```
import pandas as pd
import plotly.express as px
import plotly.graph_objects as go
import plotly.io as pio
import plotly.colors as colors
pio.templates.default = "plotly_white"
data = pd.read_csv("Superstore.csv", encoding='latin-1')

data.head()
data.describe()
data.head()
data.info()
data['Order Date'] = pd.to_datetime(data['Order Date'])
data['Ship Date'] = pd.to_datetime(data['Ship Date'])

data['Order Month'] = data['Order Date'].dt.month
data['Order Year'] = data['Order Date'].dt.year
data['Order Day of Week'] = data['Order Date'].dt.dayofweek

data.head()
sales_by_month = data.groupby('Order Month')['Sales'].sum().reset_index()
fig = px.line(sales_by_month,
              x='Order Month',
              y='Sales',
              title='Monthly Sales Analysis')
fig.show()
sales_by_category = data.groupby('Category')['Sales'].sum().reset_index()
fig = px.pie(sales_by_category,
             values='Sales',
             names='Category',
             hole=0.5,
             color_discrete_sequence=px.colors.qualitative.Pastel)

fig.update_traces(textposition='inside', textinfo='percent+label')
fig.update_layout(title_text='Sales Analysis by Category',
title_font=dict(size=24))
fig.show()
sales_by_subcategory = data.groupby('Sub-
Category')['Sales'].sum().reset_index()
fig = px.bar(sales_by_subcategory,
             x='Sub-Category',
             y='Sales',
             title='Sales Analysis by Sub-Category')
fig.show()
profit_by_month = data.groupby('Order
Month')['Profit'].sum().reset_index()
fig = px.line(profit_by_month,
              x='Order Month',
              y='Profit',
              title='Monthly Profit Analysis')
fig.show()
profit_by_category =
data.groupby('Category')['Profit'].sum().reset_index()
fig = px.pie(profit_by_category,
             values='Profit',
             names='Category',
             hole=0.5,
             color_discrete_sequence=px.colors.qualitative.Pastel)
```

```
fig.update_traces(textposition='inside', textinfo='percent+label')
fig.update_layout(title_text='Profit Analysis by Category',
title_font=dict(size=24))
fig.show()
profit_by_subcategory = data.groupby('Sub-
Category')['Profit'].sum().reset_index()
fig = px.bar(profit_by_subcategory, x='Sub-Category',
             y='Profit',
             title='Profit Analysis by Sub-Category')
fig.show()
sales_profit_by_segment = data.groupby('Segment').agg({'Sales': 'sum',
'Profit': 'sum'}).reset_index()
color_palette = colors.qualitative.Pastel
fig = go.Figure()
fig.add_trace(go.Bar(x=sales_profit_by_segment['Segment'],
                     y=sales_profit_by_segment['Sales'],
                     name='Sales',
                     marker_color=color_palette[0]))

fig.add_trace(go.Bar(x=sales_profit_by_segment['Segment'],
                     y=sales_profit_by_segment['Profit'],
                     name='Profit',
                     marker_color=color_palette[1]))

fig.update_layout(title='Sales and Profit Analysis by Customer Segment',
                  xaxis_title='Customer Segment', yaxis_title='Amount')
fig.show()
sales_profit_by_segment = data.groupby('Segment').agg({'Sales': 'sum',
'Profit': 'sum'}).reset_index()
sales_profit_by_segment['Sales_to_Profit_Ratio'] =
sales_profit_by_segment['Sales'] / sales_profit_by_segment['Profit']
print(sales_profit_by_segment[['Segment', 'Sales_to_Profit_Ratio']])
```