In [27]:
```
!pip install prophet
```

```
Requirement already satisfied: prophet in c:\users\buyt2\anaconda3\lib\site-packages
(1.2.1)
Requirement already satisfied: cmdstanpy>=1.0.4 in c:\users\buyt2\anaconda3\lib\site
-packages (from prophet) (1.3.0)
Requirement already satisfied: numpy>=1.15.4 in c:\users\buyt2\anaconda3\lib\site-pa
ckages (from prophet) (2.1.3)
Requirement already satisfied: matplotlib>=2.0.0 in c:\users\buyt2\anaconda3\lib\sit
e-packages (from prophet) (3.10.0)
Requirement already satisfied: pandas>=1.0.4 in c:\users\buyt2\anaconda3\lib\site-pa
ckages (from prophet) (2.2.3)
Requirement already satisfied: holidays<1,>=0.25 in c:\users\buyt2\anaconda3\lib\sit
e-packages (from prophet) (0.87)
Requirement already satisfied: tqdm>=4.36.1 in c:\users\buyt2\anaconda3\lib\site-pac
kages (from prophet) (4.67.1)
Requirement already satisfied: importlib_resources in c:\users\buyt2\anaconda3\lib\s
ite-packages (from prophet) (6.5.2)
Requirement already satisfied: python-dateutil<3,>=2.9.0.post0 in c:\users\buyt2\ana
conda3\lib\site-packages (from holidays<1,>=0.25->prophet) (2.9.0.post0)
Requirement already satisfied: six>=1.5 in c:\users\buyt2\anaconda3\lib\site-package
s (from python-dateutil<3,>=2.9.0.post0->holidays<1,>=0.25->prophet) (1.17.0)
Requirement already satisfied: stanio<2.0.0,>=0.4.0 in c:\users\buyt2\anaconda3\lib
\site-packages (from cmdstanpy>=1.0.4->prophet) (0.5.1)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\buyt2\anaconda3\lib\site
-packages (from matplotlib>=2.0.0->prophet) (1.3.1)
Requirement already satisfied: cycler>=0.10 in c:\users\buyt2\anaconda3\lib\site-pac
kages (from matplotlib>=2.0.0->prophet) (0.11.0)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\buyt2\anaconda3\lib\sit
e-packages (from matplotlib>=2.0.0->prophet) (4.55.3)
Requirement already satisfied: kiwisolver>=1.3.1 in c:\users\buyt2\anaconda3\lib\sit
e-packages (from matplotlib>=2.0.0->prophet) (1.4.8)
Requirement already satisfied: packaging>=20.0 in c:\users\buyt2\anaconda3\lib\site-
packages (from matplotlib>=2.0.0->prophet) (24.2)
Requirement already satisfied: pillow>=8 in c:\users\buyt2\anaconda3\lib\site-packag
es (from matplotlib>=2.0.0->prophet) (11.1.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\buyt2\anaconda3\lib\site
-packages (from matplotlib>=2.0.0->prophet) (3.2.0)
Requirement already satisfied: pytz>=2020.1 in c:\users\buyt2\anaconda3\lib\site-pac
kages (from pandas>=1.0.4->prophet) (2024.1)
Requirement already satisfied: tzdata>=2022.7 in c:\users\buyt2\anaconda3\lib\site-p
ackages (from pandas>=1.0.4->prophet) (2025.2)
Requirement already satisfied: colorama in c:\users\buyt2\anaconda3\lib\site-package
s (from tqdm>=4.36.1->prophet) (0.4.6)
```

In [28]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

In [29]:
```
df = pd.read_csv("E:\\Sample - Superstore.csv",encoding="latin1")
df.head()
```

Out[29]:

	Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	Countr
0	1	CA-2016-152156	11/8/2016	11/11/2016	Second Class	CG-12520	Claire Gute	Consumer	Unite Stat
1	2	CA-2016-152156	11/8/2016	11/11/2016	Second Class	CG-12520	Claire Gute	Consumer	Unite Stat
2	3	CA-2016-138688	6/12/2016	6/16/2016	Second Class	DV-13045	Darrin Van Huff	Corporate	Unite Stat
3	4	US-2015-108966	10/11/2015	10/18/2015	Standard Class	SO-20335	Sean O'Donnell	Consumer	Unite Stat
4	5	US-2015-108966	10/11/2015	10/18/2015	Standard Class	SO-20335	Sean O'Donnell	Consumer	Unite Stat

5 rows × 21 columns

In [30]:
```
df['Order Date'] = pd.to_datetime(df['Order Date'])
df = df[['Order Date', 'Sales']]
df.isnull().sum()
```

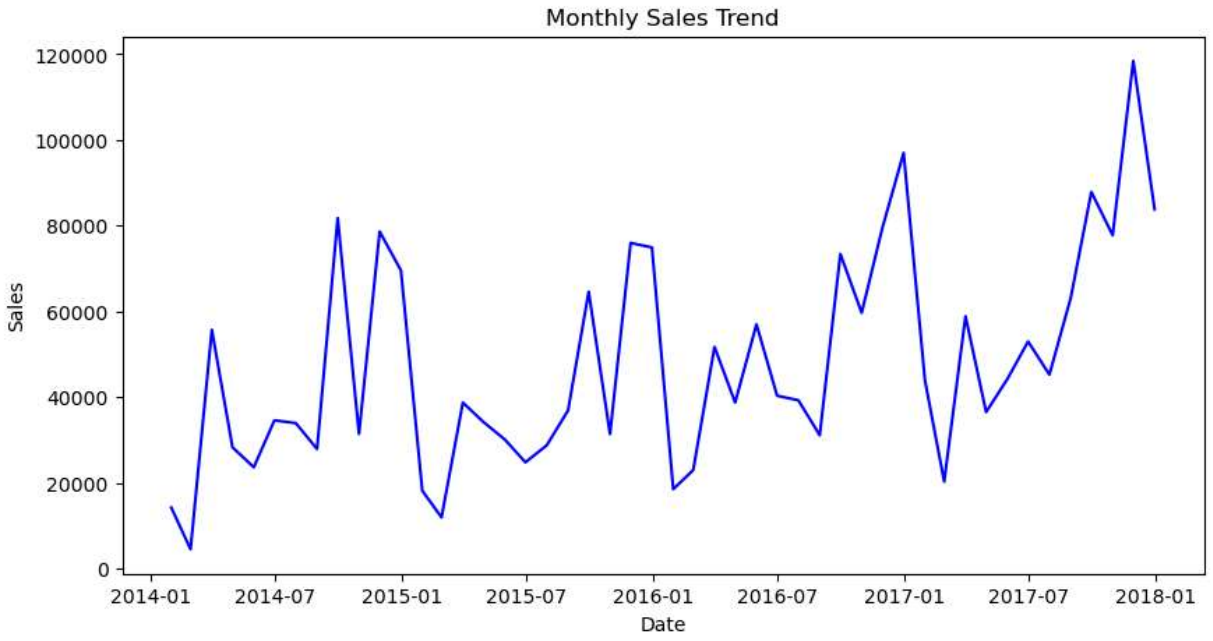
Out[30]:
```
Order Date    0
Sales         0
dtype: int64
```

In [31]:
```
df = df.sort_values('Order Date')
df.set_index('Order Date', inplace=True)
monthly_sales = df.resample('ME').sum()
monthly_sales.head()
```

Out[31]:

Order Date	Sales
2014-01-31	14236.895
2014-02-28	4519.892
2014-03-31	55691.009
2014-04-30	28295.345
2014-05-31	23648.287

In [32]:
```
plt.figure(figsize=(10,5))
plt.plot(monthly_sales, color='blue')
plt.title("Monthly Sales Trend")
plt.xlabel("Date")
plt.ylabel("Sales")
plt.show()
```



In [33]:
```
monthly_sales['Month'] = monthly_sales.index.month
monthly_sales['Year'] = monthly_sales.index.year
monthly_sales.head()
```

Out[33]:

Order Date	Sales	Month	Year
2014-01-31	14236.895	1	2014
2014-02-28	4519.892	2	2014
2014-03-31	55691.009	3	2014
2014-04-30	28295.345	4	2014
2014-05-31	23648.287	5	2014

In [34]:
```
prophet_df = monthly_sales.reset_index()
prophet_df = prophet_df[['Order Date','Sales']]
prophet_df.columns = ['ds','y']
prophet_df.head()
```

Out[34]:

	ds	y
0	2014-01-31	14236.895
1	2014-02-28	4519.892
2	2014-03-31	55691.009
3	2014-04-30	28295.345
4	2014-05-31	23648.287

In [35]:
```
from prophet import Prophet

model = Prophet()
model.fit(prophet_df)
```

```
20:20:04 - cmdstanpy - INFO - Chain [1] start processing
20:20:05 - cmdstanpy - INFO - Chain [1] done processing
```

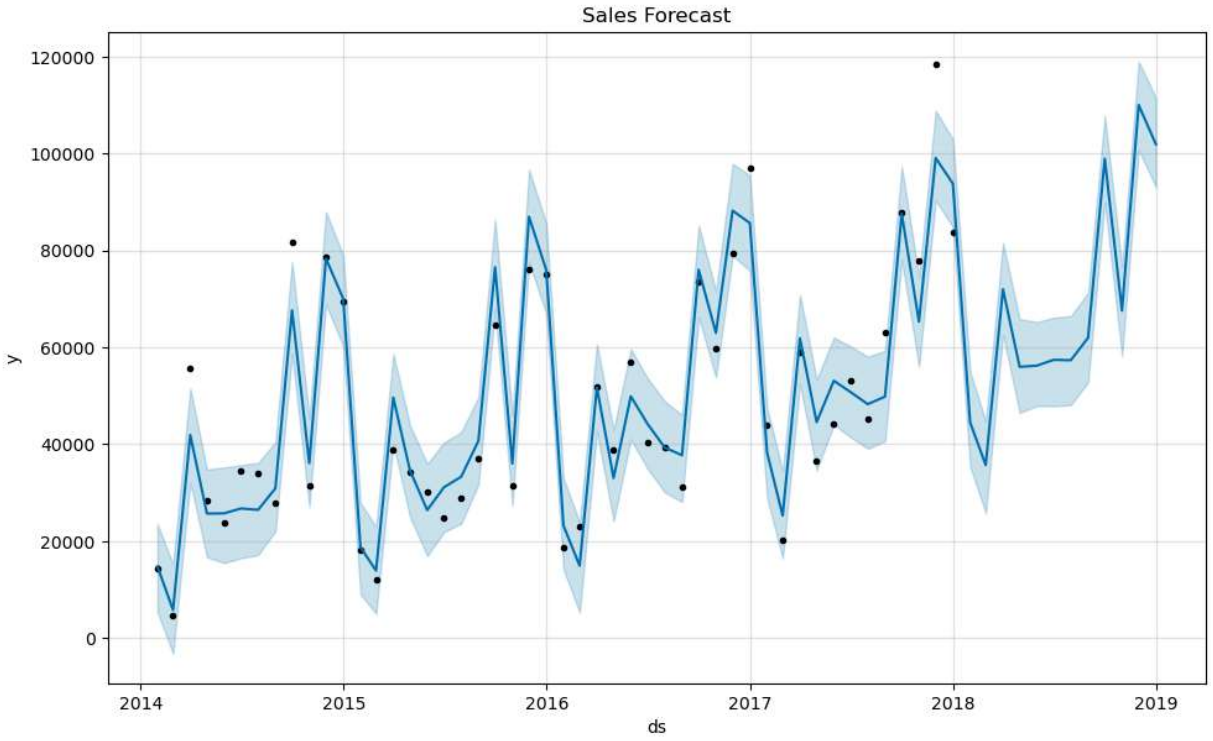
Out[35]:
```
<prophet.forecaster.Prophet at 0x1a822d7a210>
```

In [40]:
```
future = model.make_future_dataframe(periods=12, freq='ME')
forecast = model.predict(future)
forecast[['ds','yhat','yhat_lower','yhat_upper']].head()
```

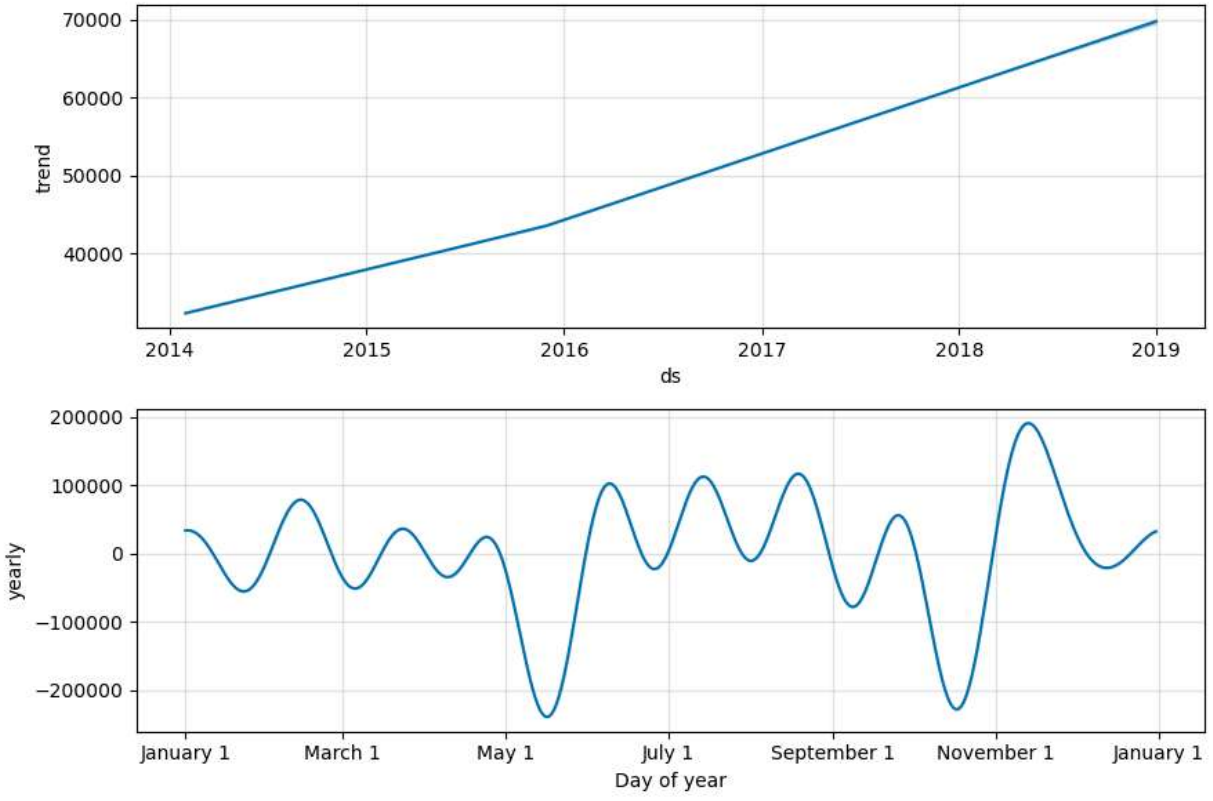
Out[40]:

	ds	yhat	yhat_lower	yhat_upper
0	2014-01-31	14790.564205	5509.524607	24182.902127
1	2014-02-28	5778.539467	-3220.145472	15354.360746
2	2014-03-31	41875.343941	33305.745987	51153.633309
3	2014-04-30	25662.724026	16862.212610	35060.594720
4	2014-05-31	25711.928216	16217.511479	35189.072203

In [37]:
```
model.plot(forecast)
plt.title("Sales Forecast")
plt.show()
```



In [38]:
```
model.plot_components(forecast)
plt.show()
```



In [39]:
```
forecast[['ds','yhat','yhat_lower','yhat_upper']].to_csv(
    "C:\\Users\\buyt2\\Downloads\\archive (1)\\mock_kaggle.csv", index=False
)
```

In [ ]:

In [ ]: