

➤ You need to calculate the monthly sales of the store and identify which month had the highest and lowest sales.

- `monthly_sales = data.groupby(data['OrderDate'].dt.to_period('M'))`
`['Sales'].sum().reset_index()`
- `highest_sale = monthly_sales.loc[monthly_sales['sales'].idxmax()]`
- `lowest_sale = monthly_sales.loc[monthly_sales['Sales'].idxmin()]`
- `monthly_sale = data.groupby('Order Date')['Sales'].sum().reset_index()`
 --- combine the month of every year

- You need to analyse sales based on product categories and determine which categories has the lowest sales and highest.

- `sales_by_category = data.groupby('Category')['Sales'].sum().reset_index()`
- `highest_category = sales_by_category .loc[sales_by_category ['Sales'].idxmax()]`
- `lowest_category = sales_by_category .loc[sales_by_category ['Sales'].idxmin()]`

- The sales analysis needs to be done based on sub_category

- `sales_by_Sun_Category = data.groupby('SubCategory')['Sales'].sum().reset_index()`

➤ You need to analyse the monthly profit from sales and determine which month had highest profit

- `data['Month'] = data['Order Date'].dt.to_period('M')`
- `monthly_profit = data.groupby('Month')[['Sales','Profit']].sum().reset_index()`
- `highest_profit = monthly_profit.loc[monthly_profit[['Profit','Sales']].idxmax()]`

➤ **Analyze the profit by category and sub-category**

- `profit_by_category = data.groupby(['Category', 'Sub-Category'])
['Profit'].sum().reset_index()`

➤ **Analyze the sales and profit by customer segment**

- `customer = data.groupby('Segment')[['Sales', 'Profit']].sum().reset_index()`

➤ **Analyze the sales to profit ratio**

- `sales_profit_by_segment = data.groupby('Segment')[['Sales', 'Profit']].sum().reset_index()`
- `sales_profit_by_segment['Sales_to_Profit_Ratio'] = sales_profit_by_segment['Sales'] /
sales_profit_by_segment['Profit']
sales_profit_by_segment[['Segment', 'Sales_to_Profit_Ratio']]`