**Problem Statement**

You are working with the National Statistical Office, which is equipped to release inflation numbers in India. As an analyst, you are provided with CPI data and are equipped to find out insights from the data. Your senior wants you to find key trends and deep dive into the data to answer the following questions:

1. Based on the latest month's data, identify the contribution of different broader categories (food, energy, transportation, education, etc.) towards the CPI basket. Broader categories (buckets) can be created by combining similar categories into one bucket. Example, meals, beverages, cereals can be clubbed to create food category, etc.

* Which broader category has the highest contribution towards CPI calculation?
* Contribution is calculated by evaluating underlying index values for broader category and should add to 100% when contribution from different broader categories are added.

1. A trend of year-on-year increase in CPI (rural + urban) inflation starting in 2017 for the entire basket of products combined.

* Create a graph depicting the growth rate year-on-year and identify the year with highest inflation rate.
* Highlight the reason why the year has the highest inflation (based on research).

1. With India's retail inflation reaching a 3-month high of 5.55% in November 2023, largely due to sharp rise in food prices, analyze the following for 12 months ending May 23:

* Investigate trends in prices of broader food bucket category and evaluate month-on-month changes. Highlight month with highest and lowest food inflation.
* Identify absolute changes in inflation over the same 12-month period and identify biggest individual category contributor (only within broader food category) towards inflation.

1. Investigate how the onset and progression of COVID-19 pandemic affected inflation rates in India. Analyze the impact of key pandemic milestone (first lockdown) on the CPI inflation %, specially focus on categories like healthcare, food and essential services.

Hint: you can consider March 2020 as the onset of COVID and can compare the inflation trend before and after March 20 to see if there is a change in inflation percent before and after.

1. Investigate how major global economic events (like imported crude oil and price fluctuations) have influenced India's inflation. This can include analysis of imported goods and their price trends

* For this purpose, focus only on the imported oil price fluctuations for years 2021 to 2023 (month-on-month).
* Identify trends in oil price change with change in inflation prices of all the categories and identify category whose inflation prices strongly changes with fluctuations in imported oil price. (Hint: you can use =correl function).