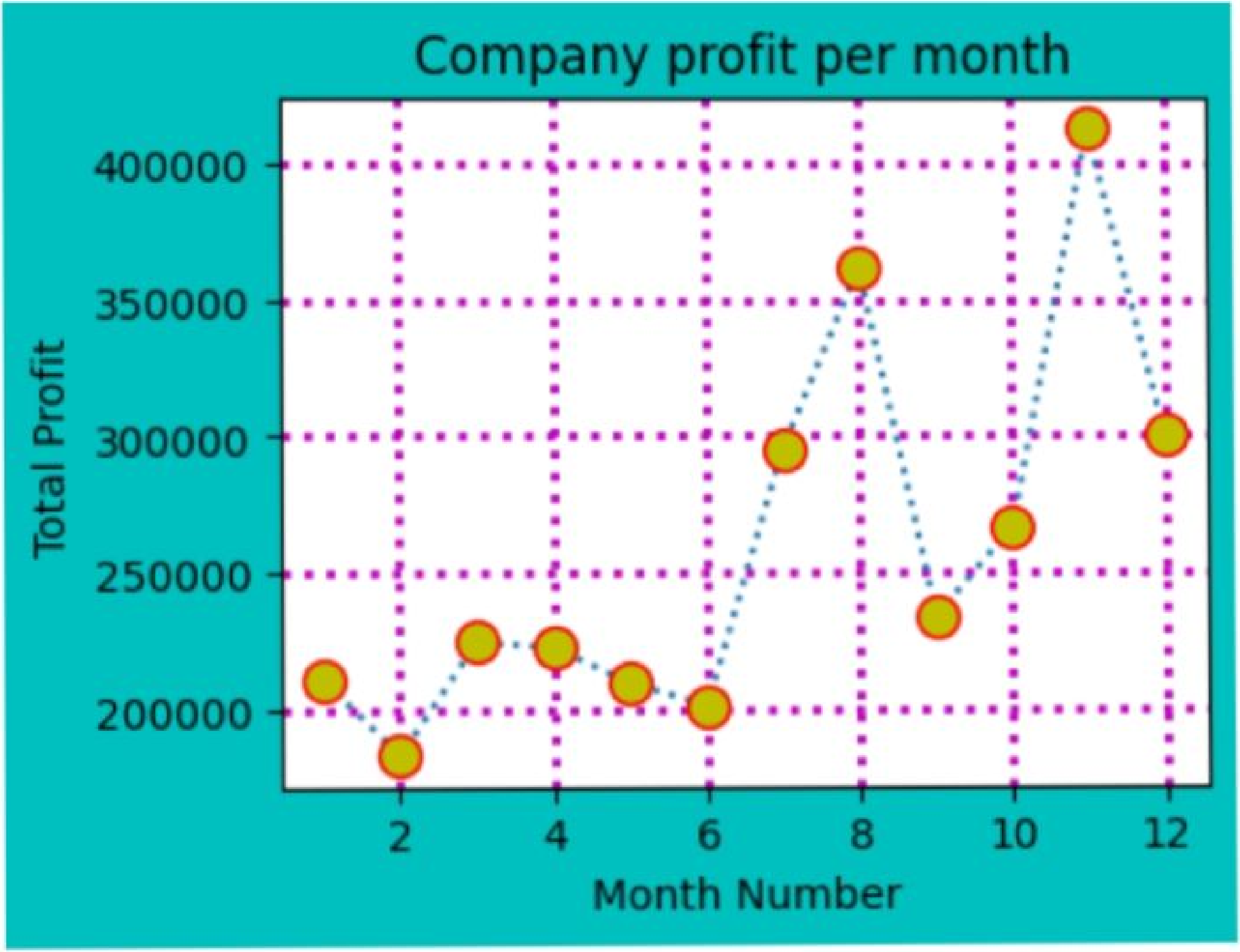
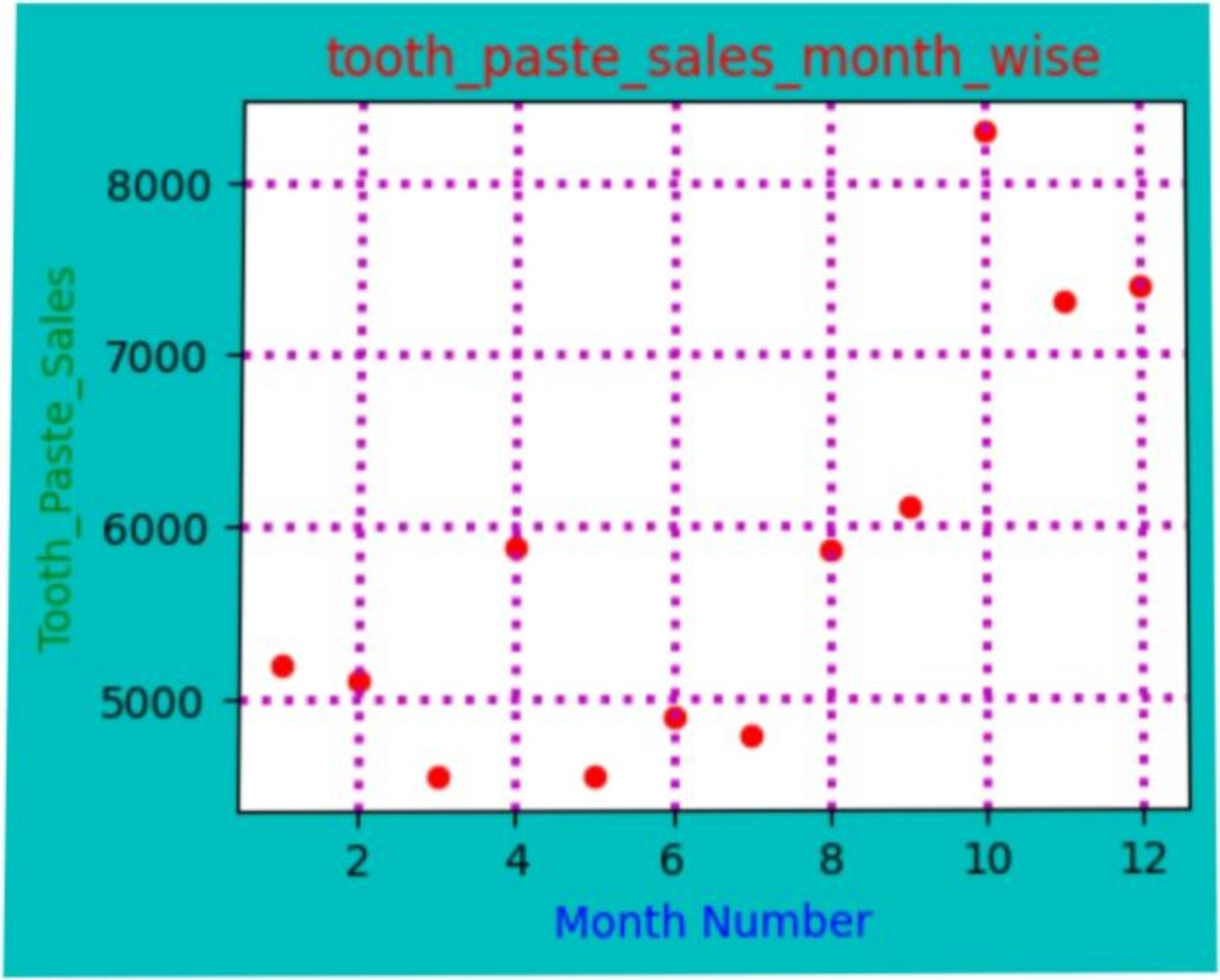
B. Dhanya Akshaya
2023006257

1)
```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("sales.csv")
x = df['month_number']
y = df['total_profit']
plt.figure(figsize=(4,3))
plt.plot(x,y, linestyle=':', marker='o', mec='r', mfc='y', ms=10)
plt.grid(linestyle=':', lw=2, color='m')
plt.gcf().set_facecolor('c')
plt.xlabel('Month Number')
plt.ylabel('Total Profit')
plt.title('Company profit per month')
plt.show()
```


Company profit per month
Total Profit
400000
350000
300000
250000
200000
2
4
6
8
10
12
Month Number

2)
```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("sales.csv")
x = df['month_number']
y = df['toothpaste']
plt.figure(figsize=(4,3))
plt.scatter(x, y, marker='o', s=20, color='r')
plt.grid(linestyle=':', lw=2, color='m')
plt.gcf().set_facecolor('c')
plt.xlabel('Month Number', color='b')
plt.ylabel('Tooth_Paste_Sales', color='g')
plt.title('tooth-paste-sales-month-wise', color='r')
plt.show()
```


tooth_paste_sales_month_wise
8000
7000
6000
5000
Tooth_Paste_Sales
2
4
6
8
10
12
Month Number

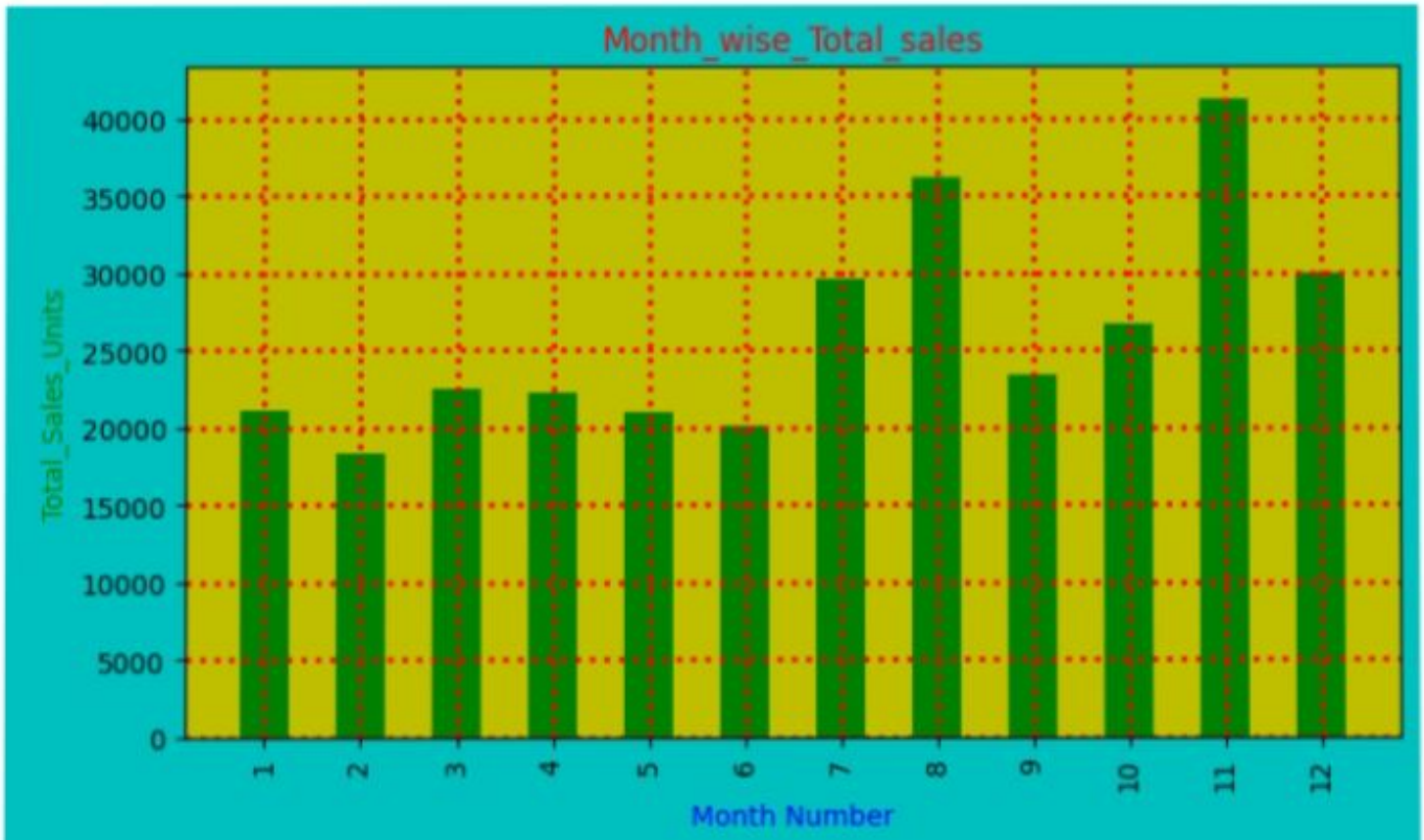
3) import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("sales.csv")

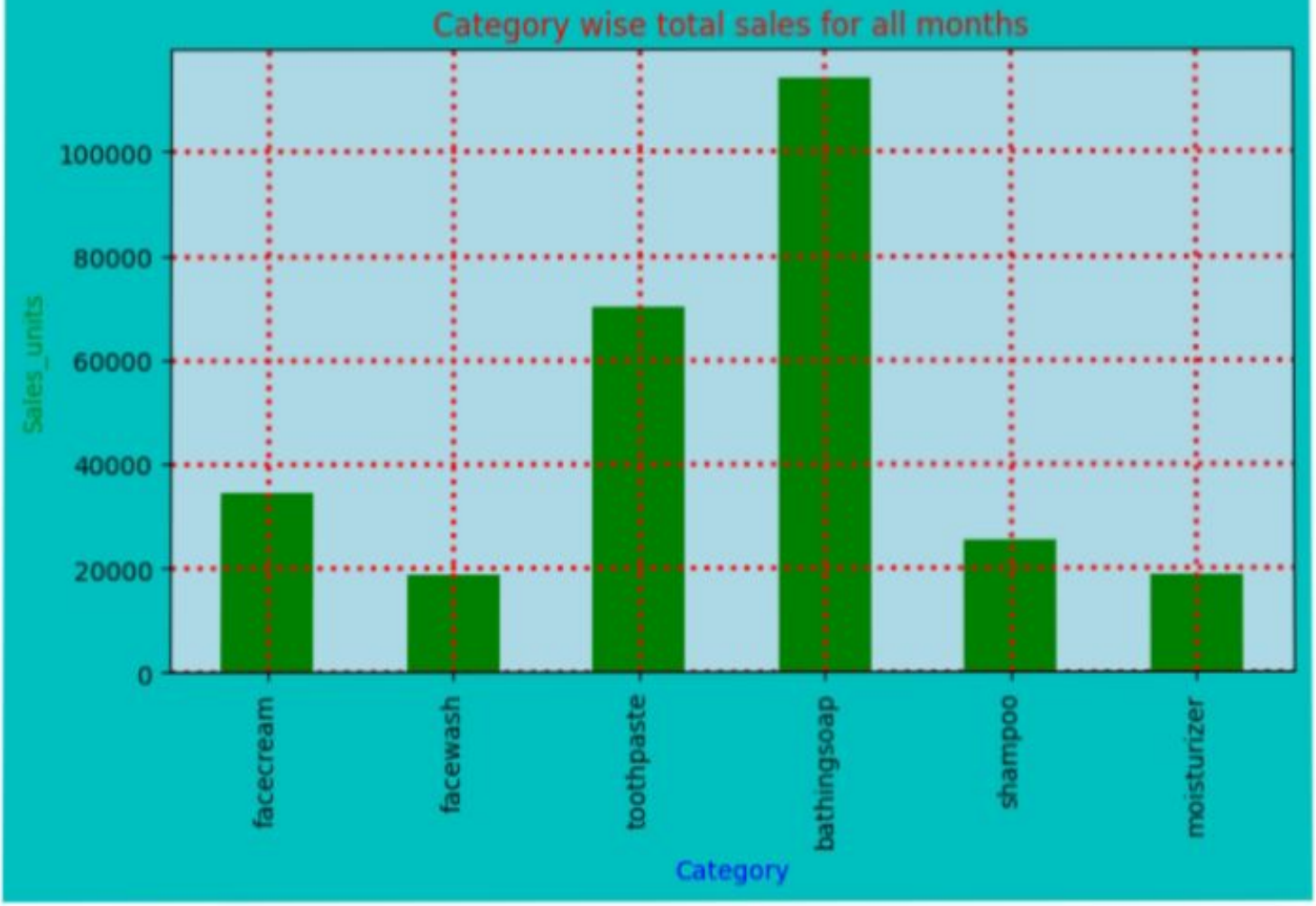
x = df['month_number']
y = df['total_units']

plt.figure(figsize=(8,12))

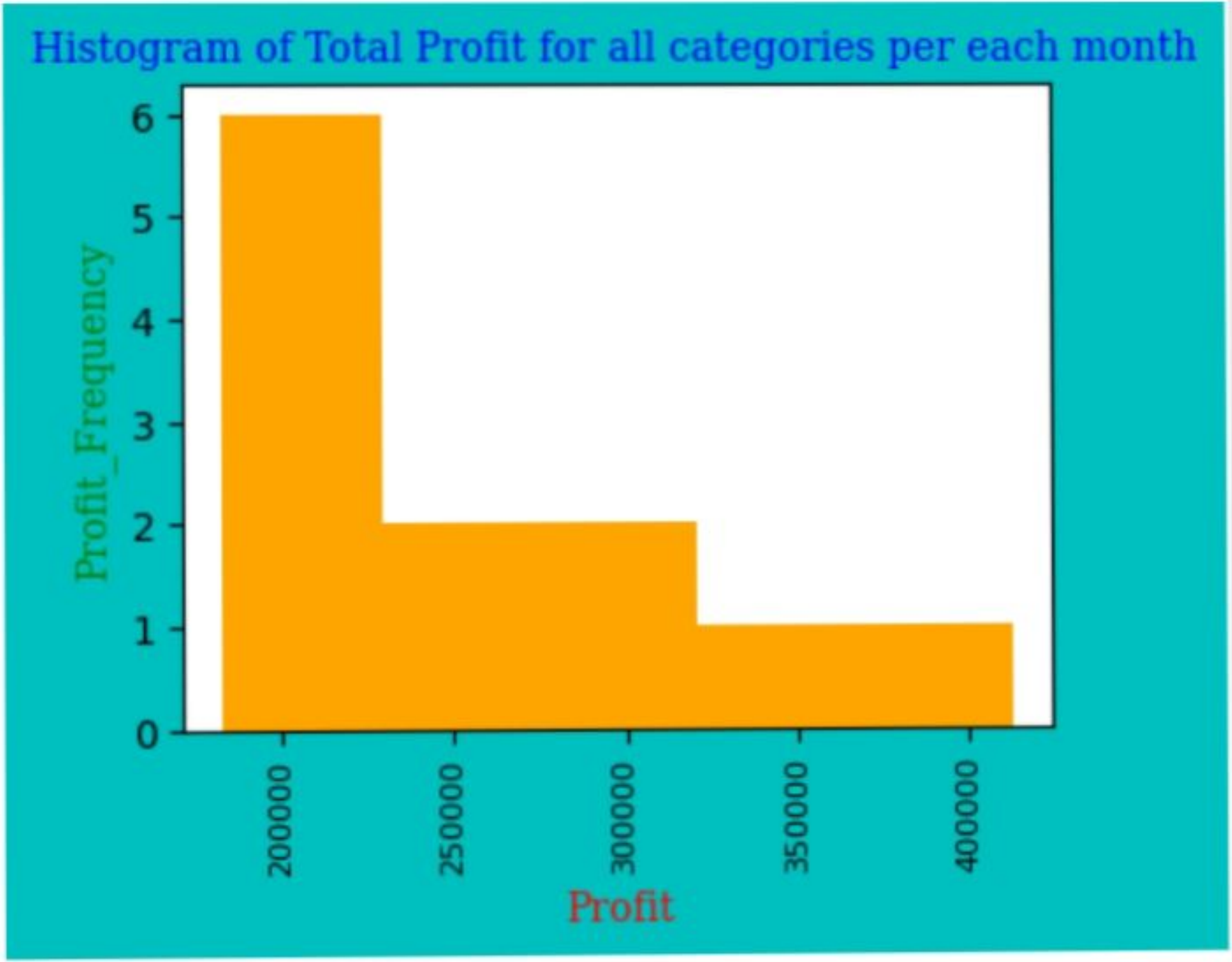
plt.subplot(2,1,1, facecolor='y')
plt.bar(x,y, width=.5, color='g')
plt.xlabel('Month Number', color='b')
plt.ylabel('Total_Sales_Units', color='g')
plt.title('Month-wise_Total_sales', color='r')
plt.xticks(df['month_number'], range(1,13), rotation=90)
plt.grid(linestyle=':', lw=2, color='r')

plt.subplot(2,1,2, facecolor='lightblue')
categories=['facecream','facewash','toothpaste','bathingsoap','shampoo','moisturizer']
total_sales_per_category = df[categories].sum()
plt.bar(categories, total_sales_per_category, width=.5, color='g')
plt.xlabel('Category', color='b')
plt.ylabel('Sales-units', color='g')
plt.title('Category wise total sales for all months', color='r')
plt.xticks(categories, rotation=90)
plt.grid(linestyle=':', lw=2, color='r')
plt.subplots_adjust(hspace=.7)
plt.gcf().patch.set_facecolor('c')
plt.show()


Month_wise_Total_sales
Total_Sales_Units
0
5000
10000
15000
20000
25000
30000
35000
40000
1
2
3
4
5
6
7
8
9
10
11
12
Month Number


Category wise total sales for all months
Sales_units
0
20000
40000
60000
80000
100000
facecream
facewash
toothpaste
bathingsoap
shampoo
moisturizer
Category

4)
```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.read_csv("sales.csv")
x = df['total_profit']
plt.figure(figsize=(4,3))
plt.hist(x, bins=5, color='orange')
plt.title('Histogram of Total Profit for all categories per each
                    month', family='serif', color='b', size=10)
plt.xlabel('Profit', family='serif', color='r', size=10)
plt.ylabel('Profit_Frequency', family='serif', color='g', size=10)
plt.xticks(rotation=90, size=8)
plt.gcf().patch.set_facecolor('c')
plt.show()
```


Histogram of Total Profit for all categories per each month
Profit_Frequency
0
1
2
3
4
5
6
200000
250000
300000
350000
400000
Profit