DuckDB with DBeaver: A Beginner's Instruction Manual

Introduction
This manual provides a comprehensive guide for beginners in SQL to set up and test a DuckDB database connection via DBeaver. The guide assumes no prior knowledge of DuckDB or DBeaver and aims to get you up and running quickly.

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1. Download `presidents.duckdb`

Steps

1. Locate the File: Obtain the `presidents.duckdb` file. This file should be shared with you by the instructor or course administrator.
2. Choose the Directory: Decide where you'd like to store the DuckDB file.
3. Download and Save: Save the `presidents.duckdb` file to the selected directory.

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2. Install DBeaver

DBeaver is an SQL client software application and a database administration tool.

Steps

1. Visit Website: Navigate to the DBeaver official website.
2. Download Installer: Choose the download link that matches your operating system (Windows, macOS, Linux).
3. Install Software: Run the installer and complete the setup following the installation wizard.
4. Launch DBeaver: Open DBeaver from the Start Menu (Windows) or the Applications folder (macOS).

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3. Connect to DuckDB

Steps

1. Open DBeaver: Launch DBeaver if it is not already open.
2. New Connection Wizard: Click the `New Connection` icon (a plug or "+" symbol) or go to `File > New > Connection`.
3. Choose Database: Find `DuckDB` in the list of databases.
4. Configure Connection:
    - In the `Database` field, navigate to where you saved `presidents.duckdb`.
    - Accept the default settings for the other fields unless specified otherwise. Install drivers if prompted.
5. Test Connection: Click `Test Connection` to ensure proper setup.
6. Finish: Complete the connection setup by clicking `Finish`.

For additional details, consult the official DuckDB guide for DBeaver.

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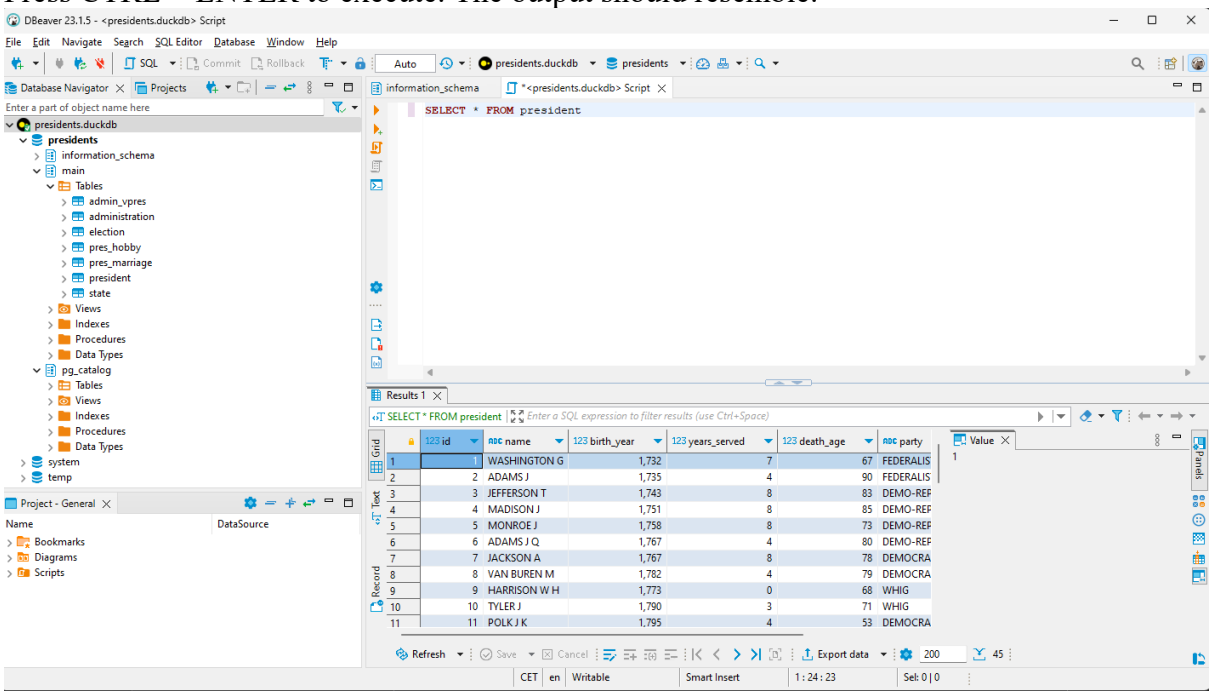
4. Testing Your Setup

Exercises

1. Execute Basic SQL Query: Open SQL Editor in DBeaver, enter the following SQL statement to fetch all records from the `president` table, and execute it.

```
sql
SELECT * FROM president;
```

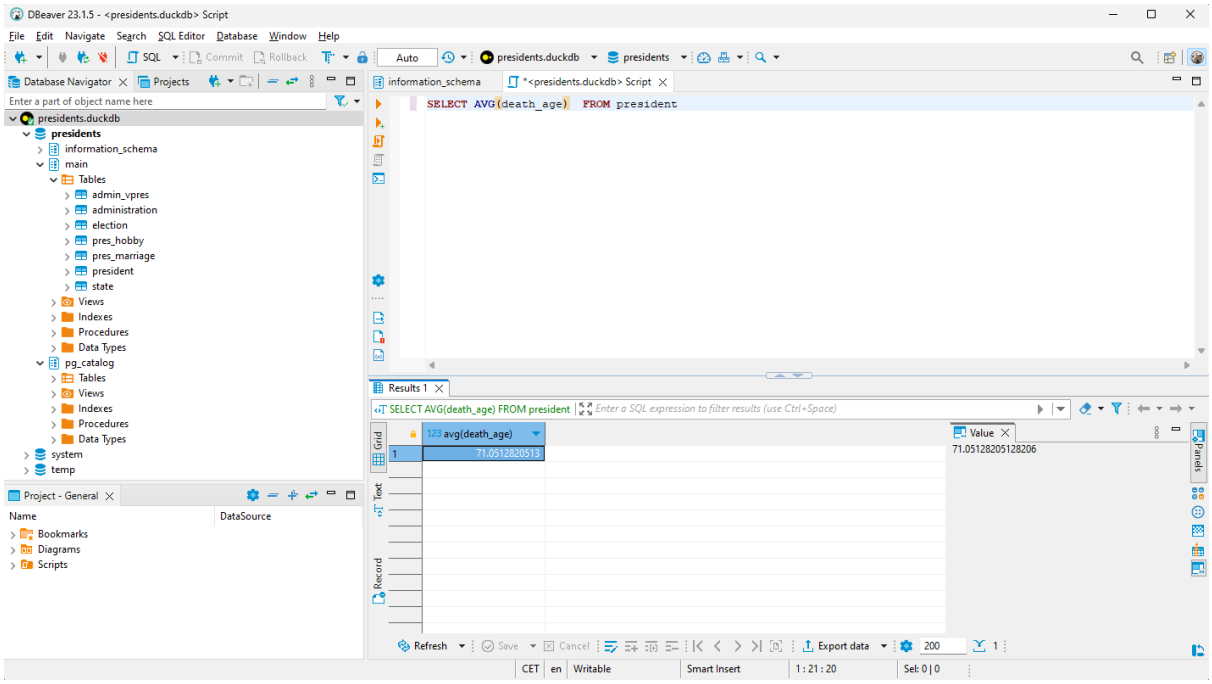
Press CTRL + ENTER to execute. The output should resemble:



2. Aggregate Functions: Use the following SQL query to calculate the average age of presidents.

```
sql
SELECT AVG(death_age) FROM president;
```

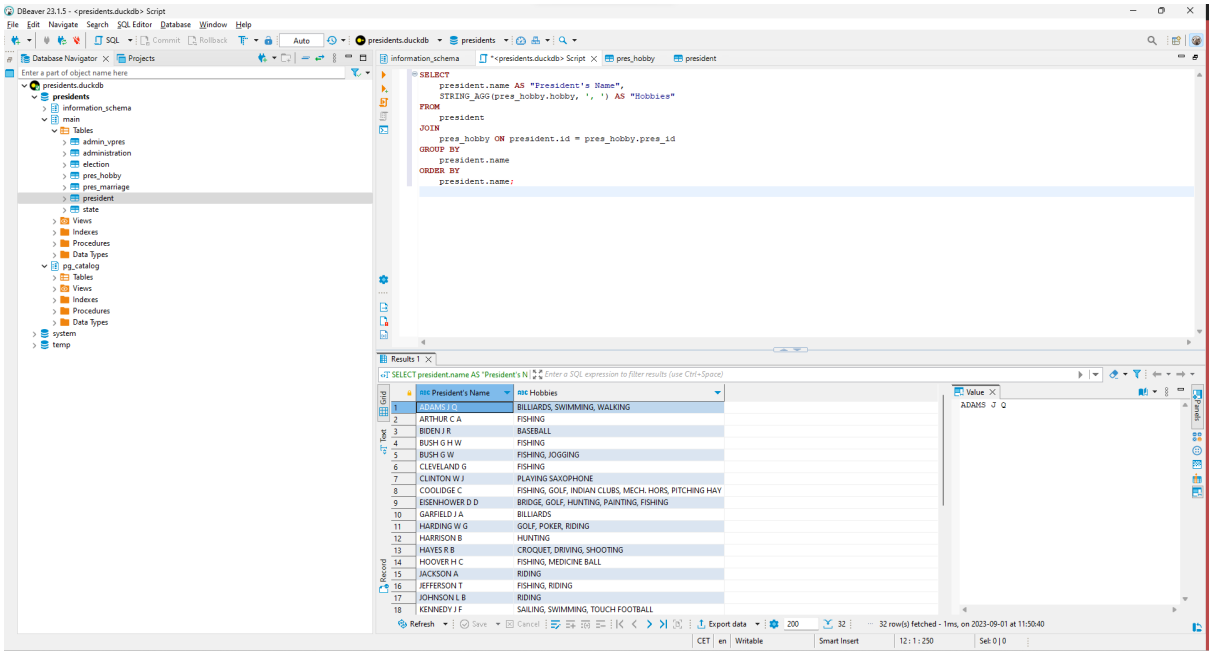
The output should look like:



3. Combining Tables: Use the SQL query below to link presidents with their hobbies.

```
sql
SELECT
  president.name AS "President's Name",
  STRING_AGG(pres_hobby.hobby, ', ') AS "Hobbies"
FROM
  president
JOIN
  pres_hobby ON president.id = pres_hobby.pres_id
GROUP BY
  president.name
ORDER BY
  president.name;
```

The output should resemble:



Conclusion

You should now have a functional DuckDB database and DBeaver installation on your local machine. You've executed basic SQL queries to validate that the setup works as expected. Enjoy diving deeper into SQL with DuckDB and DBeaver!