Data Engineering Quiz

This test is composed of exercises that resemble tasks that you would be performing as a data engineer. Your task is to write code that downloads data from an API and loads it to a PostgreSQL database, then use this data to answer some questions. Please complete the tasks using Python and SQL as appropriate. Please submit all code that you write to complete the tasks.

Task 1

The Canadian Press maintains an API that provides information about the last Canadian federal election. A list of endpoints can be found here. The first task is to create and populate two PostgreSQL tables with data downloaded from the API. You should have received credentials to log into the database along with this quiz. The two tables should contain the following information:

Table 1 should contain the following columns and be named *vote_share*:

- Riding Number
- Riding Name in English
- Riding Name in French
- Total votes
- Turnout (votes / voters)
- Conservative Vote Share
- Liberal Vote Share
- NDP Vote Share
- Green Vote Share
- Bloc Quebecois Vote Share
- Peoples' Party Vote Share

Table 2 should contain the following columns and be named *candidates*:

- Riding Number
- Liberal candidate
- Conservative candidate
- NDP candidate
- Green candidate
- Bloc Quebecois candidate
- Peoples' Party candidate

For task 1, please provide us with the following 3 outputs:

1) The DDL for each table
2) A short blurb outlining the rationale behind your table design choices.

3) The Python script you used to download the data from the API and load it into the PostgreSQL database.

Task 2:

Connect to the database and answer the following questions using SQL statements. Please send us both your answers and the SQL statements used to generate the answers.

a) Who won the election?
b) Which candidate received the largest share of the vote in their riding and what party did they run for?
c) How many ridings were won by candidates named "John"? Which ridings?
d) Of the parties who won at least 1 riding, which won the fewest ridings?