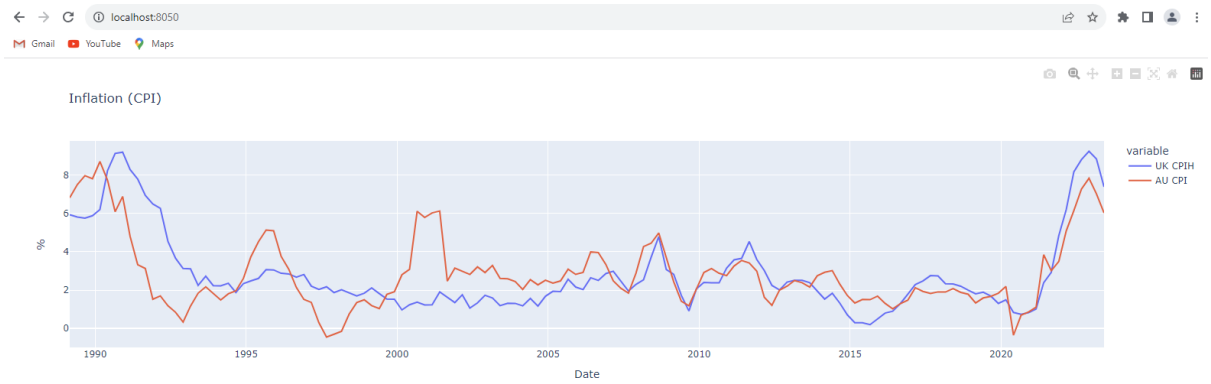
Technical Python Screening - Inflation Dashboard

We would like a very simple python Dash app that plots UK and Australian annualised inflation rates. The python code should:

1) Download data from the sources outlined below
2) Format the data
3) Plot the required chart in a dash app

DESIRED OUTPUT

Your dash app should as a minimum produce a line graph similar to the one below, plotting both UK and AU inflation time series on the same chart as a percentage



DATA AVAILABILITY

UK and Australian Inflation indices are freely available. The REST API details are below.

UK CPIH:

The UK inflation index can be sourced using the details below. The response will contain CSV data.

GET URL: https://www.ons.gov.uk/generator

QUERY PARAMETERS:

uri: /economy/inflationandpriceindices/timeseries/l522/mm23

format: csv

EXAMPLE:

curl "https://www.ons.gov.uk/generator?format=csv&uri=/economy/inflationandpriceindices/timeseries/l522/mm23"

AU CPI:

The Australian inflation index can be sourced using the details below. The response will contain CSV data.

GET URL: https://api.data.abs.gov.au/data/CPI/1.10001.10.50.Q

QUERY PARAMETERS:

format: csv

EXAMPLE:

curl https://api.data.abs.gov.au/data/CPI/1.10001.10.50.Q?format=csv

INFLATION CALCULATION

The APIs will index data. This should be converted to an inflation rate. For example, if the Australian Index has the following values:

2022-Q2: 126.1

2023-Q2: 133.7

The annualised inflation rate for 2023-Q2 is (133.7 – 126.1) / 126.1 == 0.0602

EXTRA CREDIT

Imagine this code will be deployed into a production environment. Extra credit will be given if your solution demonstrates the following:

- How will it be distributed (pip package?)
- How will you test it?
- What are your external dependencies?

Extra consideration should be given to the formulation of a robust design.