

PROJECT 3 DATA VISUALIZATIONS (FINANCE) _ GROUP 2 PROPOSAL

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GitHub Repository Link: [Click here](#)

Project Title: HOW TO COMBAT INFLATION

(Real Overview of Budget and Alternatives (ROBA) Dashboard)

The aim of this project is to tell a story by creating interactive dashboard that first examines consumer price index (CPI) inflation rate among various categories, next provides an interactive map visualization of the nearest petrol stations & supermarket locations where these goods can be purchased so that users can make an informed choice of the best priced location.

Research Topic & Rationale:

MOTIVATION: -

Australia is experiencing record levels of inflation in 2022 as compared to previous decade because of knock-on effects from the COVID-19 pandemic, which is partly due to the government providing long-term emergency stimulus packages, such as the [JobKeeper payments](#) and [HomeBuilder grants](#).

We are interested in Consumer Price Index CPI inflation rate. The Reserve bank of Australia's inflation target is to keep annual consumer price inflation between 2 and 3 per cent, on average, over time. Although the federal government and Reserve Bank have forecast that inflation will peak at 7.75% in the December quarter of 2022 this hit in inflation rate relates to our motivation behind choosing this project topic

OVERVIEW OF DATA: -

In Australia, the most important categories in the consumer price index are housing (23 percent of the total weight), food and non-alcoholic beverages (17 percent), transport (11 percent), furnishings, household equipment and services (9 percent), alcohol and tobacco (9 percent), recreation and culture (9 percent), health (7 percent) and insurance and financial services (6 percent). Clothing and footwear, education, and communication account for remaining 10 percent of total weight. The dashboard contains following visualization

First visualization: Monthly Consumer Price Index (CPI) indicator

About the data: - The data link is mentioned in below table

The monthly Consumer Price Index (CPI) indicator provide a timelier indication of inflation

Unit of measure: Index Percent.

Geographic coverage: Australia/State.

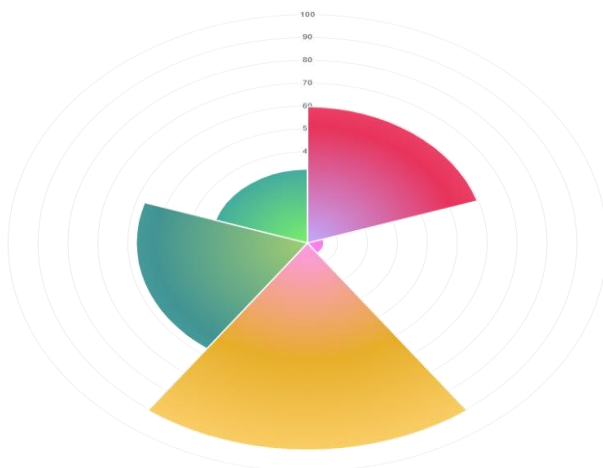
Dimensions: Index

Frequency: Monthly

Economy: price indexes and inflation

Explanation: -

Using data from the Australian Bureau of Statistics (ABS) on Monthly Consumer Price Index and other metrics on prices of goods, the dashboard will provide a plot of which categories of a user's budget will be most impacted by inflation. These will be represented on a radial gradient pie chart (sample pictured below), with the slices of the pie representing the proportion of a user's budget for the respective category of goods and the polar indices representing percentage price increase.

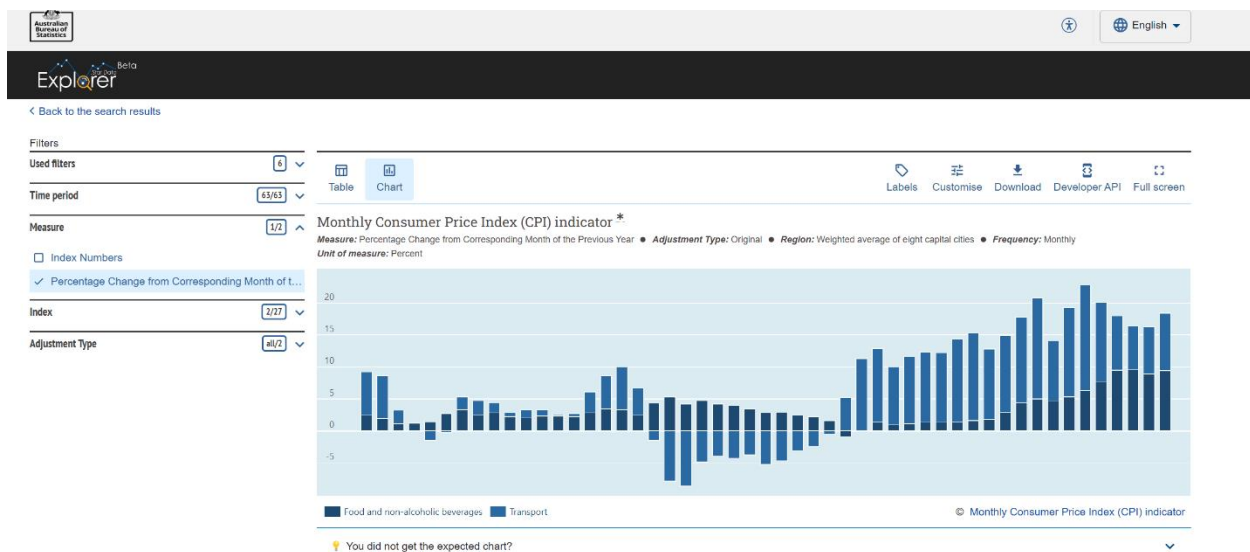


Second visualization: Cpi Index for Food and Transport

For second visualization, we decided to choose two most significant categories (Food and non-alcoholic beverages, Transport). We may further visualize it through bar charts on the basis of index number and percentage changes from corresponding month of previous period

About the data:-

We use the same ABS Dataset (mentioned in below table) just by performing a filtering and cleaning process according to our requirements. The below bar chart is represented (as a sample).



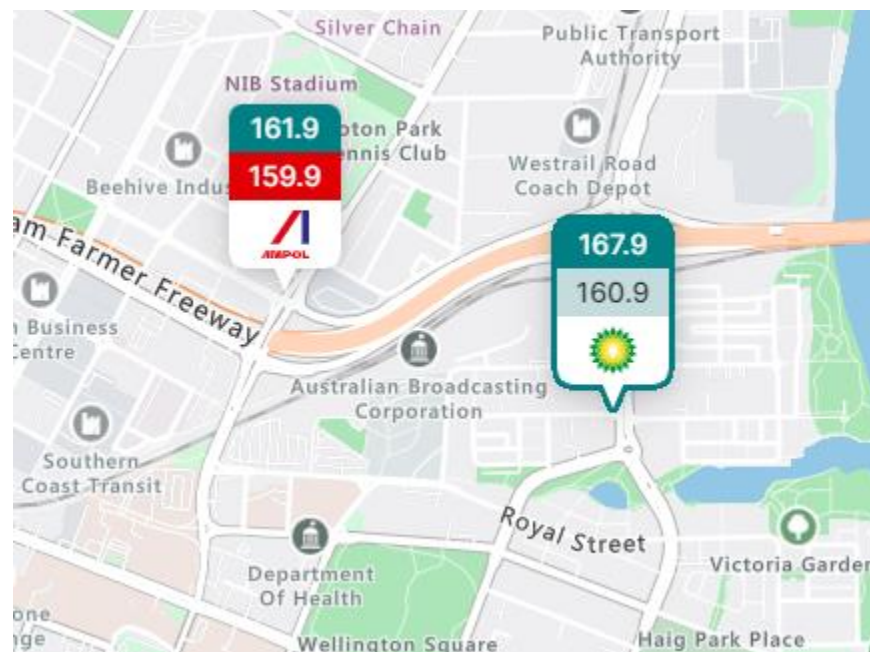
Third visualization: Map visualization of the patrol station

About the data:-

We will fetch our data by using Fuel Watch API or fuel price WA.

Explanation: -

We will plan to draw a base map, overlays and markers. users will easily toggle between their preferred best choices. The map be provided with a selection of options if they provide their location (i.e., *suburb*). For example, if fuel has been shown to be one of the categories most likely to be impacted by price increases, the dashboard will display a map visualisation of the petrol stations (as markers) that are closest to the user's location and show the latest prices on petrol in a pop-up textbox (*sample shown below*). The initial build will focus on providing alternatives for fuel, and different views will be used to expand the radius of displayed alternatives (i.e., include options that are further away from the user's location).



Fourth and Fifth visualization:

- Bar chart for supermarket price comparison
- Map for locating best price supermarkets

About the data: -

The prices of products will be scrapped from supermarket websites. ,

Explanation: -

Our plan to scrape 100 common household items available at two of the biggest Australian supermarkets. We may choose between Coles, Woolworths, Aldi, and IGA

In the event that data cannot be scrapped from Australian supermarket websites, the app will be built using data from America or existing Kaggle dataset

Potential Data sources (and alternatives):

Data Sources	Link	Alternatives
Fuel Watch API	Fuel Prices WA Fuel Price Australia API	USA Super Markets
ABS Monthly Consumer Price Index Indicator	CPI Inflation Also see ABS sources cited in: Personal rate of Inflation	CPI USA
Supermarket Websites (at least 2)	Coles Wool Worth's IGA	Existing Datasets: Super Markets USA Sites: USA Super Markets

Technologies:-

- Leaflet.js
- Chart.js (*JS Library not covered in course*)
- MongoDB
- HTML/CSS
- Python Flask API