Hello! This is an introduction video about how the COVID-19 Data Platform works.

First, I will show you how to use the application. With PostgreSQL Server open in the background, just a double click on the “Start.bat” and the Login Manager would appear. Then you enter the username, database name and password and finally click on the “Login” button to Login.

The login process may take about 15s when the application is run on a new computer for the first time, because the application is initializing data tables at this stage.

After a successful login, the Login Manager calls the Query Interface. The user can choose what to query by changing the check boxes’ states, filling the text boxes, and finally clicking the “Query” button. For example, if you want to query for “how many cases worldwide”, just click the “Query” button. You will see the results below. If you want to query for “how many confirmed, recovered and death cases in China on January 22nd, 2020”. Enter the date, tick “Country”, enter “China” and click on the “Query” button.

In the next part, I will briefly explain the source code behind the application. “Start.bat” is a windows batch file. It opens the executable file in the Release directory. So, the application starts at “Program.cs”, which is the main entry point of the application. It creates a Login Manager Form. “Form1.Designer.cs” contains the information about the design of the form and its controls. First, it creates all the controls and set their basic information. For example, font, location, and event handlers. You can see the mouse click event handler registration in the “Login” button part. After control initialization, the application creates a Login Manager form.

When the “Login” button is clicked, the Login Manager reads the data from the text boxes, creates a customized connection string, and try to establish a connection with PostgreSQL using Npgsql. A warning message will be shown if the username, database name or password are incorrect.

“Form2.Designer.cs” contains the design information about the Query Interface, which is more complex than the Login Manager design, but the same in principle.

At the first-time setup, the application reads two text files modified from the “.csv” files in the “Data” directory and insert their data into two data tables, “countries” for epidemic data of different countries and “worldwide” for worldwide data, with “CREATE TABLE” and “INSERT INTO” statements. For convenient, all data types are set to “varchar”, so that the header can be included into the database. “9014” after table name is to prevent replication. If the tables have already been created, the application would skip this process.

While the “Query” button is clicked, the application gathers the input information and generates the corresponding “SELECT” statement for the query. The results are read by a SQL data reader and are added to the output lists.

Finally, when you close the Query Interface, the Login Manager closes the connection and itself. And the application has gone through a complete run. Thank you.