In addition to your Project Report, you must include a one-page document that lists the project specifications and solution architecture (Solution Design Document). This document should be understandable by someone with no programming background – imagine it as a business case for your solution that needs to be signed off by your manager before you can build and deploy it. It should list out specific areas of the code and what it is meant to address/achieve. Remember that though your code would be very familiar to you, it is very difficult for a third person to directly read the code and understand it.

**GitHub Repository**

An online repository for the current project is publicly available at the below GitHub address.

<https://github.com/rks972633/MScFE_Capstone>

Notebooks:

1. Download Data

Notebook named Data Download is used to download a time series data of CDX.NA.IG and save it as a csv file into the Data folder.

Requirements: pip install

# Import required libraries

import warnings

warnings.filterwarnings('ignore')

from pandas\_datareader import data

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

from scipy.stats import norm

import os

from xbbg import blp, pipeline

np.random.seed(0)

from xbbg import blp, pipeline

import datetime

# BDay is business day, not birthday...

from pandas.tseries.offsets import BDay

today = datetime.datetime.today()

1. Exploratory

import warnings

warnings.filterwarnings('ignore')

import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

import hurst as hs

import os

from statsmodels.tsa.seasonal import seasonal\_decompose

np.random.seed(0)

from scipy.stats import norm

from statsmodels.tsa.stattools import adfuller

from statsmodels.graphics.tsaplots import plot\_acf

from statsmodels.graphics.tsaplots import plot\_pacf

1. Hurst Exponent

import hurst as hs

1. LSTM model

from keras.models import Sequential

from keras.layers import LSTM, Dense

from datetime import datetime

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