6

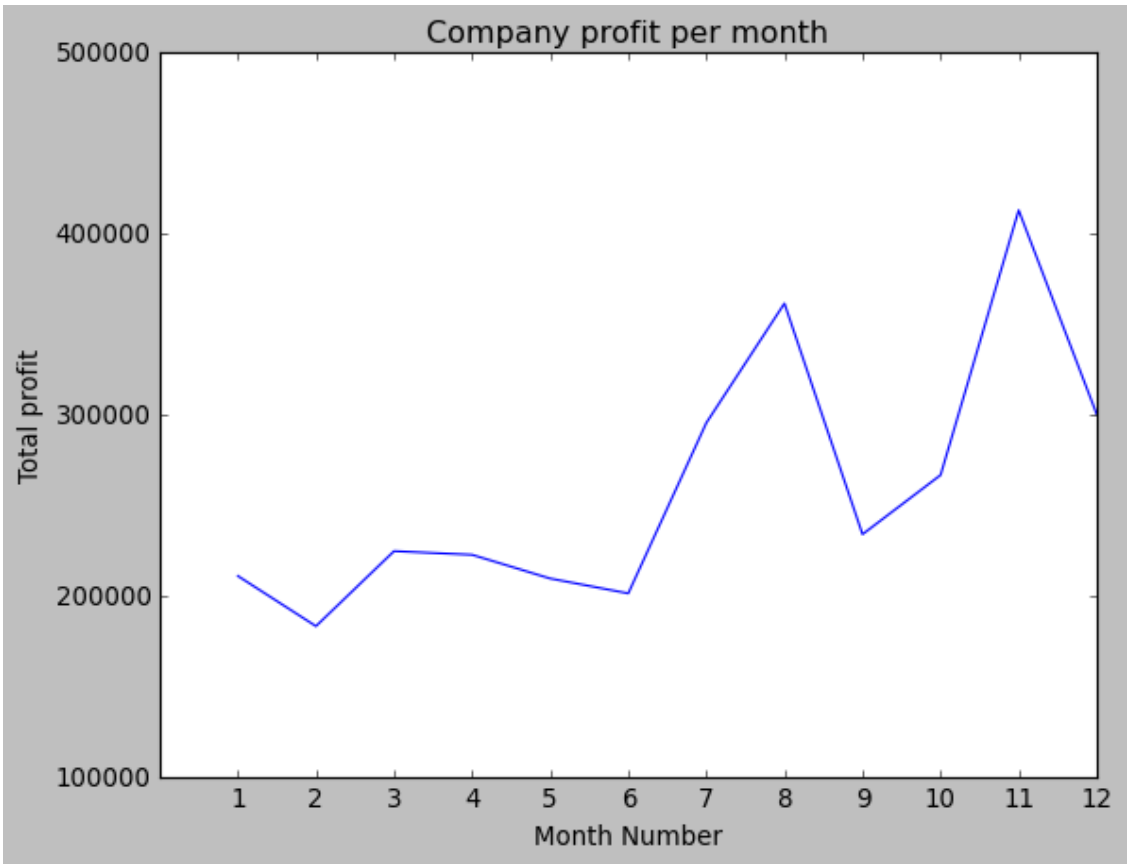
April 10, 2024

[3]:
```
import matplotlib as mpl
import matplotlib.pyplot as plt
import seaborn as sns
import numpy as np
import pandas as pd
plt.style.use('classic')
```

[4]:
```
sales = pd.read_csv('sales.csv')
```

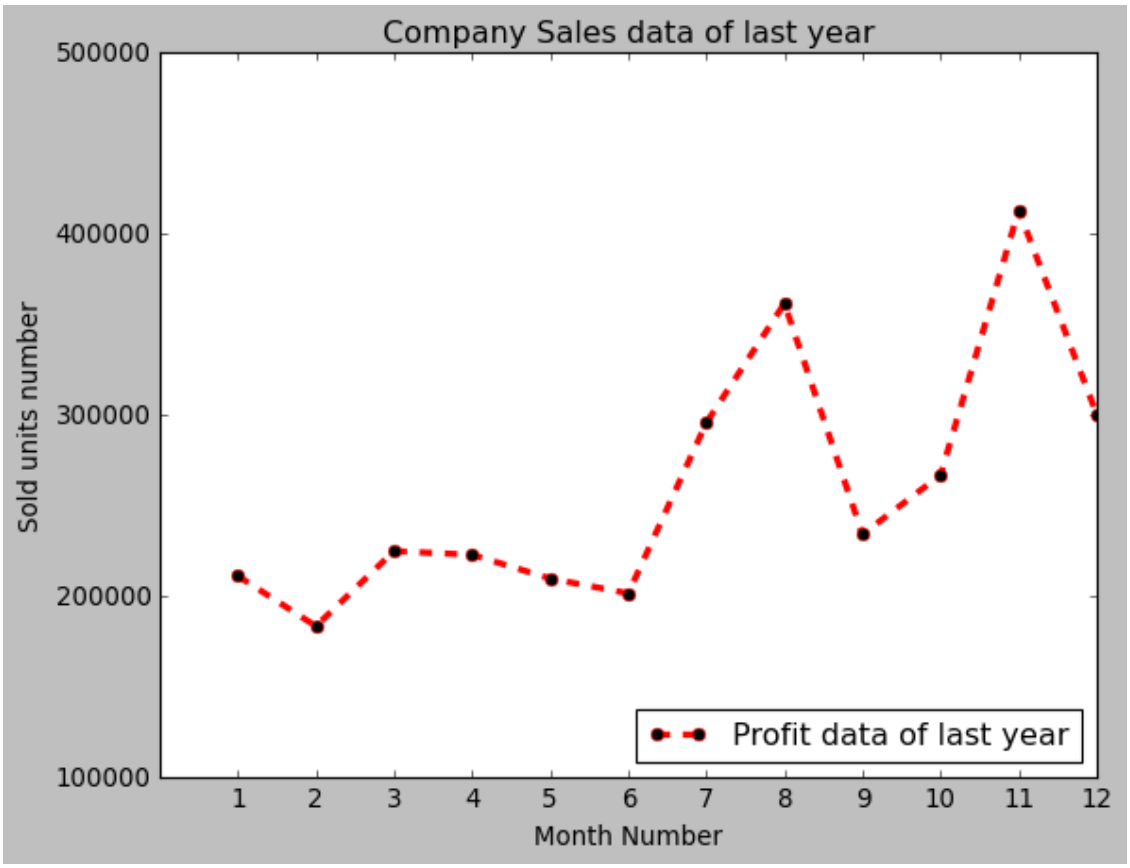
[18]:
```
fig1 = plt.figure()
plt.plot(sales['month_number'], sales['total_profit'], '-')
plt.xticks(np.arange(1, 13, step=1))
plt.yticks(np.arange(100000, 600000, step=100000))
plt.title("Company profit per month")
plt.xlabel('Month Number')
plt.ylabel('Total profit')
```

[18]:
```
Text(0, 0.5, 'Total profit')
```



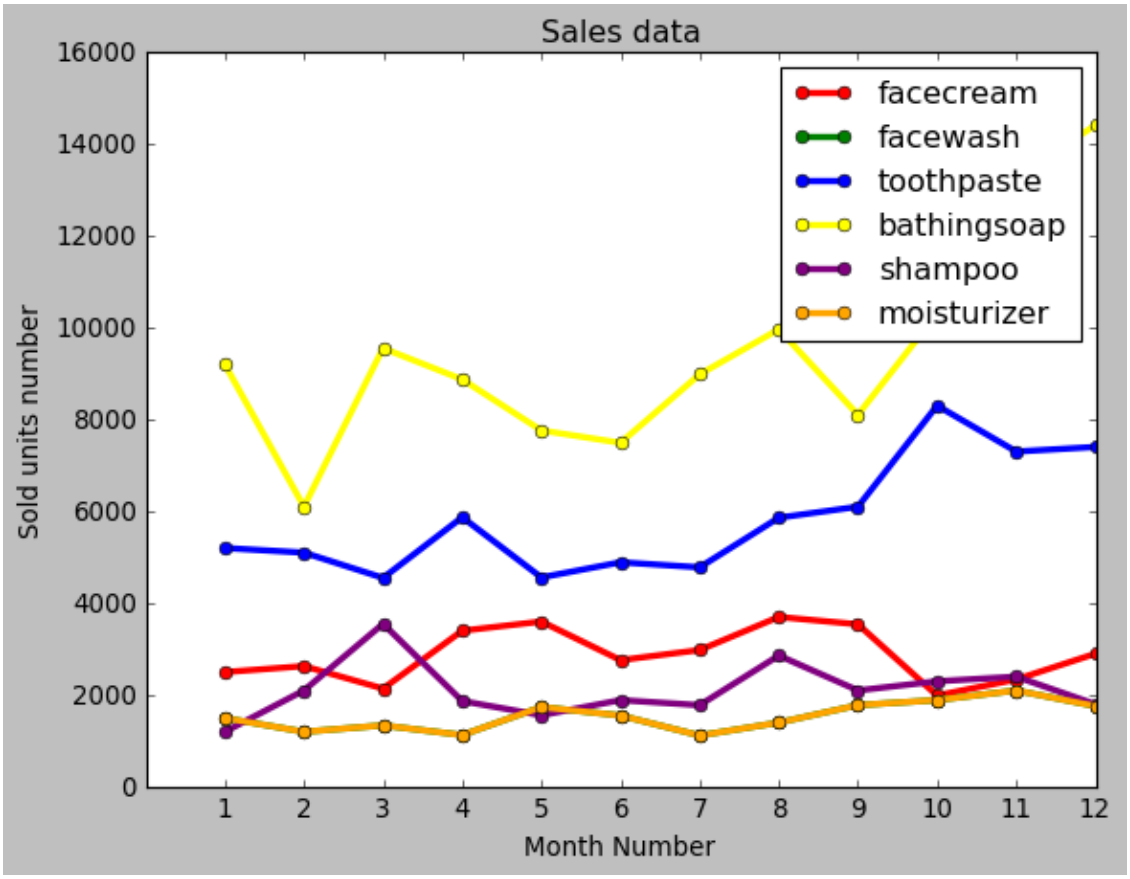
[32]:
```
plt.plot(sales['month_number'], sales['total_profit'], '--', color="red",␣
 ↪marker="o", markeredgecolor='red',
         markerfacecolor="black", linewidth=3)
plt.xticks(np.arange(1, 13, step=1))
plt.yticks(np.arange(100000, 600000, step=100000))
plt.title("Company Sales data of last year")
plt.xlabel('Month Number')
plt.ylabel('Sold units number')
plt.legend(['Profit data of last year'],loc='lower right', fontsize='large')
```

[32]:
```
<matplotlib.legend.Legend at 0x7e0fb5fca790>
```



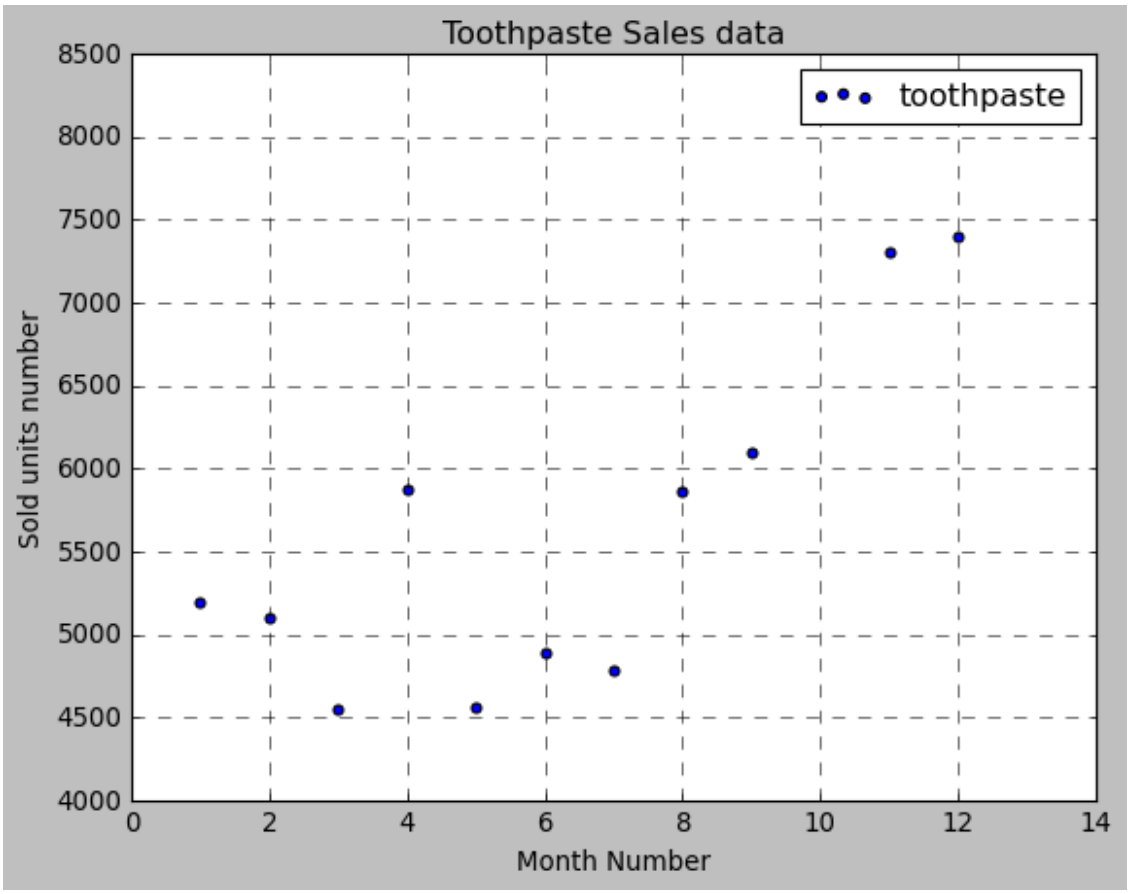
[40]:
```
plt.plot(sales['month_number'], sales['facecream'], '-', color="red",␣
 ↪marker="o", linewidth=3)
plt.plot(sales['month_number'], sales['facewash'], '-', color="green",␣
 ↪marker="o", linewidth=3)
plt.plot(sales['month_number'], sales['toothpaste'], '-', color="blue",␣
 ↪marker="o", linewidth=3)
plt.plot(sales['month_number'], sales['bathingsoap'], '-', color="yellow",␣
 ↪marker="o", linewidth=3)
plt.plot(sales['month_number'], sales['shampoo'], '-', color="purple",␣
 ↪marker="o", linewidth=3)
plt.plot(sales['month_number'], sales['moisturizer'], '-', color="orange",␣
 ↪marker="o", linewidth=3)
plt.xticks(np.arange(1, 13, step=1))
plt.title("Sales data")
plt.xlabel('Month Number')
plt.ylabel('Sold units number')
plt.legend(['facecream', 'facewash', 'toothpaste', 'bathingsoap', 'shampoo',
            'moisturizer'],loc='upper right', fontsize='large')
# facewash,toothpaste,bathingsoap,shampoo,moisturizer,
```

[40]: <matplotlib.legend.Legend at 0x7e0fb5c46a90>

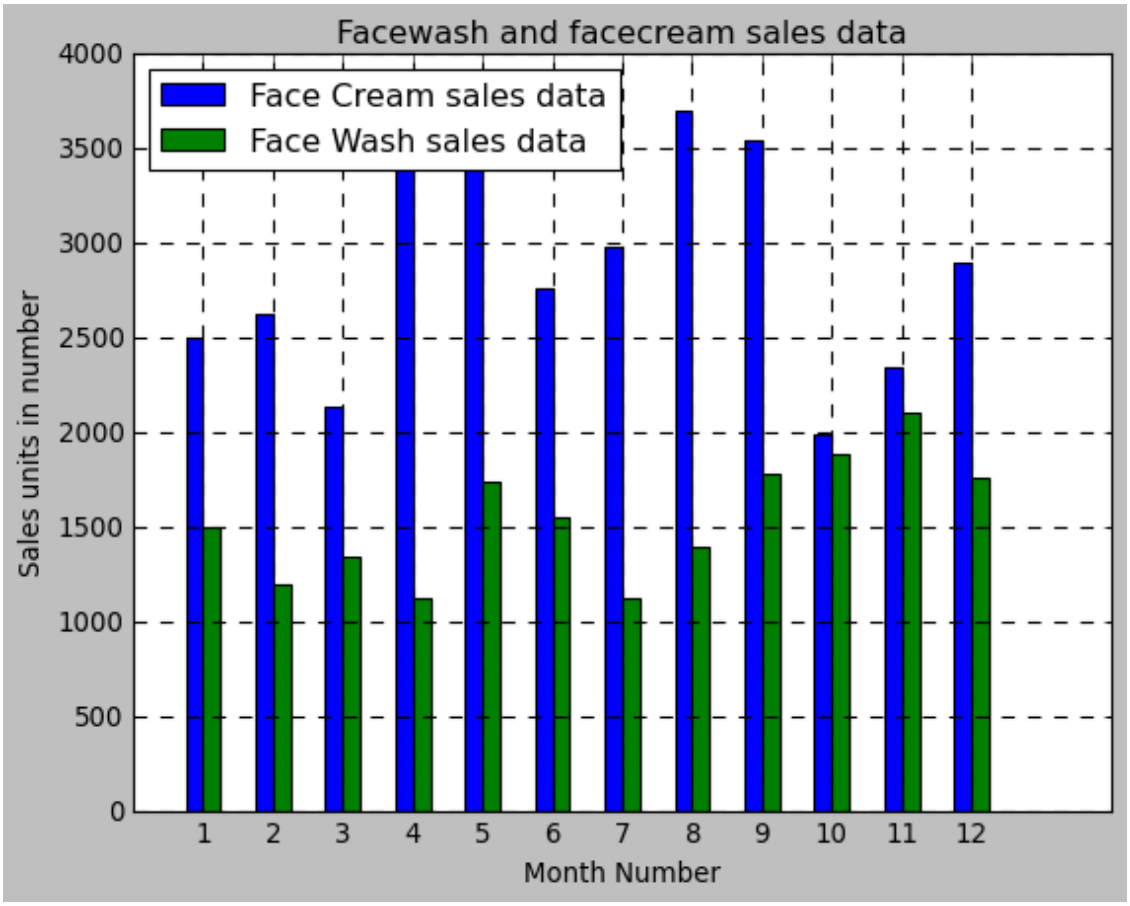


[42]:
```
plt.scatter(sales['month_number'], sales['toothpaste'])
plt.grid(linestyle='--')
plt.title("Toothpaste Sales data")
plt.xlabel('Month Number')
plt.ylabel('Sold units number')
plt.legend(['toothpaste'],loc='upper right', fontsize='large')
```

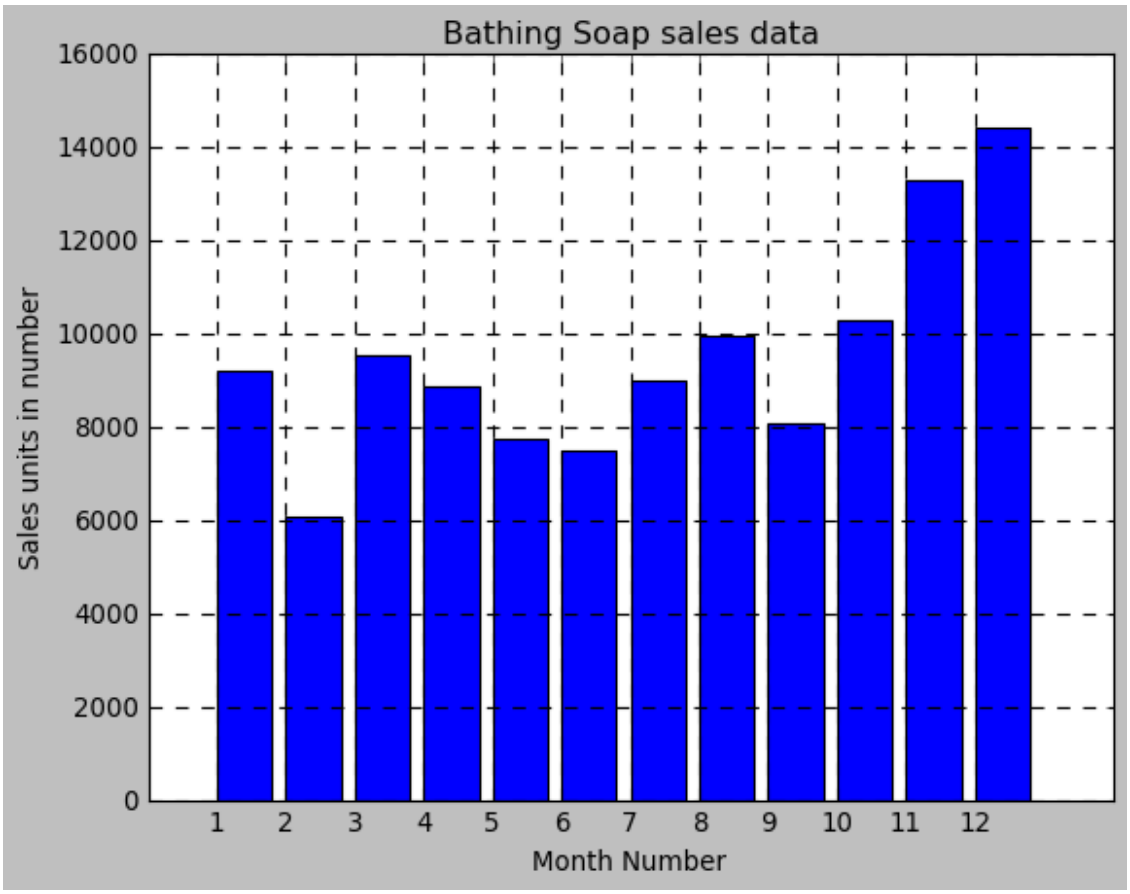
[42]: <matplotlib.legend.Legend at 0x7e0fb515fc90>



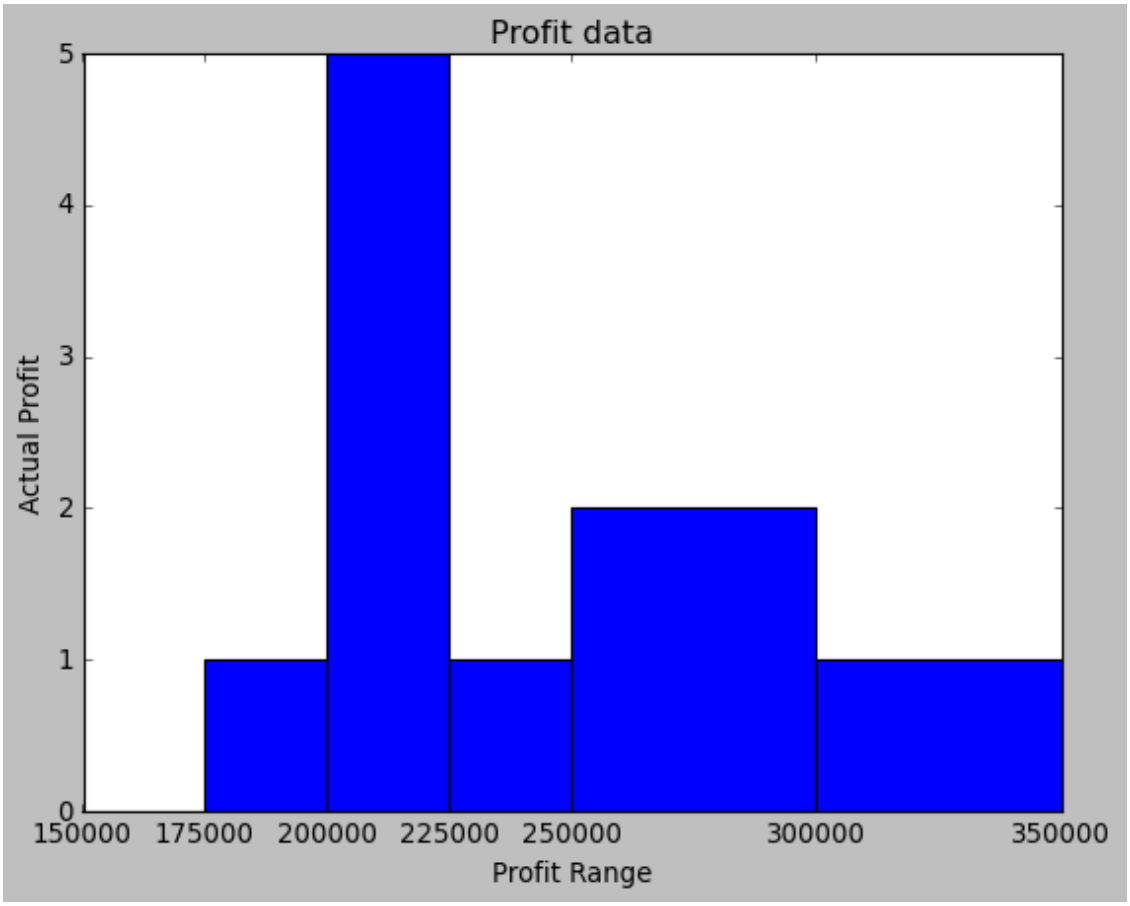
[9]:
```
plt.bar([a-0.25 for a in sales['month_number']], sales['facecream'], width= 0.
 ↪25, label='Face Cream sales data', align='edge')
plt.bar([a+0.25 for a in sales['month_number']], sales['facewash'], width= -0.
 ↪25, label='Face Wash sales data', align='edge')
plt.xlabel('Month Number')
plt.ylabel('Sales units in number')
plt.legend(loc='upper left')
plt.title('Sales data')
plt.xticks(sales['month_number'])
plt.grid(True, linewidth= 1, linestyle="--")
plt.title('Facewash and facecream sales data')
plt.show()
```



[11]:
```
plt.bar(sales['month_number'], sales['bathingsoap'], label='Bathing Soap␣
  ↪sales', align='edge')
plt.xlabel('Month Number')
plt.ylabel('Sales units in number')
plt.title('Sales data')
plt.xticks(sales['month_number'])
plt.grid(True, linewidth= 1, linestyle="--")
plt.title('Bathing Soap sales data')
plt.show()
```

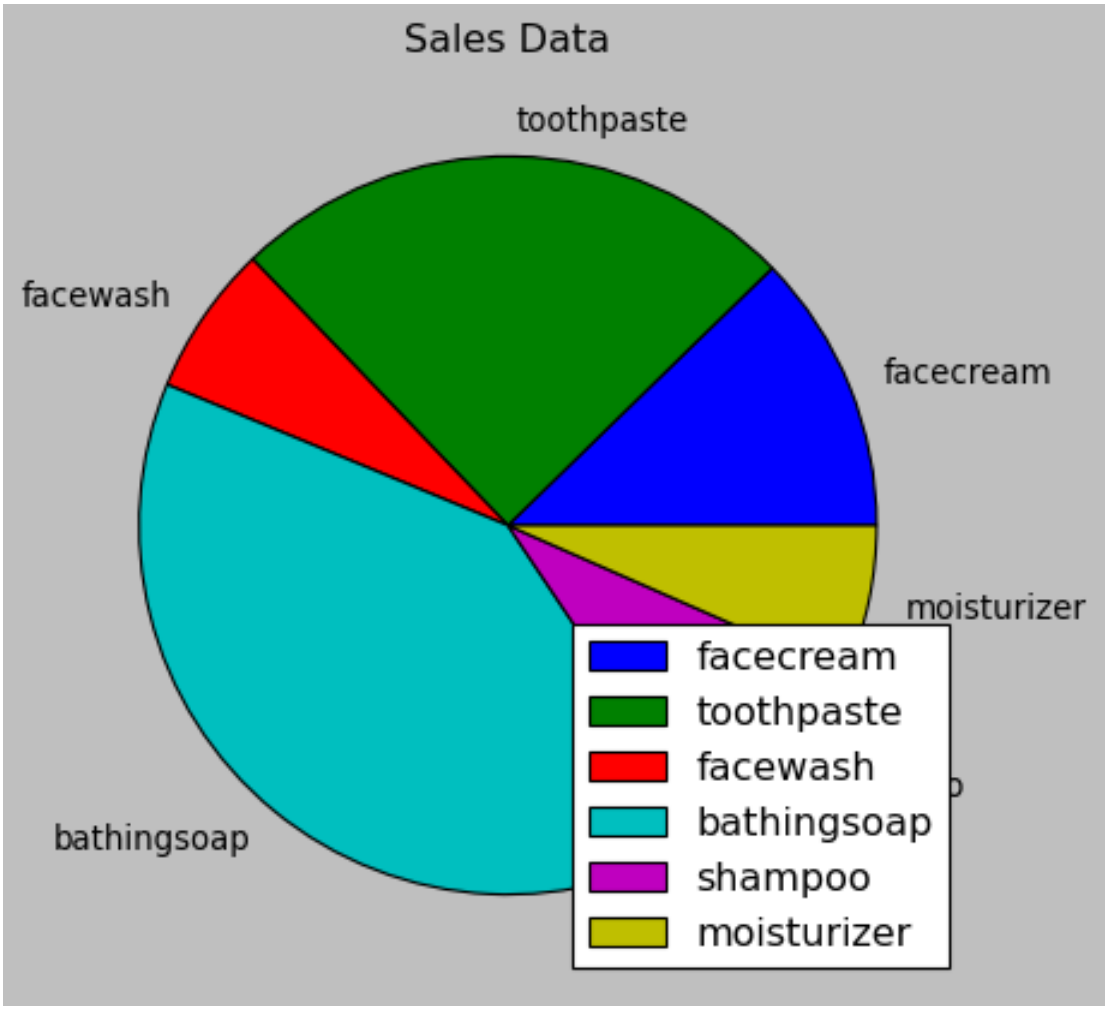


[23]:
```
plt.hist(sales['total_profit'],␣
  ↪bins=[150000,175000,200000,225000,250000,300000,350000])
plt.xlabel('Profit Range')
plt.ylabel('Actual Profit')
plt.title('Sales data')
plt.xticks([150000,175000,200000,225000,250000,300000,350000])
plt.title('Profit data')
plt.show()
```



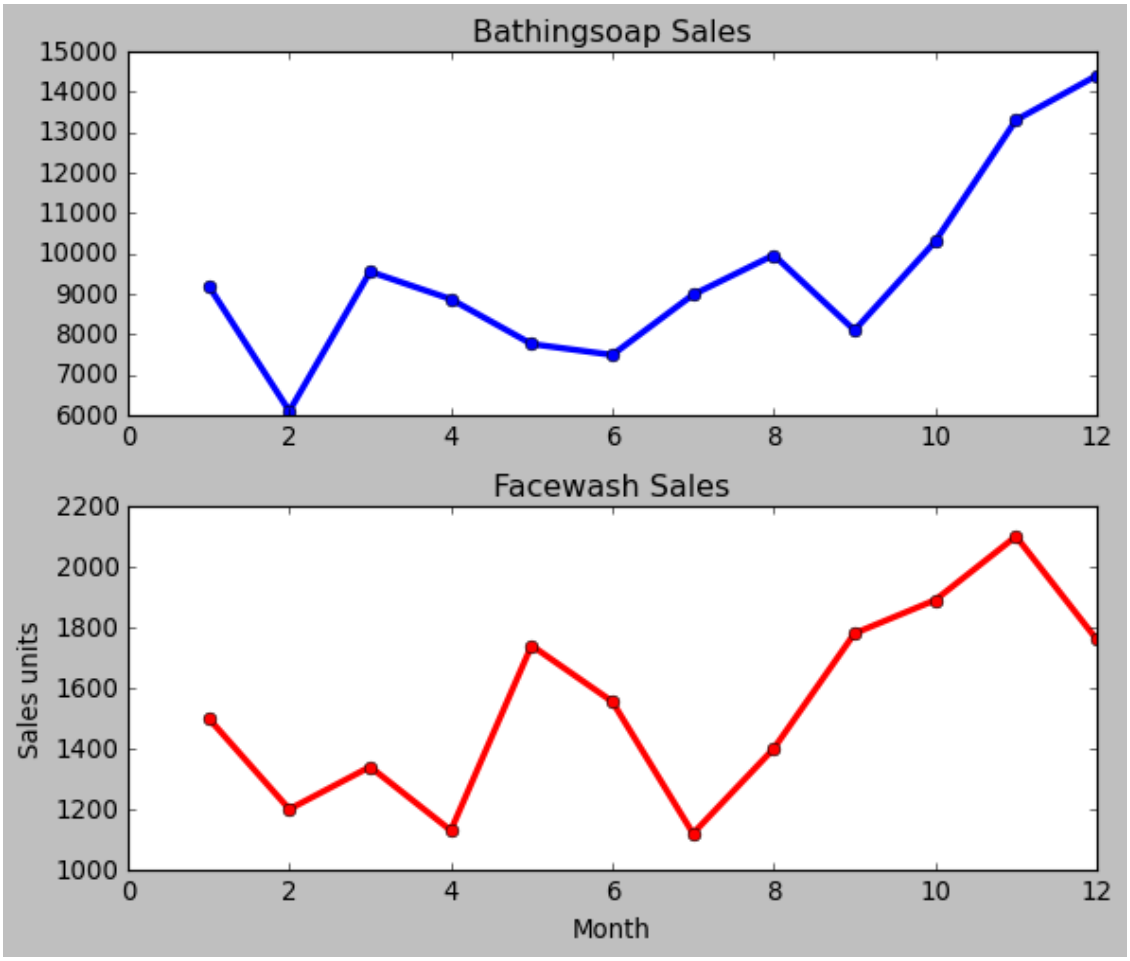
[32]:
```
plt.pie([np.sum(sales['facecream']), np.sum(sales['toothpaste']), np.
 ↪sum(sales['facewash']),
        np.sum(sales['bathingsoap']), np.sum(sales['shampoo']), np.
 ↪sum(sales['moisturizer'])],
        labels=['facecream', 'toothpaste', 'facewash', 'bathingsoap',␣
 ↪'shampoo', 'moisturizer'])
plt.legend(loc='lower right')
plt.title('Sales Data')
```

[32]:
```
Text(0.5, 1.0, 'Sales Data')
```



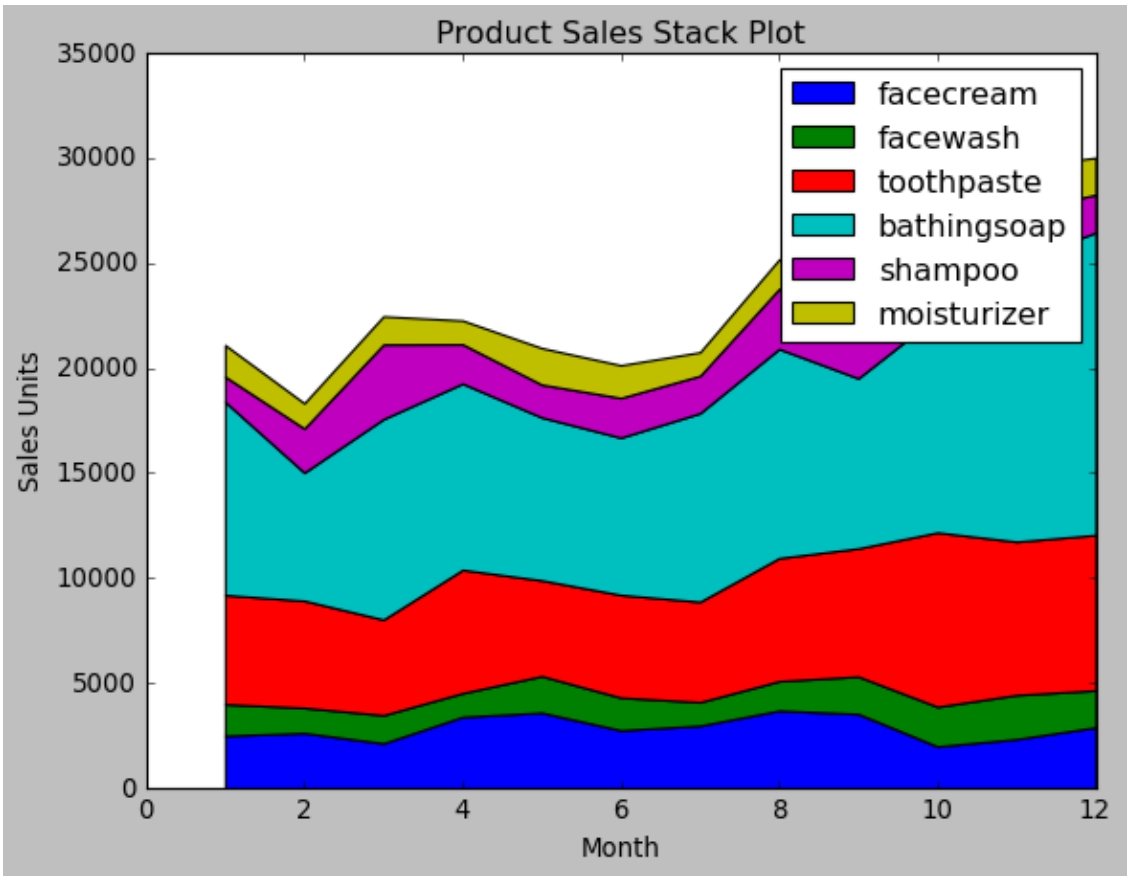
[55]:
```
fig = plt.figure()

ax1 = fig.add_axes([0.1, 0.6, 0.8, 0.4])
ax1.plot(sales['month_number'], sales['bathingsoap'],  marker="o", linewidth=3)
ax1.set_title('Bathingsoap Sales')
ax2 = fig.add_axes([0.1, 0.1, 0.8, 0.4])
ax2.plot(sales['month_number'], sales['facewash'], color='red',  marker="o",␣
 ↪linewidth=3)
ax2.set_title('Facewash Sales')
ax2.set_ylabel('Sales units')
plt.xlabel('Month')
```

[55]:
```
Text(0.5, 0, 'Month')
```



[60]:
```
plt.stackplot(sales['month_number'], sales['facecream'], sales['facewash'],␣
 ↪sales['toothpaste'],
              sales['bathingsoap'], sales['shampoo'], sales['moisturizer'],
              labels=['facecream', 'facewash', 'toothpaste', 'bathingsoap',␣
 ↪'shampoo', 'moisturizer'])
plt.legend()
plt.xlabel('Month')
plt.ylabel('Sales Units')
plt.title('Product Sales Stack Plot')
```

[60]:
```
Text(0.5, 1.0, 'Product Sales Stack Plot')
```


Product Sales Stack Plot
facecream
facewash
toothpaste
bathingsoap
shampoo
moisturizer
Sales Units
Month
35000
30000
25000
20000
15000
10000
5000
0
0
2
4
6
8
10
12