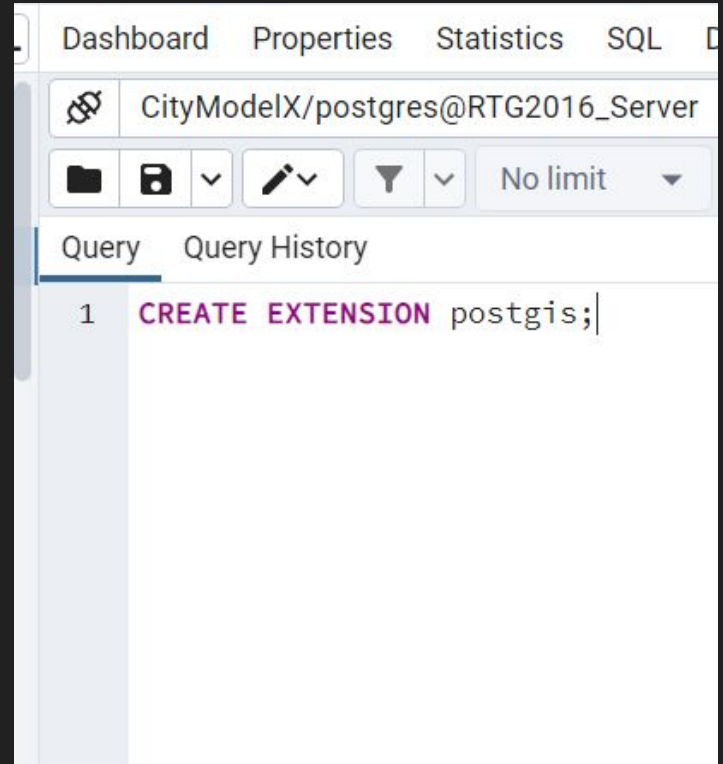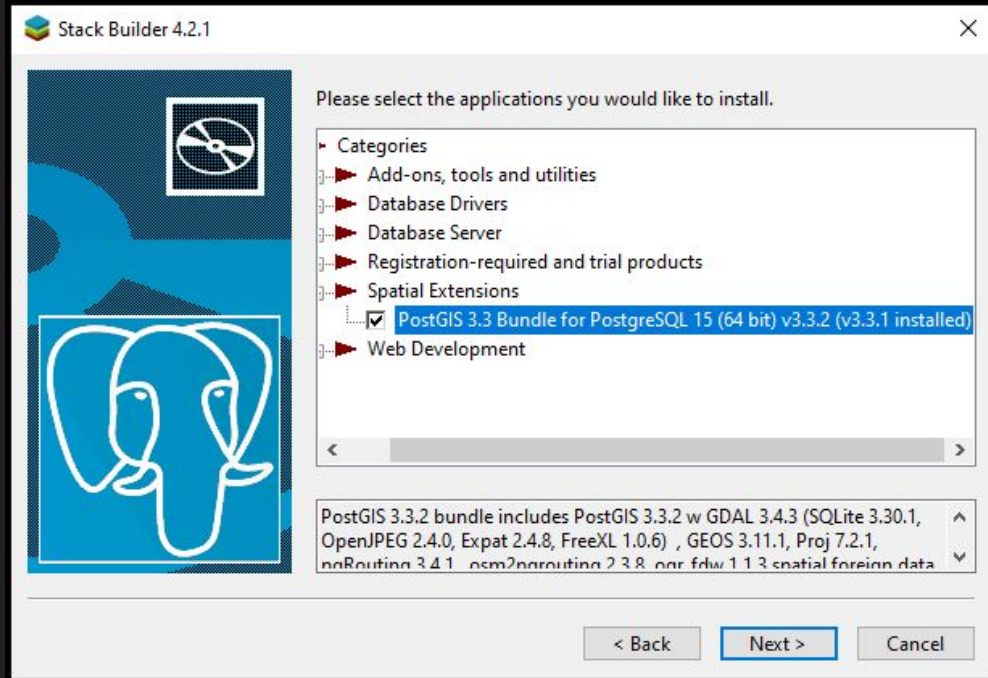# Querying CityGML Data

Agnes, Fahad

Motivation

- Want to query City GML Data
- Come up with a process that anyone can replicate with clear instructions
    - Make shorter tutorial than the one currently available
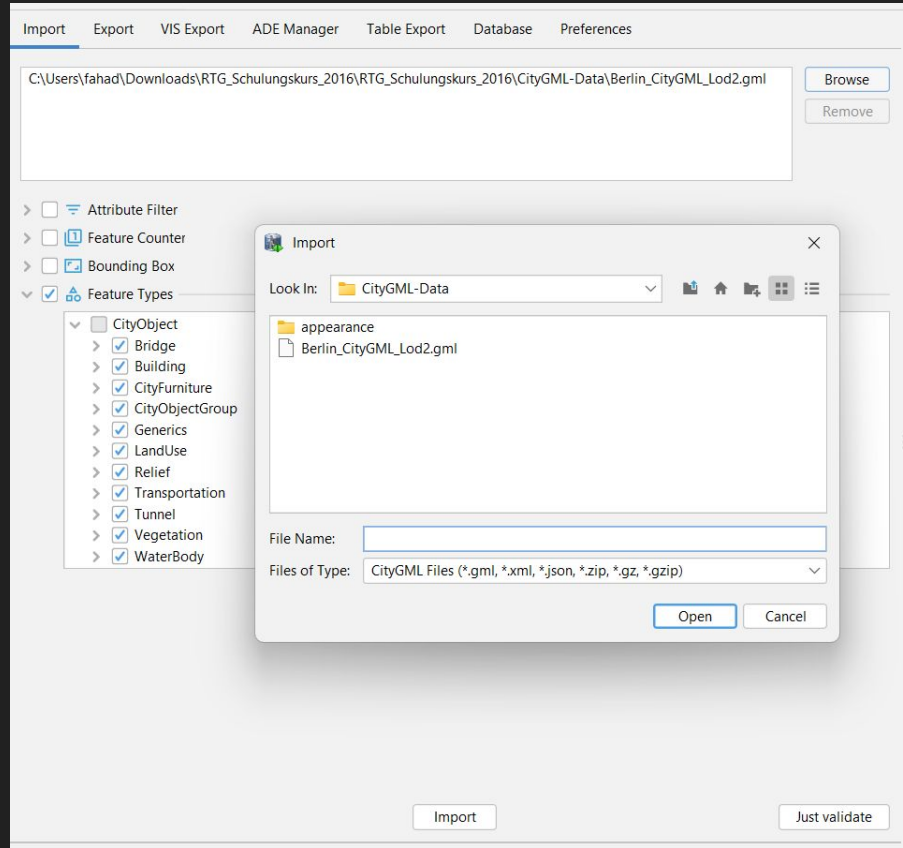- Learn about 3D Data & prior work

Process

1. Set up PostGres, PostGis
   a. Enable PostGis Extension into database
   b. Connect to 3D City importer/exporter
2. Load any GML Data into 3D City Importer
3. Validate data
   a. Needs to be formatted correctly: file not corrupt, good structure
4. Import data into PostGres
   a. Inspect tables and columns in the data to see what can be queried
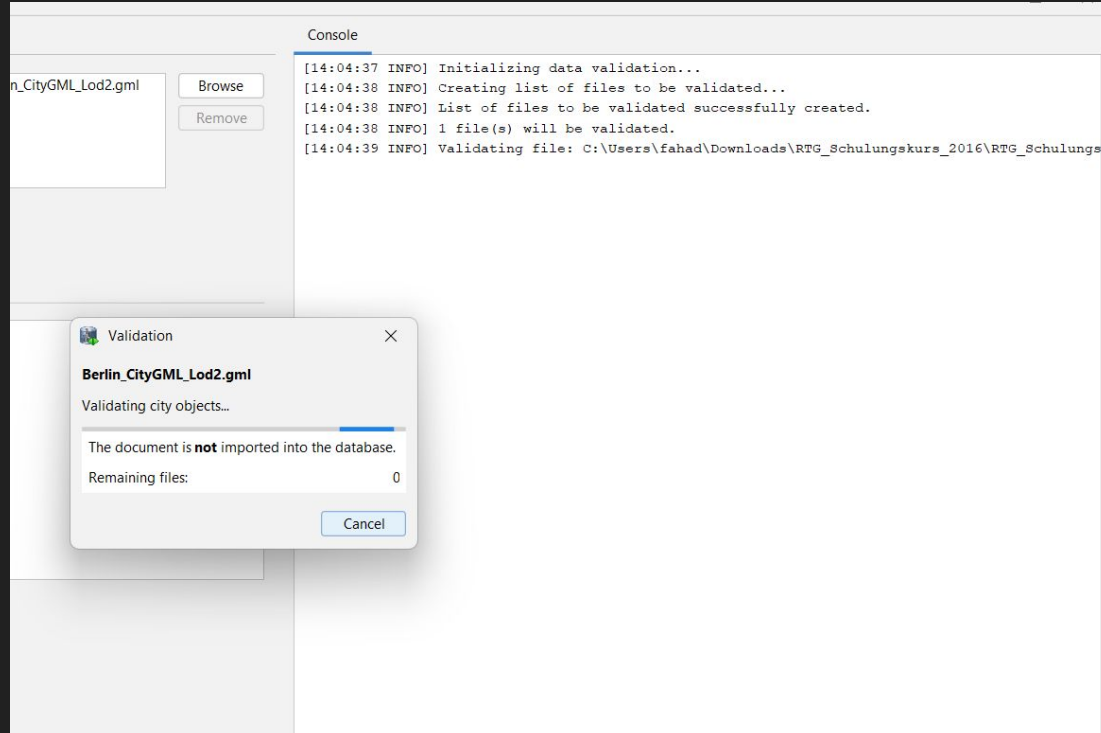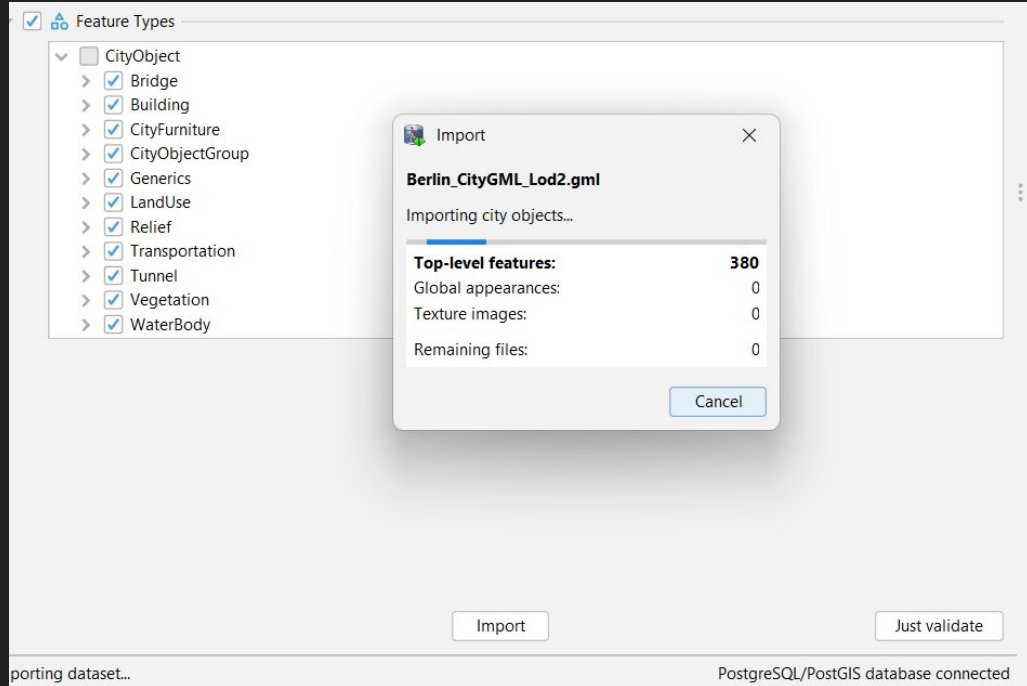5. Run queries in PostGres on the data

Set up PostGres, PostGis

Load any CityGML data into database

Validate Data

Import Data into PostGres

Run Postgres Queries

PostGIS API

Results

```
1   SELECT *
2   FROM citydb.building
3   WHERE ST_Intersects(building, ST_MakeEnvelope(-74.006, 40.712, -73.992, 40.725, 4326))
4
5
6   SELECT
7     ST_Area(geom)/10000 AS hectares
8   FROM bc_municipality
9   WHERE name = 'PRINCE GEORGE';
10
11  /*hectares
12  ------------------
13  32657.9103824927
14  */
15
16  SELECT
17    name,
18    ST_Area(geom)/10000 AS hectares
19  FROM bc_municipality
20  ORDER BY hectares DESC
21  LIMIT 1;
22
23  /*
24  name            | hectares
25  ----------------+------------------
26  TUMBLER RIDGE   | 155020.02556131
27  */
```

Conclusion

- Able to successfully connect to the 3D City Importer/Exporter
- Queried the CityGML data that we originally planned on using in proposal
- Acquainted with 3D data, databases
- Created an easy to follow up to date documentation for anyone who wants to get started with Postgres/PostGIS and GML datasets

Thank you for a great semester!

Any questions?