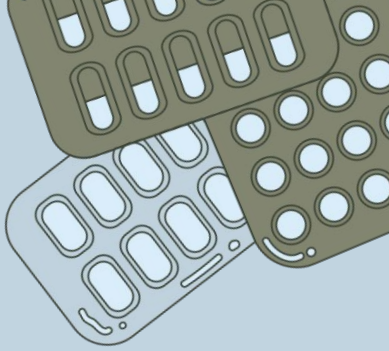

PHARMACEUTICAL SPENDING BY OECD COUNTRIES 1970 - 2015

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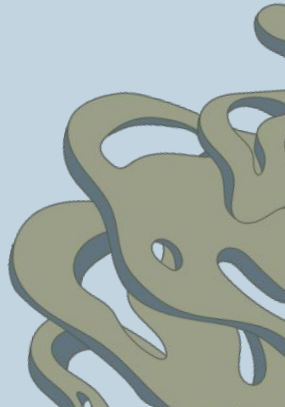
INTRODUCTION

- The Organization for Economic Co-operation and Development (OECD) is a unique forum where the governments of 37 democracies with market-based economies collaborate to develop policy standards to promote sustainable economic growth.
- As a part of this project, we will determine the recent trend in pharmaceutical spending (on prescription medicines and self-medication) by these countries for the period of 1970 - 2016.

Pharmaceutical Drug Spending has been calculated as the following indicators -

- Total spending by each country in a specific year (in millions)
- as a percentage of the total health spending/ share of the total health spending,
- Total spending as a Percentage of GDP
- by per capita (USD) (using economy-wide PPPs)



INTRODUCTION

In this project, we will source data, clean data and upload it onto PostgreSQL.

Then create a multipage Dash App that displays the analysed data in the form of interactive visualisations that can be selected by years, countries, and continents.

DATA EXTRACTION AND CLEANING

- The datasets were acquired from datahub.io and data.oecd.org.

These were the steps taken to clean the data:

- Latitude and Longitude columns were added with the corresponding coordinates for each country
- The "FLAG_CODES" column was dropped due to insignificant data
- The Columns were renamed to ensure uniformity
- The "Year" column's datatype was changed to time

GEO-DATA

- Our original dataset lacked the coordinate data we required. We were going off country codes such as AUS for Australia.
- Our project required coordinate data and so we needed to find the lat/long data for all 46 countries.
- We focused this on the capital city of each country and then created a dataframe to merge with our original data.

AUS	Australia
AUT	Austria
BEL	Belgium
BGR	Bulgaria
BRA	Brazil
CAN	Canada
CHE	Switzerland
CHL	Chile
COL	Colombia

Country	Continent	Capital	Latitude	Longditude
AUS	Oceania	Canberra	-35.26666667	149.133333
AUT	Europe	Vienna	48.2	16.366667
BEL	Europe	Brussels	50.83333333	4.333333
BGR	Europe	Sofia	42.68333333	23.316667

DATA LOADING

```sql
--- create table named pharm_data
CREATE TABLE pharm_data(
    country VARCHAR,
    year INTEGER,
    percent_of_health_spending DECIMAL,
    percent_of_gross_domestic_product DECIMAL,
    usd_per_capita DECIMAL,
    total_spending_in_millions DECIMAL
);

--- create table named latlongdata
CREATE TABLE latlongdata(
    Country VARCHAR,
    Capital VARCHAR,
    Latitude DECIMAL,
    Longitude DECIMAL
);

SELECT * FROM pharm_data;
SELECT * FROM latlongdata;
--- inner join latlongdata table to pharm_data table to create one table
SELECT *
FROM pharm_data
INNER JOIN latlongdata
ON pharm_data.location = latlongdata.location;
```

- Two tables were created: pharm_data and latlongdata

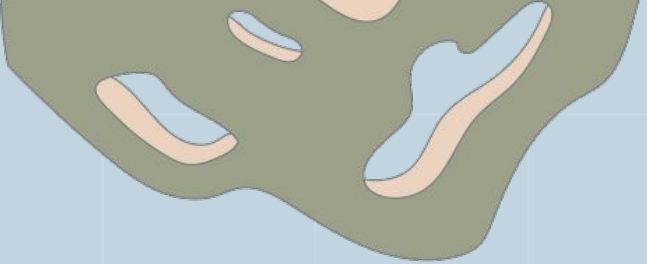
- The tables were merged to make them easier to work

RESULTS FOR THE COMBINED TABLES

	location character varying	time integer	pc_healthxp numeric	pc_gdp numeric	usd_cap numeric	flag_codes character varying	total_spend numeric	location character varying	capital character varying	latitude numeric	longditude numeric
1	AUS	2014	14.386	1.306	616.997	[null]	14475.18	AUS	Canberra	-35.26666667	149.133333
2	AUS	2013	14.989	1.32	627.402	[null]	14503.87	AUS	Canberra	-35.26666667	149.133333
3	AUS	2012	15.308	1.336	582.874	[null]	13247.71	AUS	Canberra	-35.26666667	149.133333
4	AUS	2011	15.311	1.315	580.921	[null]	12977.79	AUS	Canberra	-35.26666667	149.133333
5	AUS	2010	15.63	1.324	563.857	[null]	12422.76	AUS	Canberra	-35.26666667	149.133333
6	AUS	2009	15.535	1.334	553.724	[null]	12011.21	AUS	Canberra	-35.26666667	149.133333
7	AUS	2008	15.412	1.273	510.172	[null]	10840.75	AUS	Canberra	-35.26666667	149.133333
8	AUS	2007	15.201	1.225	485.887	[null]	10119.86	AUS	Canberra	-35.26666667	149.133333
9	AUS	2006	15.276	1.219	461.821	[null]	9558.72	AUS	Canberra	-35.26666667	149.133333
10	AUS	2005	15.218	1.213	432.513	[null]	8821.02	AUS	Canberra	-35.26666667	149.133333
11	AUS	2004	15.656	1.269	429.882	[null]	8652.41	AUS	Canberra	-35.26666667	149.133333
12	AUS	2003	15.761	1.244	401.302	[null]	7984.06	AUS	Canberra	-35.26666667	149.133333
13	AUS	2002	15.374	1.213	373.044	[null]	7330.84	AUS	Canberra	-35.26666667	149.133333
14	AUS	2001	16.059	1.236	364.771	[null]	7081.3	AUS	Canberra	-35.26666667	149.133333
15	AUS	2000	15.702	1.194	338.665	[null]	6486.45	AUS	Canberra	-35.26666667	149.133333
16	AUS	1999	14.679	1.075	291.589	[null]	5518.61	AUS	Canberra	-35.26666667	149.133333

DATA VISUALISATION - THE DASHBOARD

WHAT DOES IT MEAN?



CONCLUSIONS

ANY QUESTIONS?

THANK YOU!

REFERENCES

- https://datahub.io/core/pharmaceutical-drug-spending
- https://data.oecd.org/healthres/pharmaceutical-spending.htm