In [24]:
```
import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)
import matplotlib.pyplot as plt
import seaborn as sns
```

In [26]:
```
data=pd.read_csv("https://raw.githubusercontent.com/omprakashreddy777/supermarket-sales-analysis/main/market.csv"
print(data.shape)
```

```
(1000, 17)
```

In [6]:
```
data.isnull().sum()
```

Out[6]:
```
Invoice ID                 0
Branch                     0
City                       0
Customer type              0
Gender                     0
Product line               0
Unit price                 0
Quantity                   0
Tax 5%                     0
Total                      0
Date                       0
Time                       0
Payment                    0
cogs                       0
gross margin percentage    0
gross income               0
Rating                     0
dtype: int64
```

In [7]:
```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1000 entries, 0 to 999
Data columns (total 17 columns):
 #   Column                   Non-Null Count  Dtype
---  ------                   --------------  -----
 0   Invoice ID               1000 non-null   object
 1   Branch                   1000 non-null   object
 2   City                     1000 non-null   object
 3   Customer type            1000 non-null   object
 4   Gender                   1000 non-null   object
 5   Product line             1000 non-null   object
 6   Unit price               1000 non-null   float64
 7   Quantity                 1000 non-null   int64
 8   Tax 5%                   1000 non-null   float64
 9   Total                    1000 non-null   float64
 10  Date                     1000 non-null   object
 11  Time                     1000 non-null   object
 12  Payment                  1000 non-null   object
 13  cogs                     1000 non-null   float64
 14  gross margin percentage  1000 non-null   float64
 15  gross income             1000 non-null   float64
 16  Rating                   1000 non-null   float64
dtypes: float64(7), int64(1), object(9)
memory usage: 132.9+ KB
```

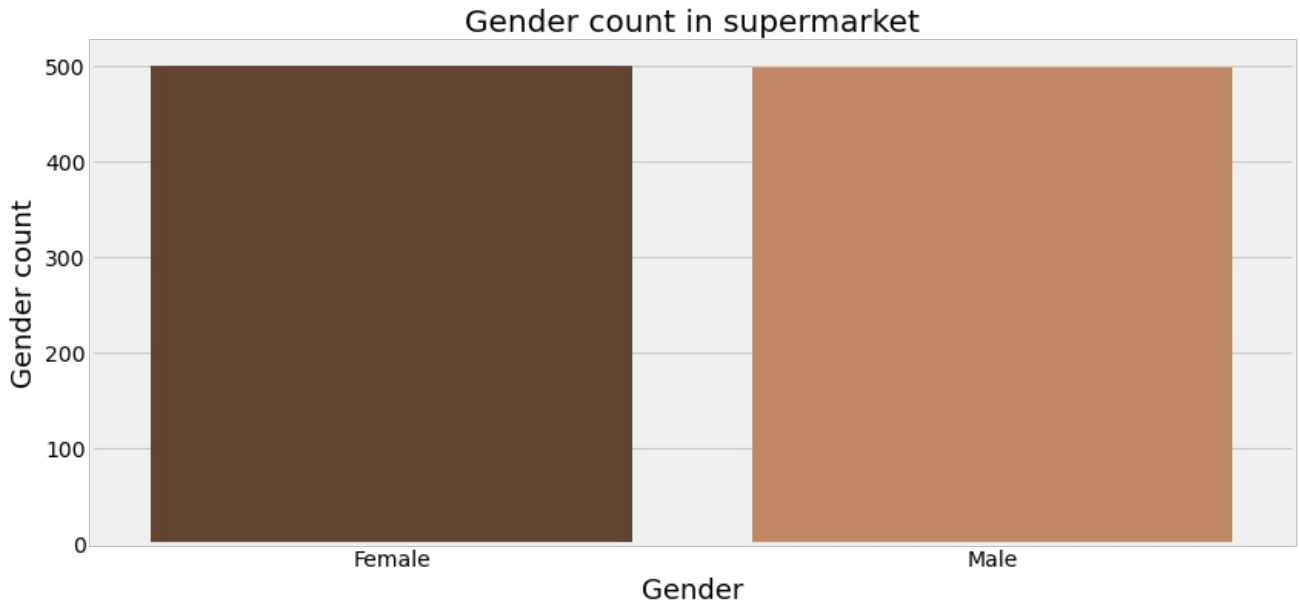
In [8]:
```
print("Dataset contains {} row and {} colums".format(data.shape[0],data.shape[1]))
```

```
Dataset contains 1000 row and 17 colums
```

In [9]:
```
plt.figure(figsize=(14,6))
plt.style.use('fivethirtyeight')
ax= sns.countplot('Gender', data=data , palette = 'copper')
ax.set_xlabel(xlabel= "Gender",fontsize=18)
ax.set_ylabel(ylabel = "Gender count", fontsize = 18)
ax.set_title(label = "Gender count in supermarket", fontsize = 20)
plt.show()
```

```
C:\Users\DELL\anaconda3\lib\site-packages\seaborn\_decorators.py:36: FutureWarning: Pass the following variable a
s a keyword arg: x. From version 0.12, the only valid positional argument will be `data`, and passing other argum
```

```
ents without an explicit keyword will result in an error or misinterpretation.
  warnings.warn(
```

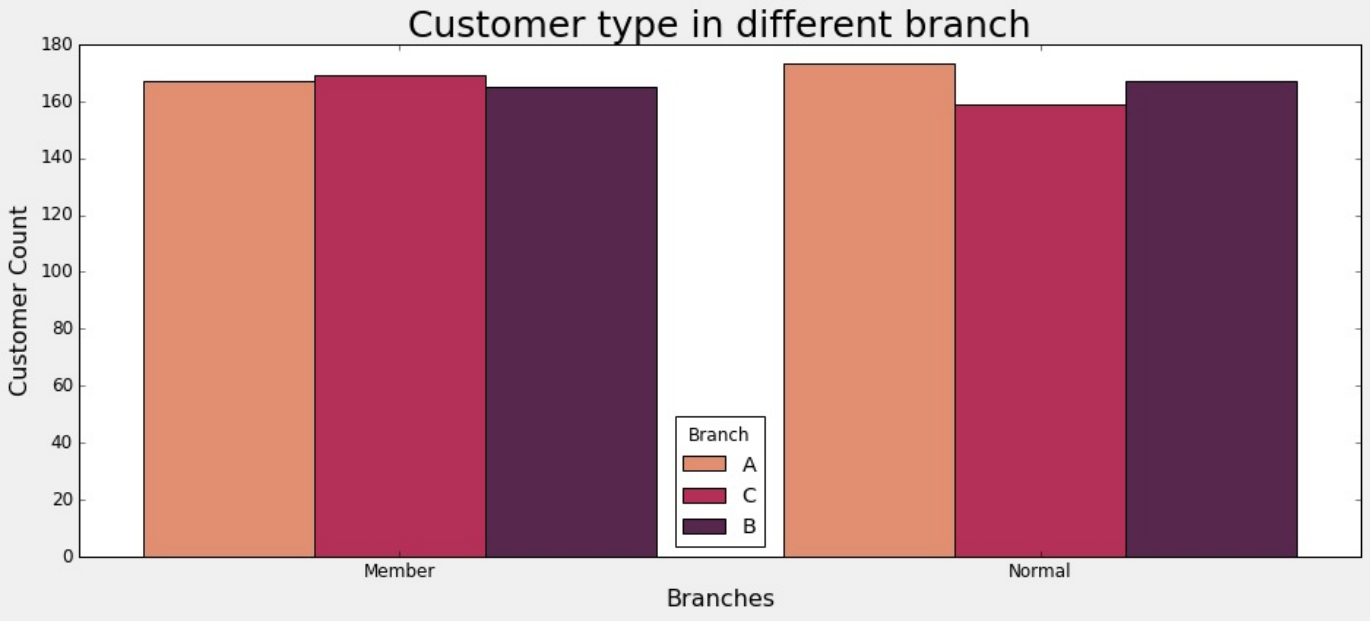


In [10]:
```
data.groupby(['Gender']). agg({'Total':'sum'})
```

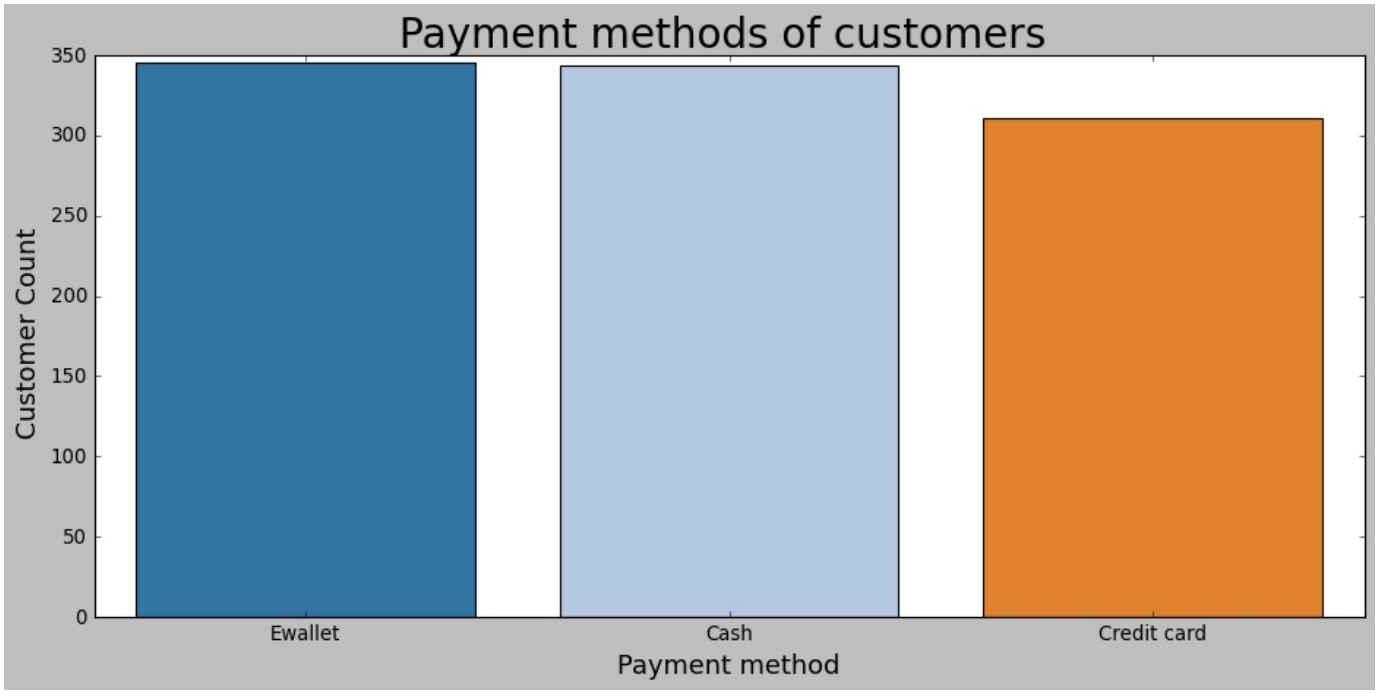
Out[10]:

Gender	Total
Female	167882.925
Male	155083.824

In [11]:
```
plt.figure(figsize=(14,6))
plt.style.use('classic')
ax = sns.countplot(x = "Customer type", hue = "Branch", data = data, palette= "rocket_r")
ax.set_title(label = "Customer type in different branch", fontsize = 25)
ax.set_xlabel(xlabel = "Branches", fontsize = 16)
ax.set_ylabel(ylabel = "Customer Count", fontsize = 16)
plt.show()
```

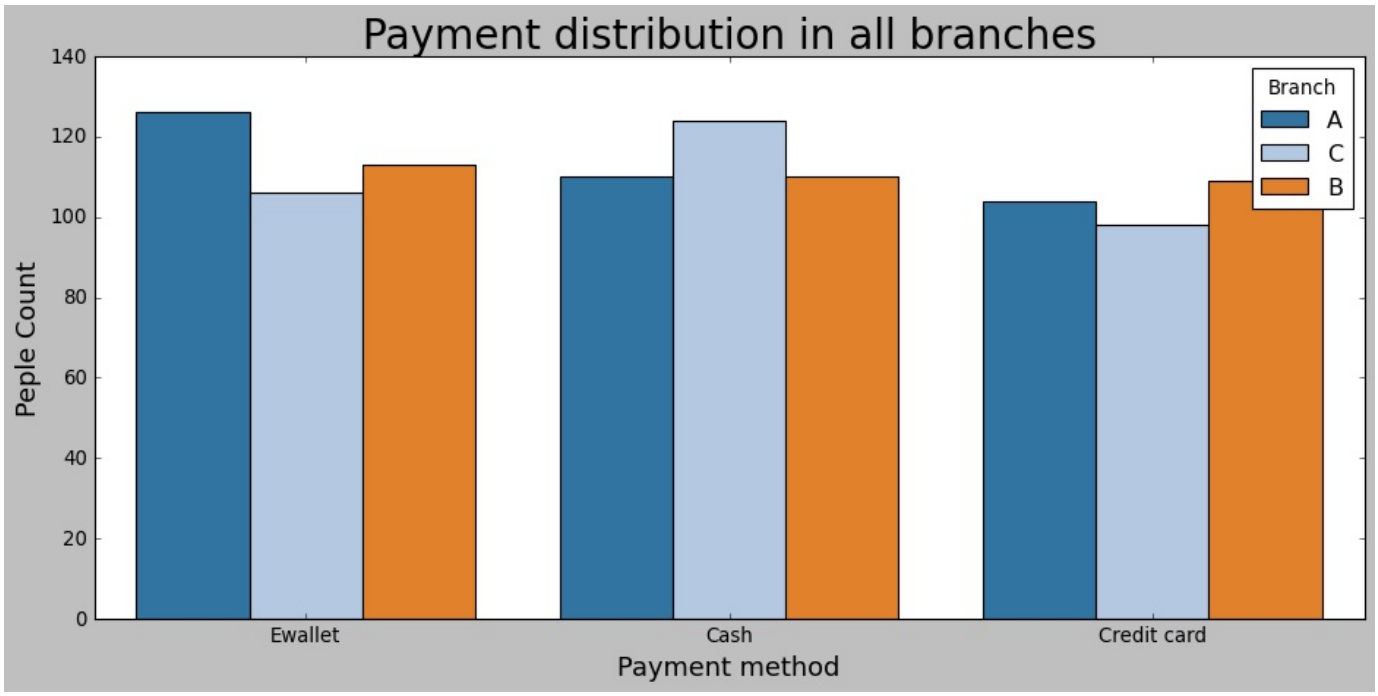


In [12]:
```
plt.figure(figsize = (14,6))
ax = sns.countplot(x = "Payment", data = data, palette = "tab20")
ax.set_title(label = "Payment methods of customers ", fontsize= 25)
ax.set_xlabel(xlabel = "Payment method", fontsize = 16)
ax.set_ylabel(ylabel = " Customer Count", fontsize = 16)
plt.show()
```



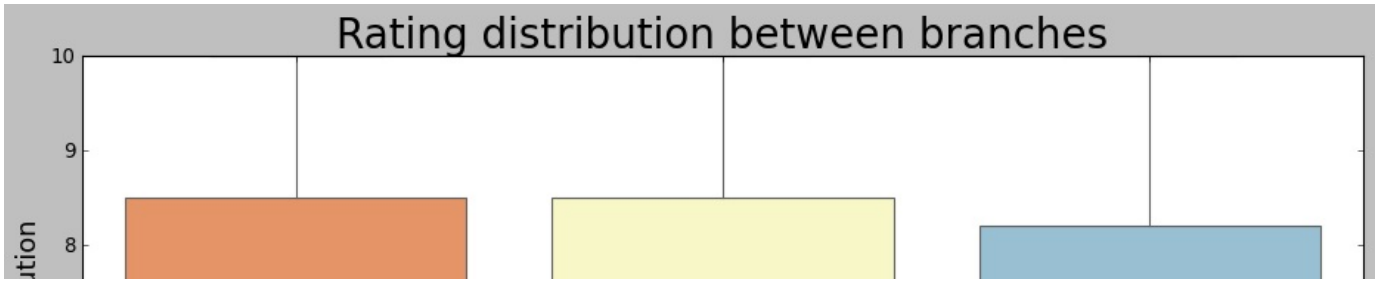
In [13]:

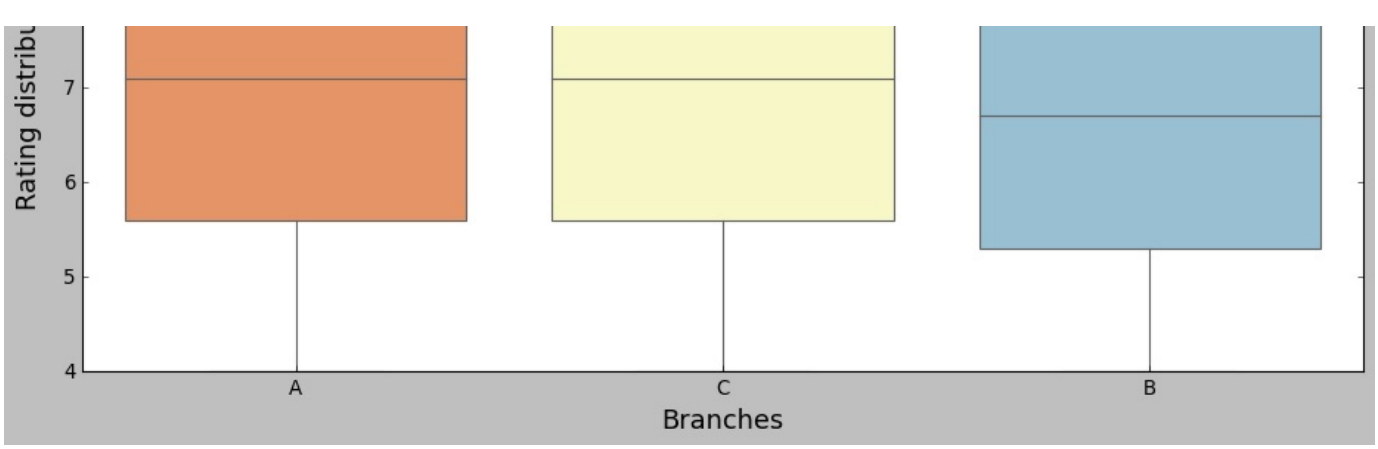
```
plt.figure(figsize = (14,6))
plt.style.use('classic')
ax = sns.countplot(x="Payment", hue = "Branch", data = data, palette= "tab20")
ax.set_title(label = "Payment distribution in all branches", fontsize= 25)
ax.set_xlabel(xlabel = "Payment method", fontsize = 16)
ax.set_ylabel(ylabel = "Peple Count", fontsize = 16)
plt.show()
```



In [14]:

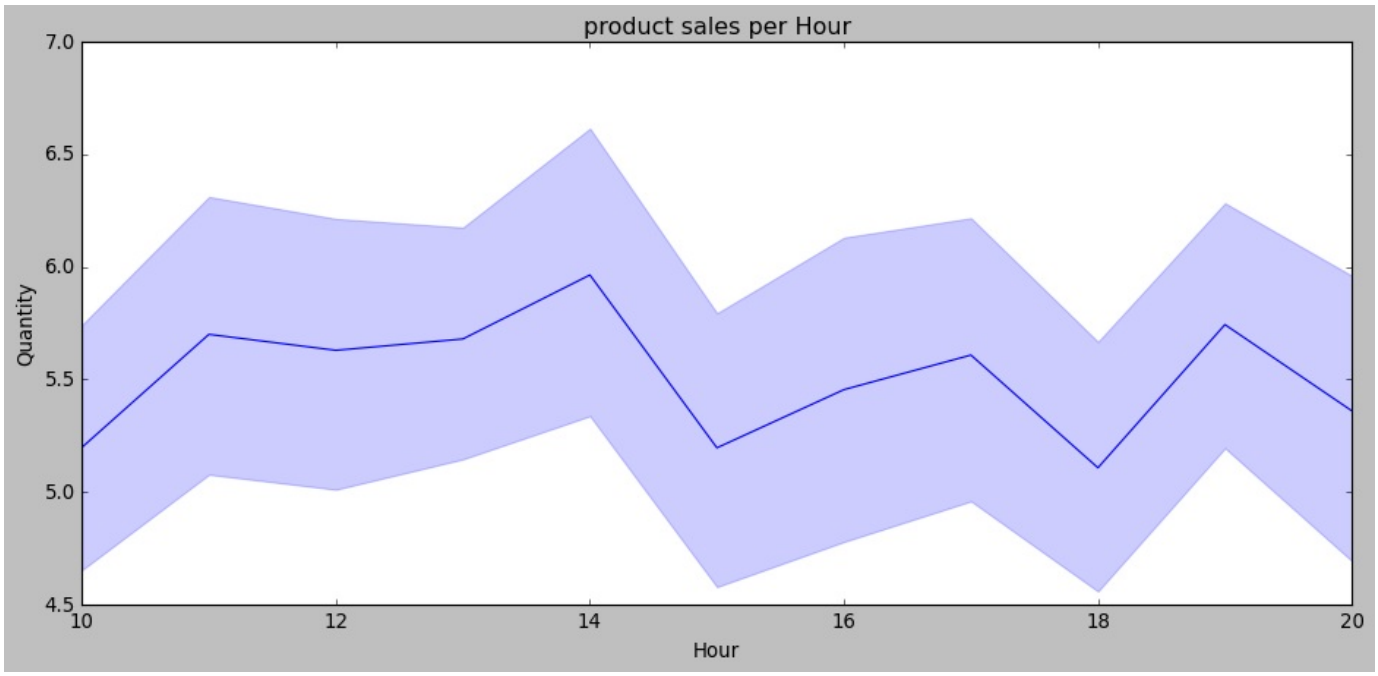
```
plt.figure(figsize=(14,6))
ax = sns.boxplot(x="Branch", y = "Rating" ,data =data, palette= "RdYlBu")
ax.set_title("Rating distribution between branches", fontsize = 25)
ax.set_xlabel(xlabel = "Branches", fontsize = 16)
ax.set_ylabel(ylabel = "Rating distribution", fontsize = 16)
plt.show()
```





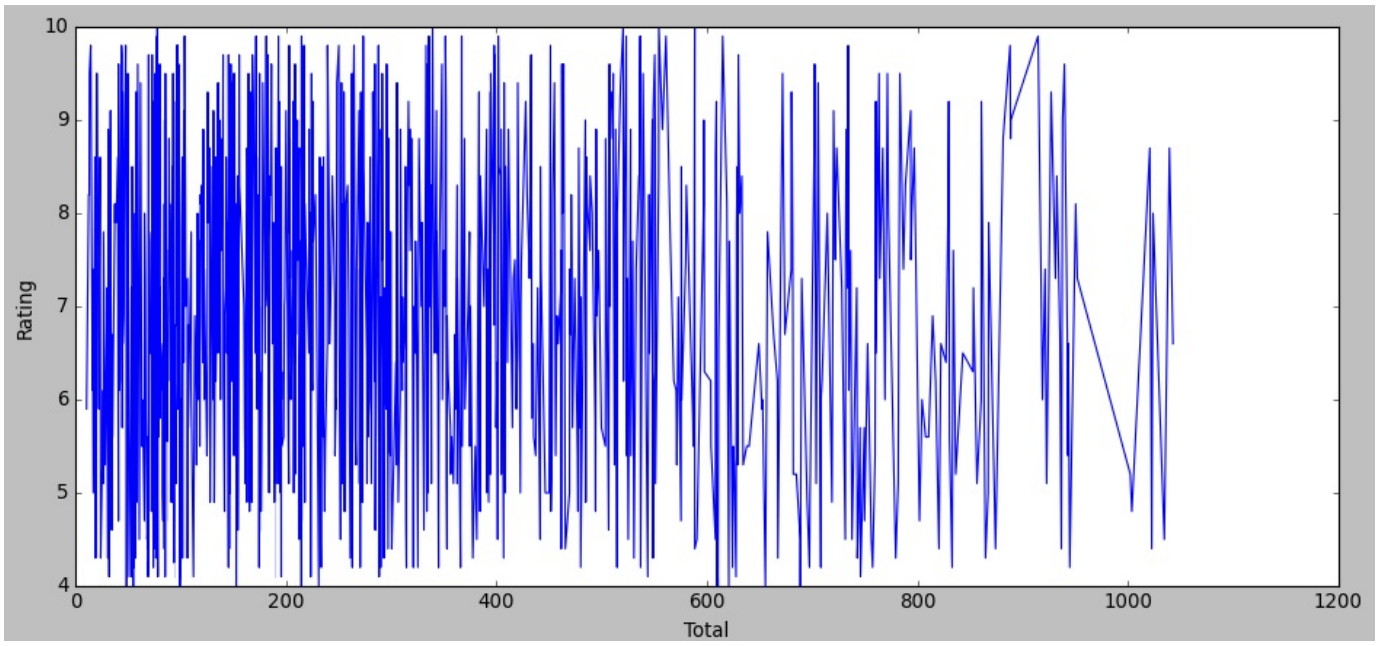
In [15]:

```
data["Time"]= pd.to_datetime(data["Time"])
data["Hour"]= (data["Time"]).dt.hour
plt.figure(figsize=(14,6))
plt.style.use('classic')
SalesTime = sns.lineplot(x="Hour", y ="Quantity", data = data).set_title("product sales per Hour")
plt.show()
```



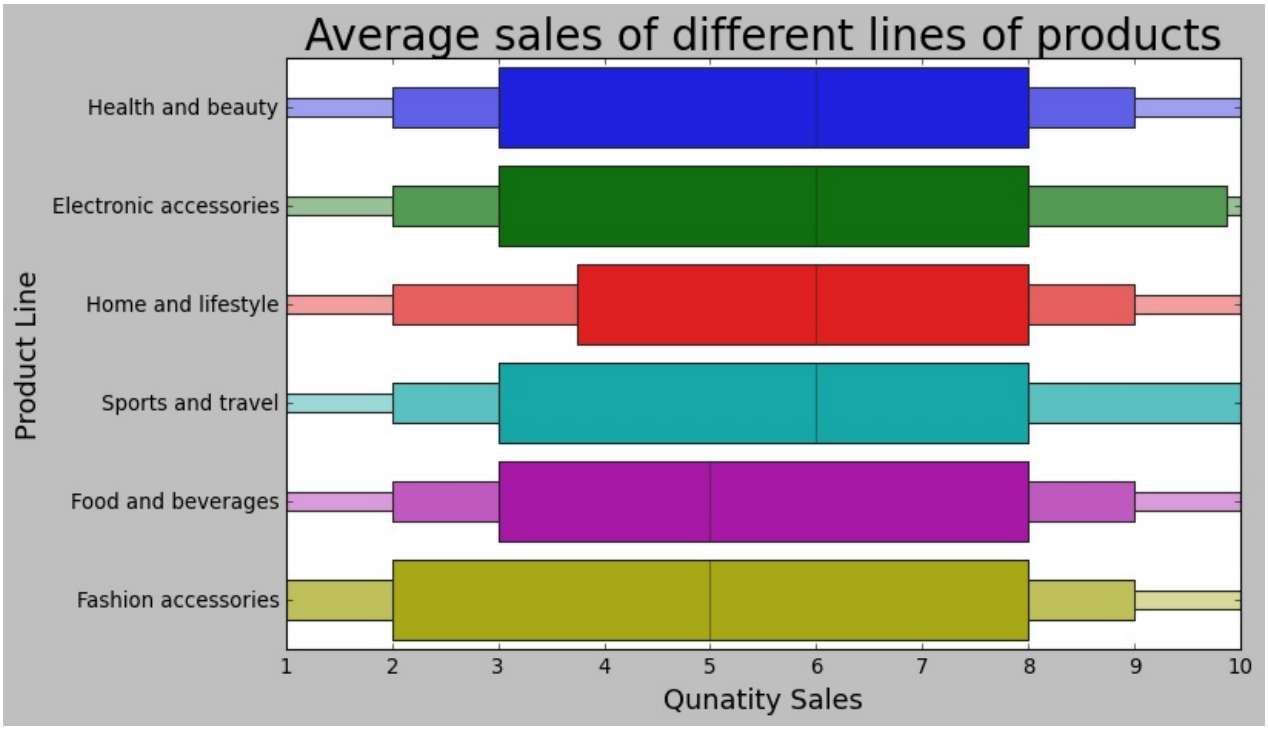
In [16]:

```
plt.figure(figsize=(14,6))
plt.style.use('classic')
rating_vs_sales = sns.lineplot(x="Total", y= "Rating", data=data)
plt.show()
```



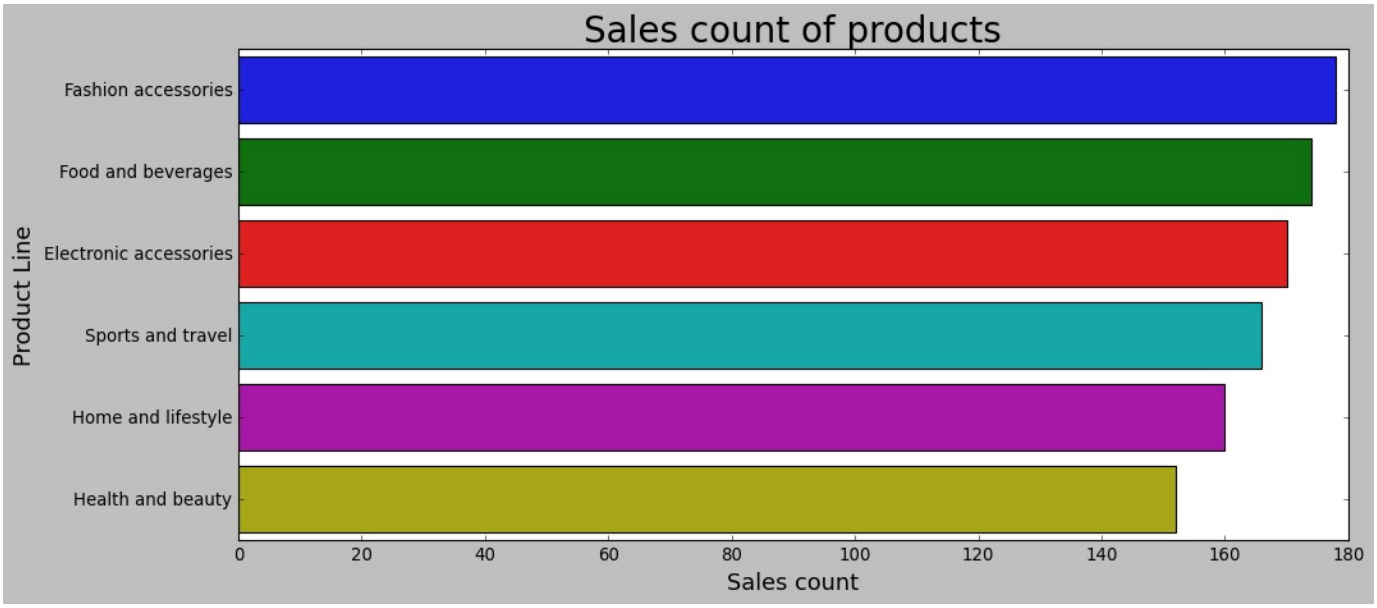
In [17]:

```
plt.figure(figsize=(10,6))
plt.style.use('classic')
ax = sns.boxenplot(x = "Quantity", y = "Product line", data = data,)
ax.set_title(label = "Average sales of different lines of products", fontsize = 25)
ax.set_xlabel(xlabel = "Qunatity Sales",fontsize = 16)
ax.set_ylabel(ylabel = "Product Line", fontsize = 16)
plt.show()
```



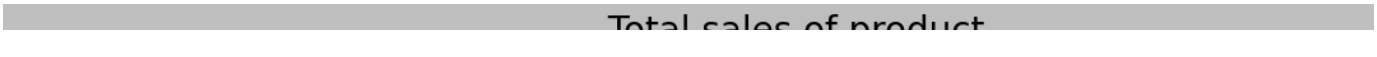
In [18]:

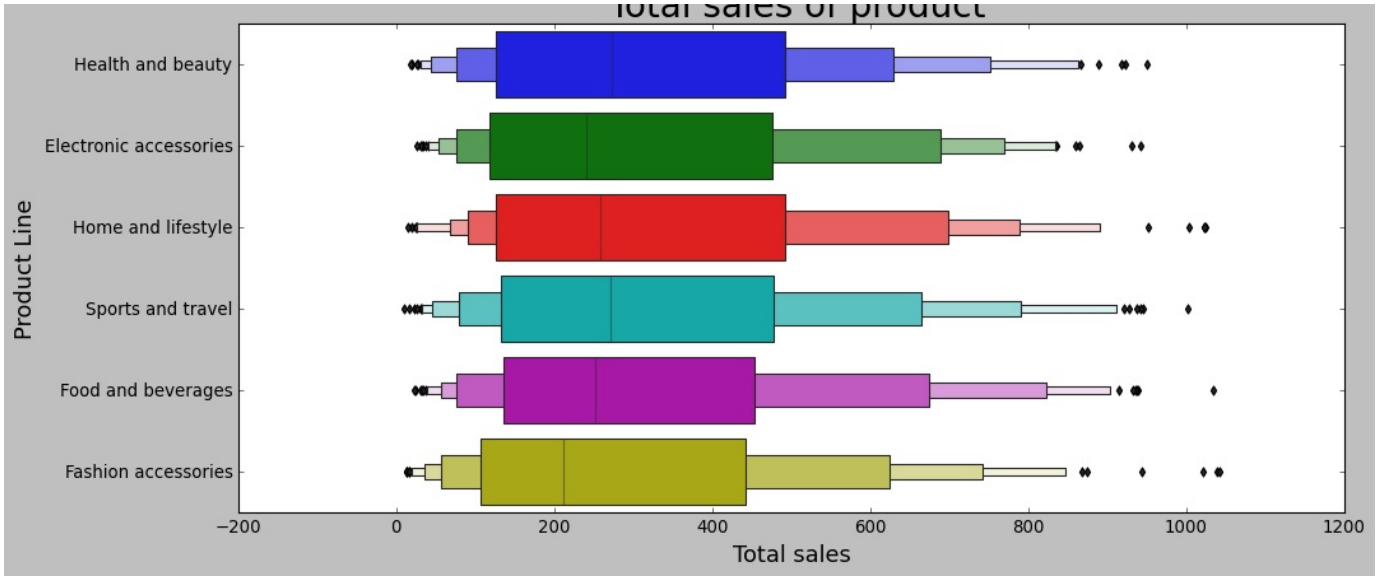
```
plt.figure(figsize=(14,6))
ax = sns.countplot(y='Product line', data=data, order = data['Product line'].value_counts().index)
ax.set_title(label = "Sales count of products", fontsize = 25)
ax.set_xlabel(xlabel = "Sales count", fontsize = 16)
ax.set_ylabel(ylabel= "Product Line", fontsize = 16)
plt.show()
```



In [19]:

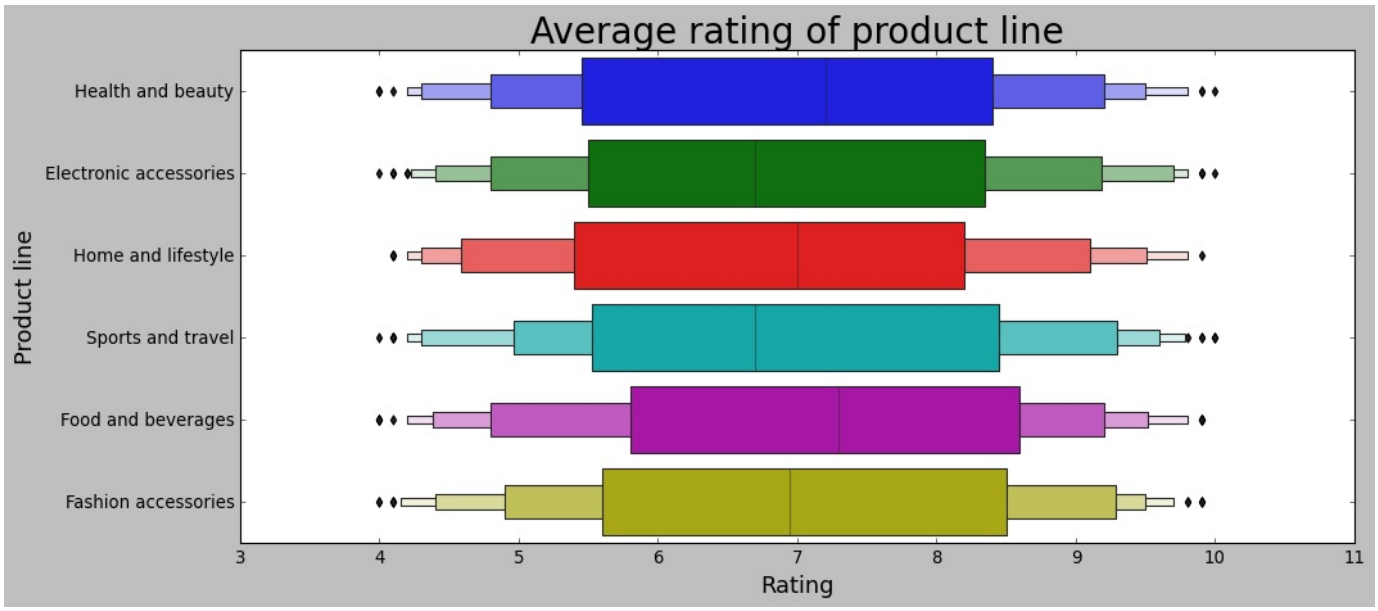
```
plt.figure(figsize=(14,6))
plt.style.use('classic')
ax = sns.boxenplot(y= "Product line", x= "Total", data = data)
ax.set_title(label = " Total sales of product", fontsize = 25)
ax.set_xlabel(xlabel = "Total sales", fontsize = 16)
ax.set_ylabel(ylabel = "Product Line", fontsize = 16)
plt.show()
```





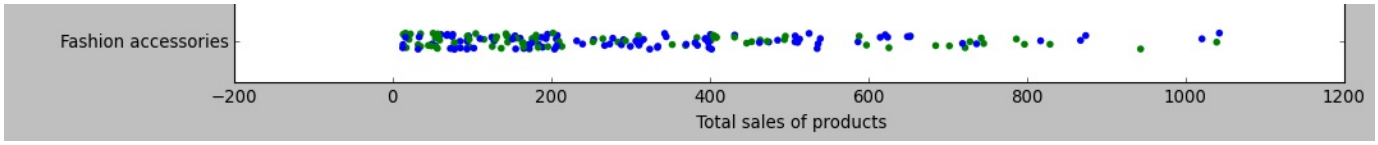
In [20]:

```
plt.figure(figsize = (14,6))
plt.style.use('classic')
ax = sns.boxenplot(y = "Product line", x = "Rating", data = data)
ax.set_title("Average rating of product line", fontsize = 25)
ax.set_xlabel("Rating", fontsize = 16)
ax.set_ylabel("Product line", fontsize = 16)
plt.show()
```



In [21]:

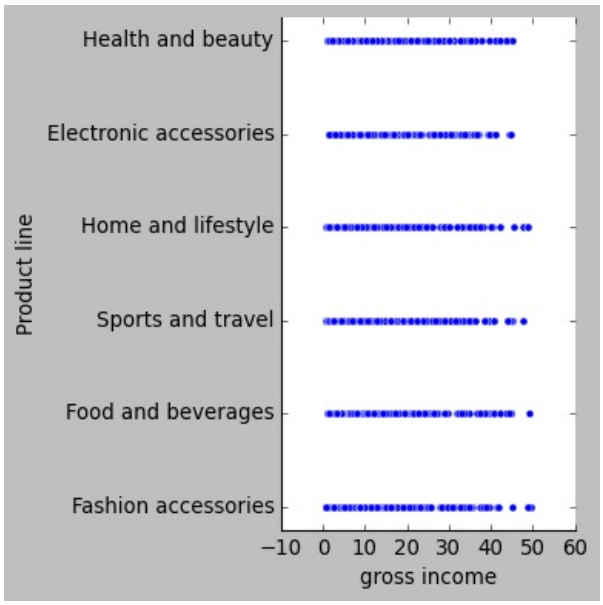
```
plt.style.use('classic')
plt.figure(figsize = (14,6))
ax= sns.stripplot(y= "Product line", x = "Total", hue = "Gender", data = data)
ax.set_title(label = "Product sales on the basis of gender")
ax.set_xlabel(xlabel = " Total sales of products")
ax.set_ylabel(ylabel = "Product Line")
plt.show()
```



In [22]:

```
plt.figure(figsize = (14,6))
plt.style.use('classic')
ax = sns.relplot(y= "Product line", x = "gross income", data = data)
# ax.set_title(label = "Products and Gross income")
# ax.set_xlabel(xlabel = "Total gross income")
# ax.set_ylabel(ylabel = "Product line")
plt.show()
```

```
<Figure size 1120x480 with 0 Axes>
```



In [ ]: