IronHack week 2 Project

Creating a composite indicator

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01 - Project setup

Picking the “Energy” subject

Brainstorming about an energy related composite indicator

Planning in Jira Software

Look for sources and ways to access their data

TOP 10 COUNTRIES BY ENERGY TRANSITION INVESTMENT

China $266B
U.S. $114B
Germany $47B
U.K. $31B
France $27B
Japan $26B
India $14B
South Korea $13B
Brazil $12B
Spain $11B

TOTAL : $561B

02 - Data:collection

BloombergNEF

Web Scraping a pdf file

Our World in Data

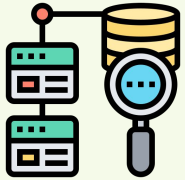
We accessed the open source data via the **Github API** where they distribute it for free

THE WORLD BANK

We used the **python API wrapper - Wbgapi** to consult and download relevant studies and exported them in a csv file

02 - Data:storage

MySQL local library



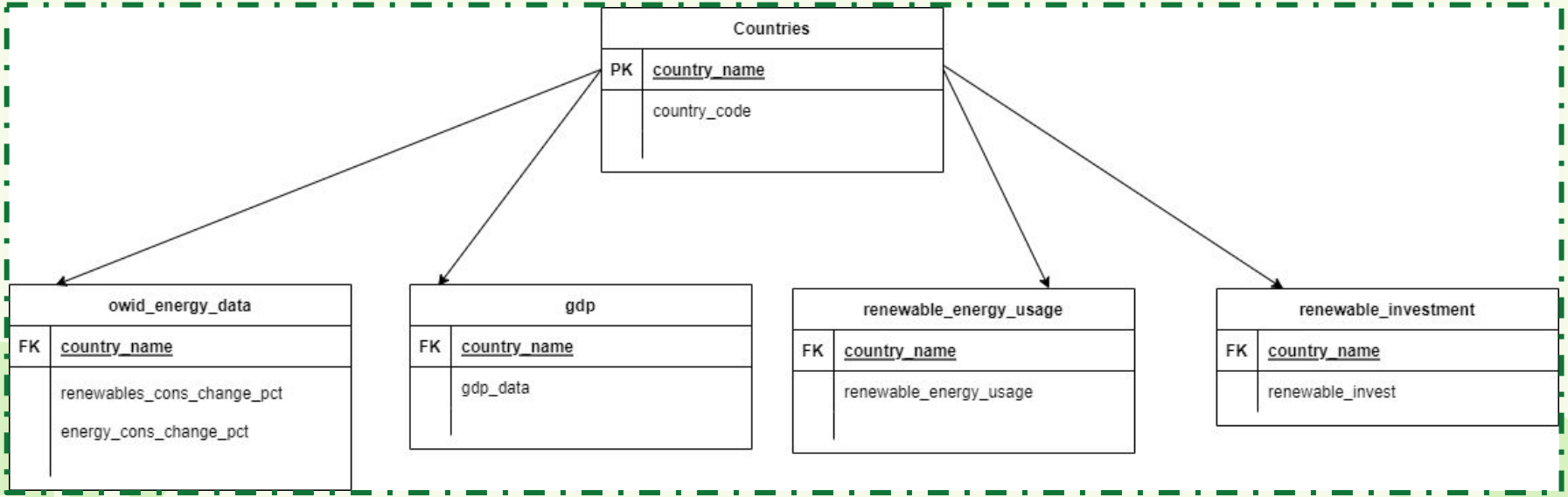
Queries

Creating the central table linking all the other and inserting data

Import Wizard

Helped to automate the implementation of the csv files

02 - Entity Relationship model



03 - Green Initiative Index: Formula

Part in % of renewable energy in total consumption (x4) +

Part of GDP invested in renewable energy in % (x10) +

Evolution in % of the renewable over last 10 years (x0.75) -

Evolution in % of the total consumption of energy over last 10 years (x1.25)

03 - Index calculation:Part I

```
select renewable_investment.country_name,
renewable_energy_usage.renewable_energy_usage*4 + (renewable_investment.renewable_invest/gdp.gdp*100)*10
+ owid_energy_data.renewables_cons_change_pct*0.75 + owid_energy_data.energy_cons_change_pct*1.25 as results
from renewable_investment
```

03 - Index calculation:Part II

```
left join countries
on renewable_investment.country_name = countries.country_name
left join gdp
on countries.country_name = gdp.country_name
left join owid_energy_data
on countries.country_name = owid_energy_data.country_name and owid_energy_data.year = 2022
left join renewable_energy_usage
on countries.country_name = renewable_energy_usage.country_name
order by results DESC;
```

The results

Brazil	203 points
United Kingdom	187 points
China	169 points
South Korea	165 points
Germany	137 points

France	123 points
Spain	112 points
Japan	109 points
India	93 points
United States	83 points

Insights

Brazil - 1st Place

It was a surprise to see Brazil first with our **western** country **bias** but his **power grid is one of the most green** on earth thanks for example to hydroelectric and biomass

China- 3rd Place

Even weighted down by the **increase** of its electric **consumption**, China ranks third thanks to the **amount it invested** and the **growth of renewable energy** in its overall energy mix

USA- Last Place

The US is in a somewhat surprising place because his **consumption grew too much** over the last 10 years and its investment while important is **not up to standard** considering their financial power

04 - Challenges

File size

Importing and inputting queries into huge database was a big challenges

Scraping Protection

Creating the central table linking all the other and inserting data

Calculation in SQL

Calculations combined with multiples left joins were more challenging than anticipated

QUESTIONS & ANSWERS

RESOURCES & ARTICLES

- https://assets.bbhub.io/professional/sites/24/Energy-Transition-Investment-Trends-Exec-Summary-2022.pdf
- https://about.bnef.com/energy-transition-investment/
- https://github.com/owid
- https://datahelpdesk.worldbank.org/knowledgebase/articles/889392-about-the-indicators-api-documentation
- https://www.capital.fr/economie-politique/solaire-eolien-linde-lance-le-plus-vaste-parc-denergies-renouvelables-au-monde-1388691
- https://www.unesco.org/reports/science/2021/fr/brazil