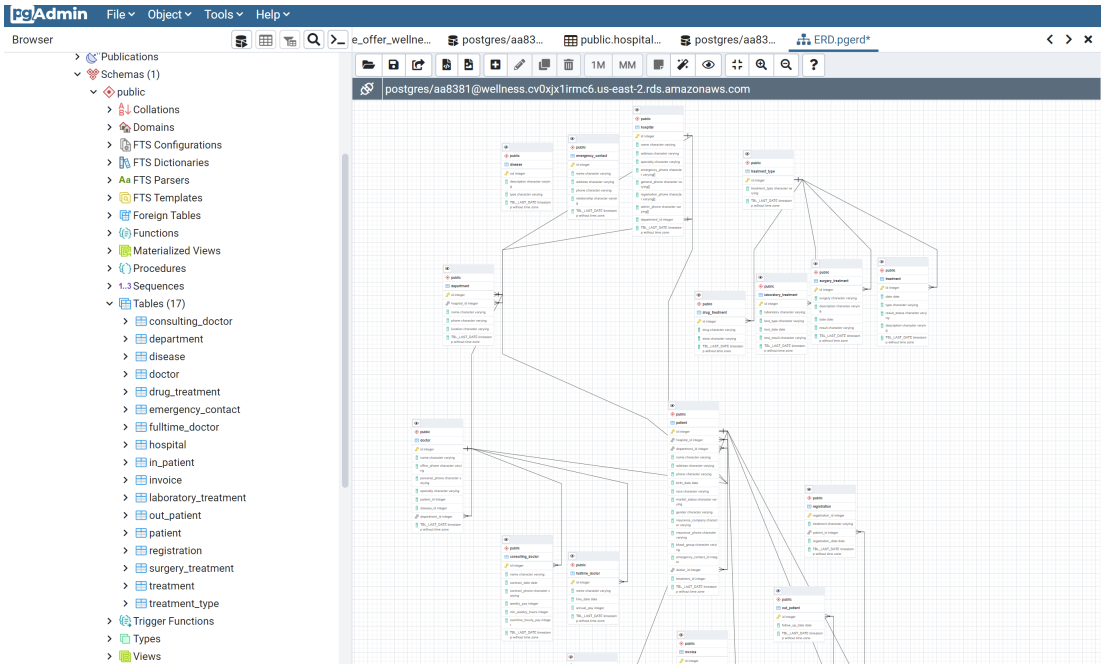

Figure 2: pgAdmin interface.

Project planned work

- History tables with triggers for patient and employment tables
- Data warehouse design and implementation.