This application is to insert sea temperature data at different depths from the GLOBAL\_MULTIYEAR\_PHY\_001\_030 output of the CMEMS service of the European Union; and in addition, the maximum thermal efficiency data that are calculated using a procedure that is present in the app.

Prerequisites:

- Python3.

- PostgreSQL.

- Created a postgres database called Termica with 3 tables: Temperature (day: date, lev: double, longitude: double, latitude: double, T: double), InitialPoints (day: date, longitude: double, latitude: double, T: double, North: integer) and Efficiency (day: date, lev: double, longitude: double, latitude: double, e: double).

When running the app, a menu appears with 8 options to choose from. The first 6 refer to the steps to be taken into account to calculate and store the thermal efficiency; step 7 will map the efficiency according to the declared date range. Option 8 is to exit the program.

About the thermal efficiency calculation procedure.

1. The app creates a txt file with the temperature data according to the level you specify.

2. It inserts in the Temperature table of the database the file that is declared.

3. The app creates a txt file with the surface temperature data from a format txt file (longitude, latitude) the surface temperature value of the node closest to the coast. It is necessary to declare the direction in which the thermal efficiency will be calculated, there are 4: from south to north for points located on the north coast, from north to south for points on the south coast, from east to west for points on the east coast and west to east for points on the west coast. If the geographic place of study carries calculations in several directions, the different files of the initial points must be made separately and then imported into the database in option 4 at menu.