# Technical Test

## Objective:

Main Objective :

1. Data Collection
2. Data Preprocessing
3. Data Analysis

Side quest :

1. Data Visualization
2. Data Modeling

## Background Problem

The inflation rate is an important indicator of a country's economic health, as high and unstable inflation can have a significant impact on the socio-economic conditions of a community. For example, inflation can affect interest rates, which in turn can directly or indirectly affect the demand for credit.

[Indonesian Inflation and GDP Data (kaggle.com)](https://www.kaggle.com/datasets/billycemerson/indonesian-inflation-and-gdp-data)

[Data Inflasi (bi.go.id)](https://www.bi.go.id/id/statistik/indikator/data-inflasi.aspx)

## Task

Generate insights regarding the inflation rate in Indonesia, from data collection to modelling done using the **Python** programming language.

* **Data Collection**

Data sources can come from anywhere (including not official party like kaggle). One of the official is from the [BPS](https://www.bps.go.id/subject/3/inflasi.html#subjekViewTab2) website or BI website. The data can be enriched with other data such as data on GDP growth rates, inflation rates in other countries, or BI interest rates.

* **Data Preprocessing and Analysis**

Data processing and analysis are done using Python for example by using the Pandas library for tasks such as cleaning, transforming, and aggregating data.

* **Data Visualization**

When it comes to data visualization, the choice of what to visualize is flexible and can be based on insights gained during exploration or anything deemed interesting to convey. Provide a brief explanation for each visualization.

Data visualization can use matplotlib or seaborn for static visualization, for interactive ones you can use plotly or altair.

In addition to exploration, data visualization is used to convey the insight.

An example of a visualization related to inflation can be seen in [Databoks](https://databoks.katadata.co.id/tags/inflasi).

*[Optional] Can add dashboards created using BI Tools such as Streamlit, Tableau Public etc. (links can be shared).*

* **Data Modeling**

provide further insight by making predictions on the inflation data, such as through regression or forecasting techniques for the next several periods.

## Submission

* The code and process are well documented in the form of a Jupyter notebook (.ipynb file).
* Image file (visualization result) in the form of .jpg, .png or the appropriate file format.
* The code and associated files can also be shared via a Github repository (with a link included).

## Notes

There are many libraries and tools available for data analysis and visualization in Python, and the choice of which ones to use is not limited to those mentioned earlier. Being creative and using a variety of libraries can help make the presentation of data and insights more interesting and engaging. Some other popular libraries for data analysis and visualization in Python include:

1. Jupyter
2. Pandas
3. Matplotlib, Seaborn for visualization
4. Scikit-Learn, pmdarima, prophet (facebook) for modeling

# Good Luck!