vikram_singh_negi_charts_exercise

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0.1 Details

- Author: Vikram S. Negi
- Roll No: 20930021010
- Batch: FinTech

I have made a few changes to the company_sales_data.csv file to make it more realistic and updated the total_profit column.

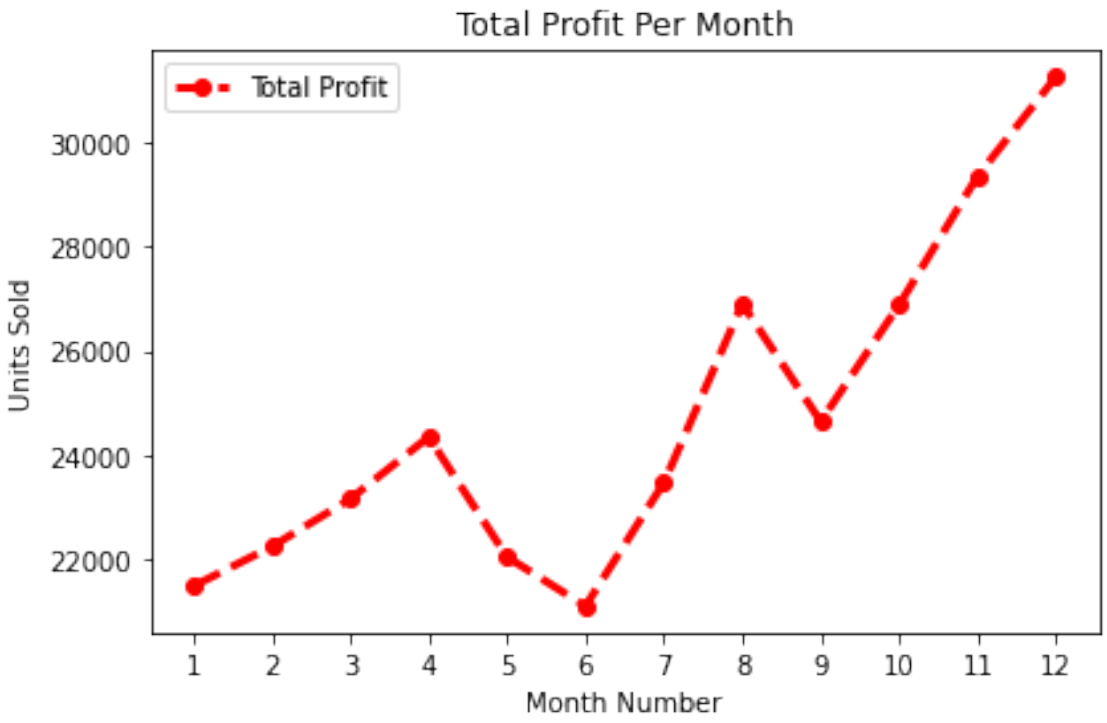
[ ]:
```
import pandas as pd
import matplotlib.pyplot as plt
import os
import numpy as np
```

[ ]:
```
file_name = "company_sales_data.csv"
file_path = os.getcwd() + f"/data/{file_name}"
df = pd.read_csv(file_path, index_col=0)
```

[ ]:
```
total_profit_sum = df["total_profit"].sum()
print(f"The total profit for the year is ${total_profit_sum}")
```

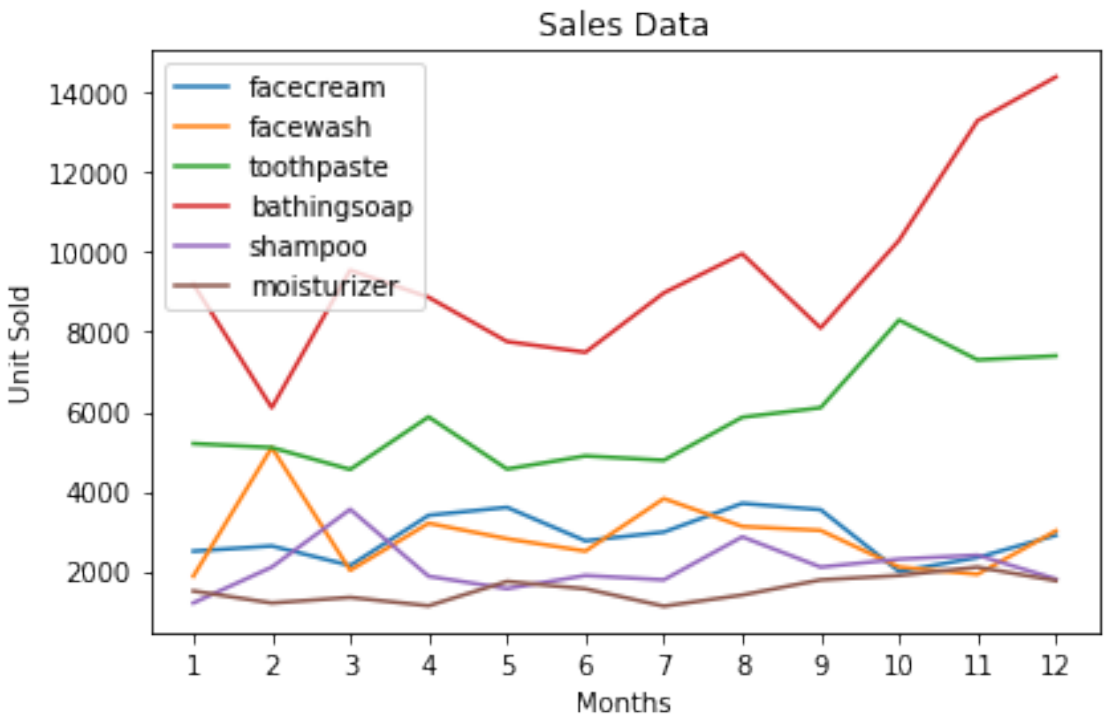
```
The total profit for the year is $296826
```

[ ]:
```
fig, ax = plt.subplots()
ax.plot(df.index, df["total_profit"], "--", marker="o", color="red",␣
 ↪linewidth=3)

ax.set_xlabel("Month Number")
ax.set_ylabel("Units Sold")

ax.set_title("Total Profit Per Month")
ax.legend(["Total Profit"])
ax.set_xticks(df.index)

plt.tight_layout()
plt.show()
```

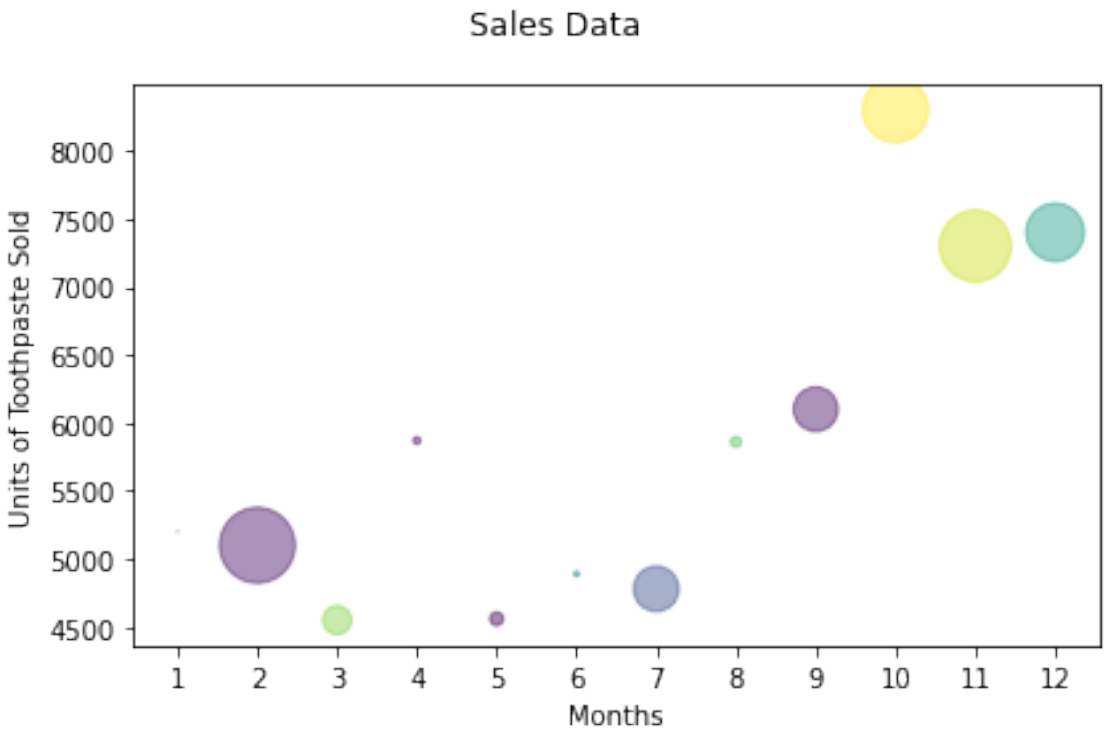


[ ]:
```
products = df.columns[:-2]

product_sales = []

for prod in products:
  product_sales.append(df[prod].sum())
```

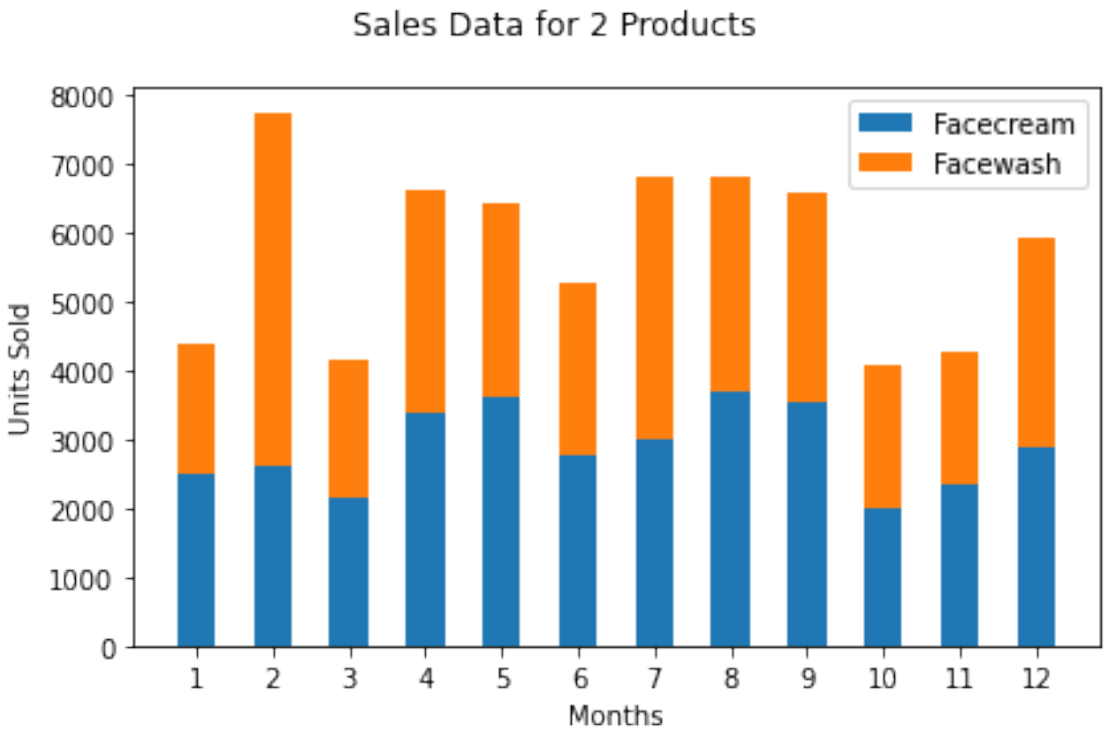
[ ]:
```
product_sales_data = df.loc[:, products]

product_sales_data.plot(xlabel="Months", ylabel="Unit Sold", title="Sales Data")

plt.xticks(product_sales_data.index)

plt.tight_layout()
plt.show()
```



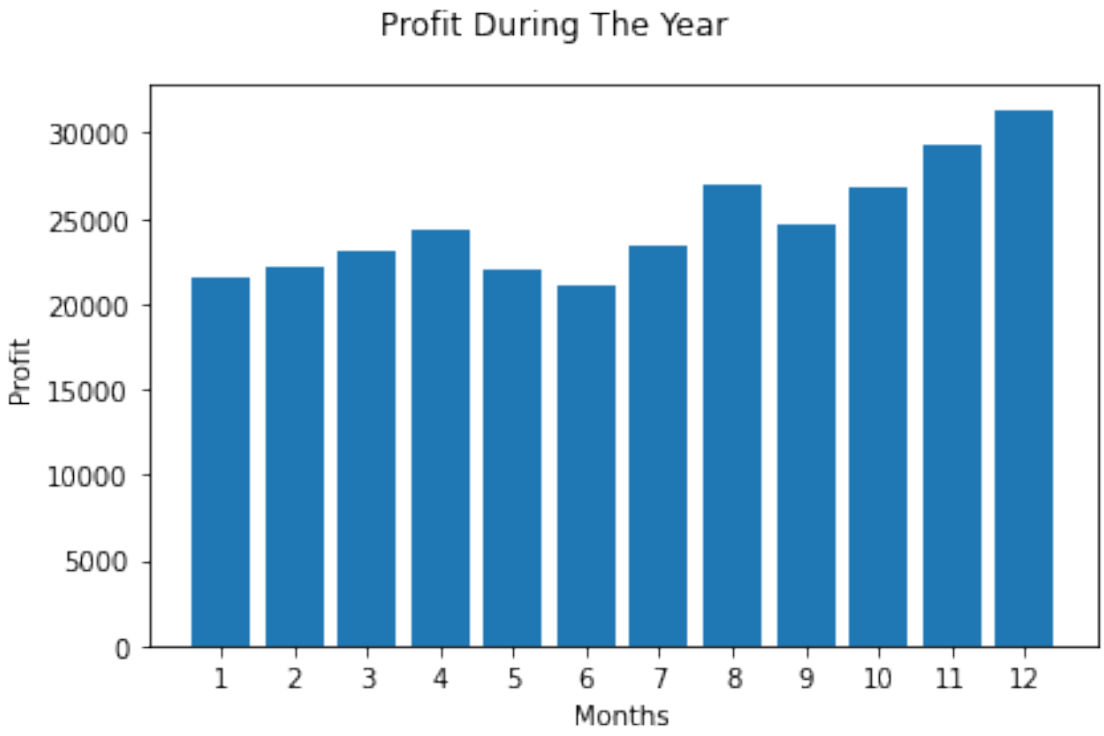
[ ]:
```
n = len(product_sales_data)
colors = np.random.rand(n)
area = (30 * np.random.rand(n))**2


plt.scatter(product_sales_data.index, product_sales_data["toothpaste"], s=area,␣
 ↪c=colors, alpha=0.45)

plt.xlabel("Months")
plt.ylabel("Units of Toothpaste Sold")
plt.suptitle("Sales Data")

plt.xticks(product_sales_data.index)
plt.tight_layout()
plt.show()
```



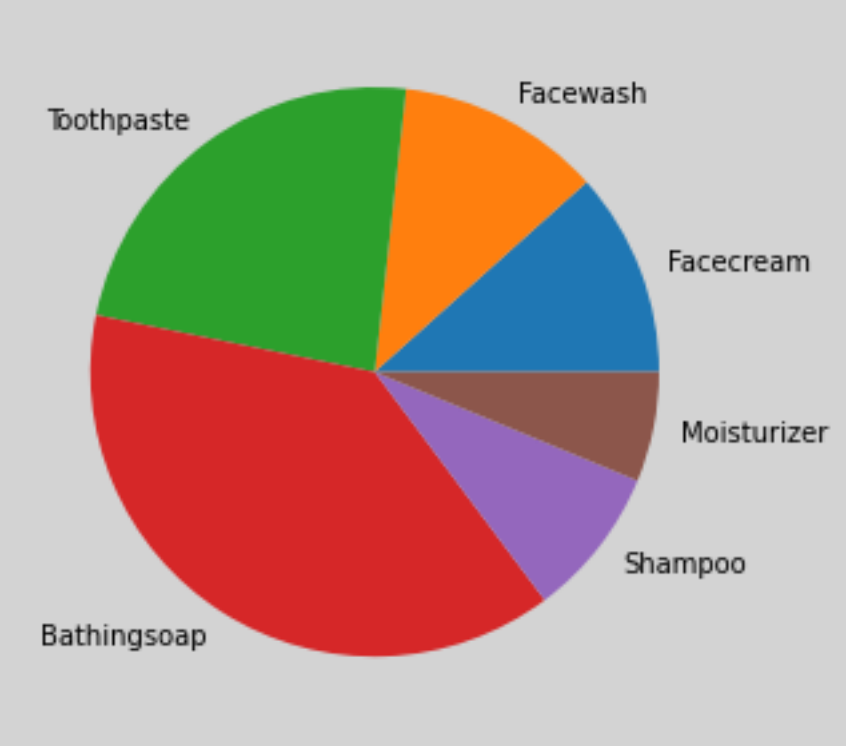
[ ]:
```
two_products = df.loc[:, ["facecream", "facewash"]]

two_products
width = 0.5

p1 = plt.bar(two_products.index, two_products["facecream"], width)
p2 = plt.bar(two_products.index, two_products["facewash"], width,␣
 ↪bottom=two_products["facecream"])

plt.xticks(two_products.index)

plt.xlabel("Months")
plt.ylabel("Units Sold")
plt.suptitle("Sales Data for 2 Products")

plt.legend((p1[0], p2[0]), ("Facecream", "Facewash"))

plt.tight_layout()
plt.show()
```



[ ]:
```
plt.bar(df.index, df["total_profit"])

plt.xlabel("Months")
plt.ylabel("Profit")
plt.suptitle("Profit During The Year")

plt.xticks(product_sales_data.index)

plt.tight_layout()
plt.show()
```

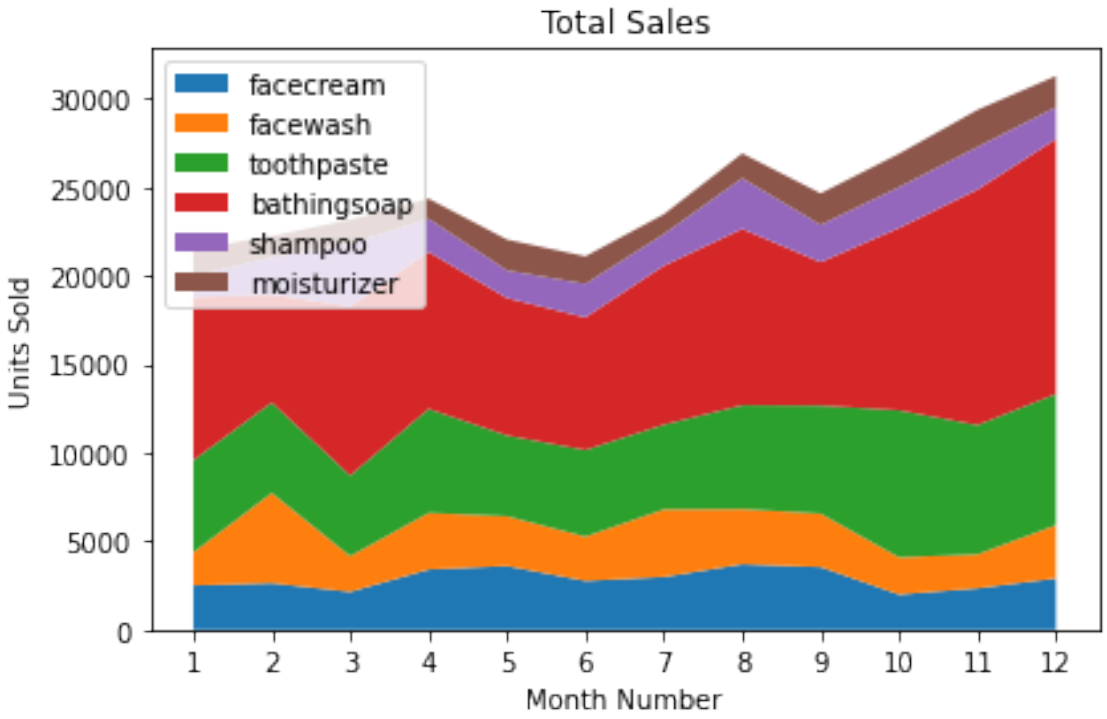


[ ]:
```
# print(products, product_sales)

total_sales = sum(product_sales)
total_sales

profit_perc_sales = [num / total_sales * 100 for num in product_sales]
# print(profit_perc_sales)

cap_labels = [label.capitalize() for label in products]

fig, ax = plt.subplots()

ax.pie(profit_perc_sales, explode=None, labels=cap_labels)
fig.set_facecolor("lightgrey")

plt.tight_layout()
plt.show()
```



[ ]:
```
all_products = {}

for prod in product_sales_data:
  # print(product_sales_data[prod])

  all_products[prod] = list(product_sales_data[prod])

# print(all_products)

fig, ax = plt.subplots()

ax.stackplot(product_sales_data.index, all_products.values(),␣
↪labels=all_products.keys())
ax.legend(loc="upper left")

ax.set_xticks(product_sales_data.index)

ax.set_xlabel("Month Number")
ax.set_ylabel("Units Sold")

ax.set_title("Total Sales")

plt.tight_layout()
```

```
plt.show()
```


Total Sales
facecream
facewash
toothpaste
bathingsoap
shampoo
moisturizer
Units Sold
0
5000
10000
15000
20000
25000
30000
1
2
3
4
5
6
7
8
9
10
11
12
Month Number