**Implement program to apply moving average smoothing for data preparation and time series forecasting**

**Aim: To Implement program to apply moving average smoothing for data preparation and time series forecasting**

**Step 1: import files , libraries and read the csv file.**

**from google.colab import files**

**import pandas as pd**

**import io**

**uploaded = files.upload()**

**uploaded\_filename = list(uploaded.keys())[0]**

**try:**

**df = pd.read\_csv(io.BytesIO(uploaded[uploaded\_filename]))**

**except KeyError:**

**print(f"Error: '{uploaded\_filename}' not found among uploaded files. Please upload the correct file.")**

**raise**

**Step 2: deploy moving average function**

**def moving\_average\_smoothing(data, window\_size):**

**if isinstance(data, list):**

**data = pd.Series(data)**

**return data.rolling(window=window\_size, center=True).mean()**

**Step 3: display the moving average data**

**if 'meantemp' in df.columns:**

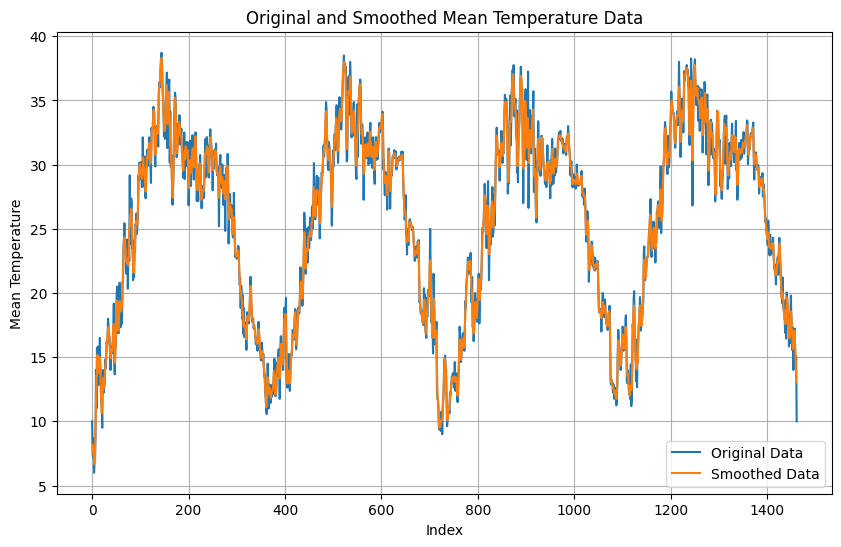
**df['Smoothed\_Value'] = moving\_average\_smoothing(df['meantemp'], window\_size=3)**

**print(df)**

**else:**

**print("Error: 'meantemp' column not found in the DataFrame. Please ensure the column exists and is named 'meantemp'.")**

**Step 4 : Visualize the data**

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