

libraries and data import

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In [13]: import pandas as pd
from matplotlib import pyplot as plt
df = pd.read_csv('synthetic_sales.csv')
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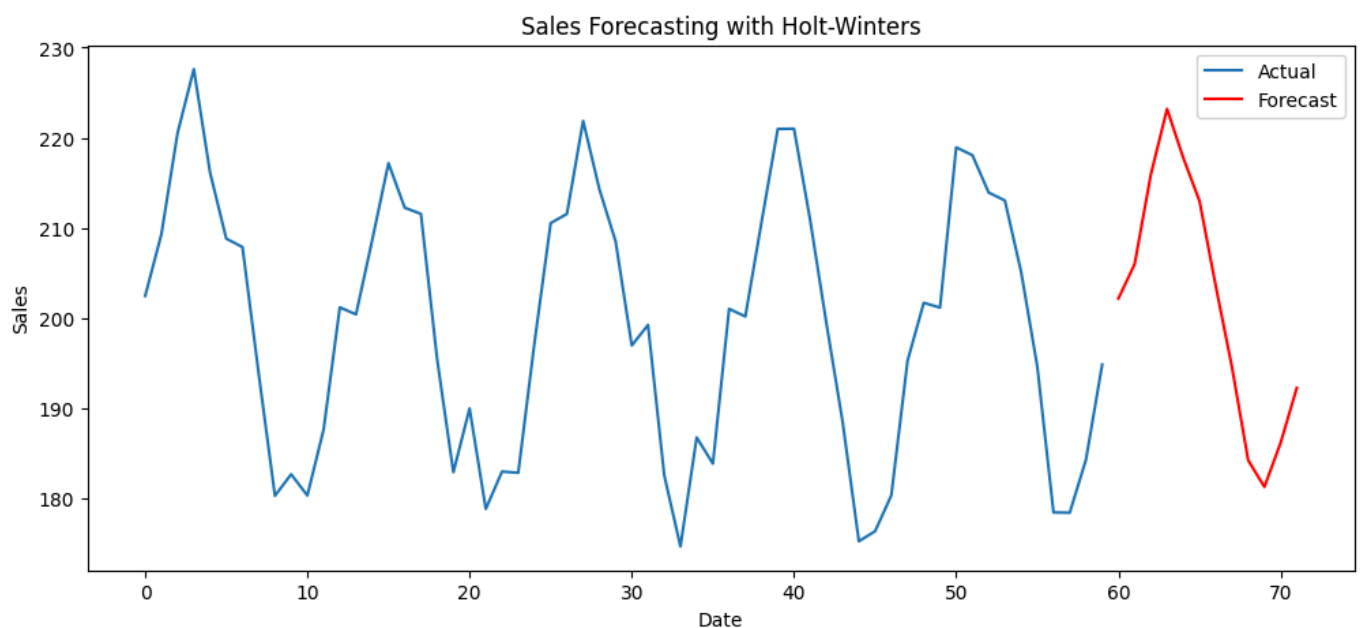
Holt-Winters Exponential Smoothing

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In [ ]: from statsmodels.tsa.holtwinters import ExponentialSmoothing

# Apply forecasting model (Holt-Winters Exponential Smoothing)
model = ExponentialSmoothing(df['Sales'], trend="add", seasonal="add", seasonal_period
fit = model.fit()

# Forecast next 12 months
forecast = fit.forecast(12)**Holt-Winters Exponential Smoothing**

# Plot actual vs forecast
plt.figure(figsize=(12,5))
plt.plot(df['Sales'], label="Actual")
plt.plot(forecast, label="Forecast", color='red')
plt.title("Sales Forecasting with Holt-Winters")
plt.xlabel("Date")
plt.ylabel("Sales")
plt.legend()
plt.show()
```



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In [ ]:
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