**EXP: 8 Create an ARIMA model for time series forecasting**

**Aim:** To create an arima model for time series forecasting using autism screening dataset

**Procedure:**

**1.Import the necessary libraries:**

import pandas as pd

import matplotlib.pyplot as plt

from statsmodels.tsa.arima.model import ARIMA

from pandas.plotting import register\_matplotlib\_converters

register\_matplotlib\_converters()

**2. Load the dataset**

df = pd.read\_csv("autism\_screening.csv")

**3. Visualize the data**

monthly\_positive.plot(title="Monthly Positive Autism Screenings")

plt.xlabel("Month")

plt.ylabel("Number of Positive Screenings")

plt.show()

**4. Check for stationarity (ADF test)**

from statsmodels.tsa.stattools import adfuller

result = adfuller(monthly\_positive.dropna())

print(f"ADF Statistic: {result[0]}")

print(f"p-value: {result[1]}")

**5. Fit ARIMA model and Print the summary of the model**

model = ARIMA(monthly\_positive, order=(1, 1, 1)) # ARIMA(p,d,q)

model\_fit = model.fit()

print(model\_fit.summary())

**6. Visualize the forecast**

monthly\_positive.plot(label='Actual', color='blue')

forecast\_series.plot(label='Forecast', color='red', linestyle='--')

plt.title("Forecast of Positive Screenings for Autism")

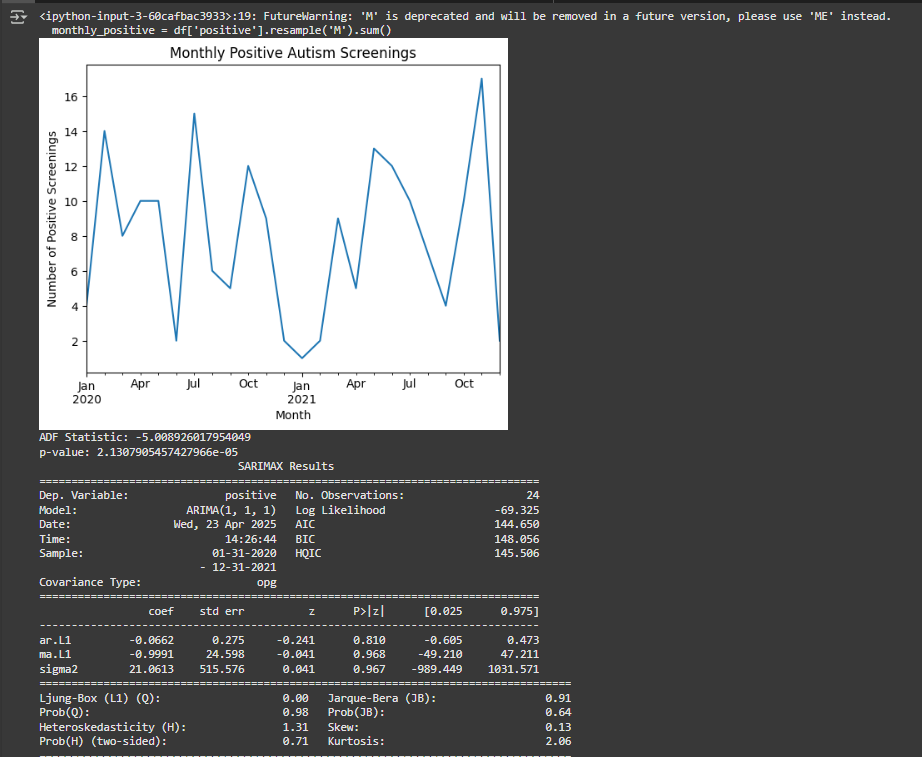
plt.xlabel("Date")

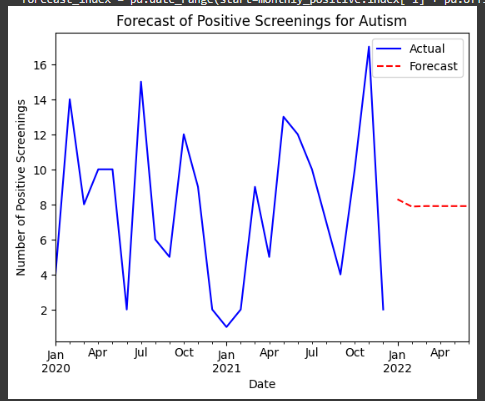
plt.ylabel("Number of Positive Screenings")

plt.legend()

plt.show()

**OUTPUT:**

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**Result:** This program to develop an arima model for time series forecasting using autism screening dataset implemented and executed successfully

