In [1]:
```
pip install openpyxl
```

```
Requirement already satisfied: openpyxl in /srv/conda/envs/notebook/lib/python3.7/site-packages (3.0.7)
Requirement already satisfied: et-xmlfile in /srv/conda/envs/notebook/lib/python3.7/site-packages (from openpyxl) (1.
1.0)
Note: you may need to restart the kernel to use updated packages.
```

In [2]:
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

In [3]:
```
data=pd.read_excel("Top 10 Chocolate Bars.xlsx")
```

In [4]:
```
data
```

Out[4]:

| | Brand | Age Group | Rank |
|---|---|---|---|
| **0** | Mars | 18-24 | 1.0 |
| **1** | Galaxy | 18-24 | 2.0 |
| **2** | Dairy Milk | 18-24 | 3.0 |
| **3** | Snickers | 18-24 | 4.0 |
| **4** | Twix | 18-24 | 5.0 |
| **5** | Wispa | 18-24 | 6.0 |
| **6** | KitKat | 18-24 | 7.0 |
| **7** | Double Decker | 18-24 | 8.0 |
| **8** | Twirl | 18-24 | 9.0 |
| **9** | Crunchie | 18-24 | 10.0 |
| **10** | Boost | 18-24 | NaN |
| **11** | Bounty | 18-24 | NaN |

| | Brand | Age Group | Rank |
|---|---|---|---|
| **12** | Picnic | 18-24 | NaN |
| **13** | Mars | 35-44 | 1.0 |
| **14** | Galaxy | 35-44 | 2.0 |
| **15** | Snickers | 35-44 | 3.0 |
| **16** | Dairy Milk | 35-44 | 4.0 |
| **17** | Twix | 35-44 | 5.0 |
| **18** | Wispa | 35-44 | 6.0 |
| **19** | Double Decker | 35-44 | 7.0 |
| **20** | Boost | 35-44 | 8.0 |
| **21** | Twirl | 35-44 | 9.0 |
| **22** | KitKat | 35-44 | 10.0 |
| **23** | Bounty | 35-44 | NaN |
| **24** | Crunchie | 35-44 | NaN |
| **25** | Picnic | 35-44 | NaN |
| **26** | Mars | 65+ | 1.0 |
| **27** | Galaxy | 65+ | 2.0 |
| **28** | Snickers | 65+ | 3.0 |
| **29** | Twix | 65+ | 4.0 |
| **30** | KitKat | 65+ | 5.0 |
| **31** | Crunchie | 65+ | 6.0 |
| **32** | Bounty | 65+ | 7.0 |
| **33** | Picnic | 65+ | 8.0 |
| **34** | Twirl | 65+ | 9.0 |
| **35** | Dairy Milk | 65+ | 10.0 |
| **36** | Boost | 65+ | NaN |

| | Brand | Age Group | Rank |
|---|---|---|---|
| **37** | Double Decker | 65+ | NaN |
| **38** | Wispa | 65+ | NaN |

In [5]:
```
df=pd.DataFrame(data)
```

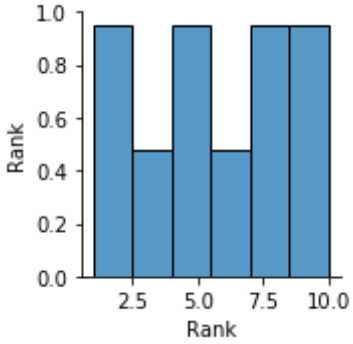
In [6]:
```
print(data)
```

```
             Brand Age Group  Rank
0             Mars     18-24   1.0
1           Galaxy     18-24   2.0
2      Dairy Milk     18-24   3.0
3        Snickers     18-24   4.0
4            Twix     18-24   5.0
5           Wispa     18-24   6.0
6          KitKat     18-24   7.0
7   Double Decker     18-24   8.0
8           Twirl     18-24   9.0
9        Crunchie     18-24  10.0
10          Boost     18-24   NaN
11         Bounty     18-24   NaN
12         Picnic     18-24   NaN
13            Mars     35-44   1.0
14         Galaxy     35-44   2.0
15       Snickers     35-44   3.0
16     Dairy Milk     35-44   4.0
17           Twix     35-44   5.0
18          Wispa     35-44   6.0
19  Double Decker     35-44   7.0
20          Boost     35-44   8.0
21          Twirl     35-44   9.0
22         KitKat     35-44  10.0
23         Bounty     35-44   NaN
24       Crunchie     35-44   NaN
25         Picnic     35-44   NaN
26            Mars       65+   1.0
27         Galaxy       65+   2.0
28       Snickers       65+   3.0
29           Twix       65+   4.0
```

```
30         KitKat       65+   5.0
31       Crunchie       65+   6.0
32         Bounty       65+   7.0
33         Picnic       65+   8.0
34          Twirl       65+   9.0
35     Dairy Milk       65+  10.0
36          Boost       65+   NaN
37  Double Decker       65+   NaN
38          Wispa       65+   NaN
```

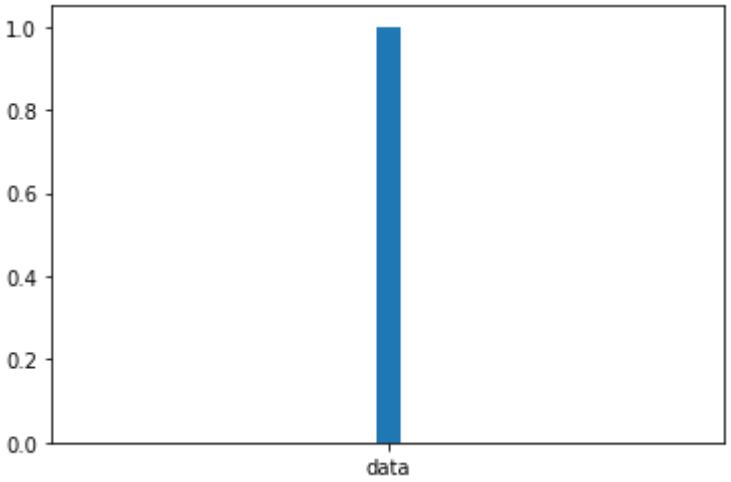
In [7]:
```
sns.pairplot(data)
```

Out[7]:
```
<seaborn.axisgrid.PairGrid at 0x7f6817f4c690>
```



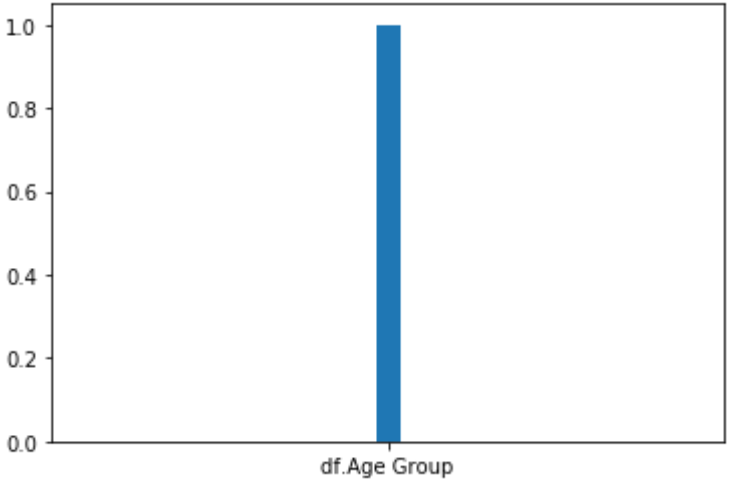

In [9]:
```
plt.hist('data',bins=25)
```

Out[9]:
```
(array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 1., 0., 0., 0., 0.,
        0., 0., 0., 0., 0., 0., 0., 0.]),
 array([-0.5 , -0.46, -0.42, -0.38, -0.34, -0.3 , -0.26, -0.22, -0.18,
        -0.14, -0.1 , -0.06, -0.02,  0.02,  0.06,  0.1 ,  0.14,  0.18,
         0.22,  0.26,  0.3 ,  0.34,  0.38,  0.42,  0.46,  0.5 ]),
 <a list of 25 Patch objects>)
```

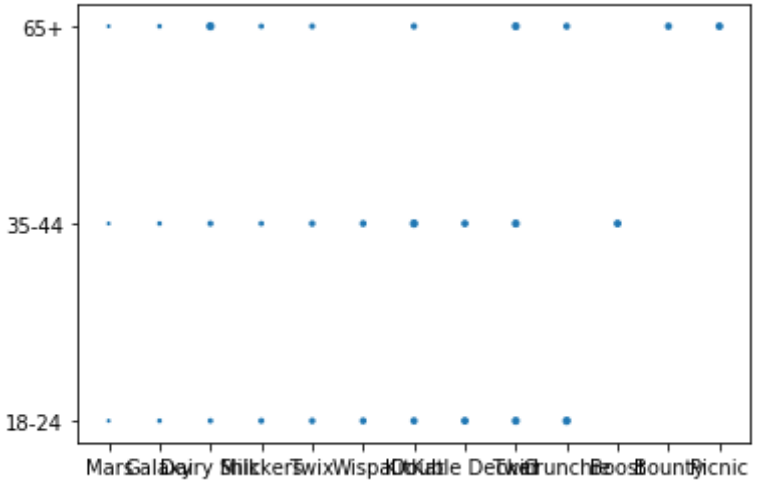



In [10]:
```
plt.hist('df.Age Group',bins=25)
```

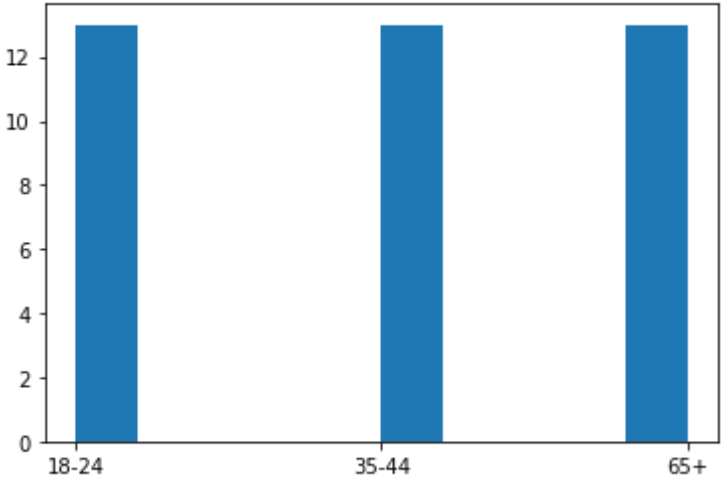
Out[10]:
```
(array([0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 0., 1., 0., 0., 0., 0.,
        0., 0., 0., 0., 0., 0., 0., 0.]),
 array([-0.5 , -0.46, -0.42, -0.38, -0.34, -0.3 , -0.26, -0.22, -0.18,
        -0.14, -0.1 , -0.06, -0.02,  0.02,  0.06,  0.1 ,  0.14,  0.18,
         0.22,  0.26,  0.3 ,  0.34,  0.38,  0.42,  0.46,  0.5 ]),
 <a list of 25 Patch objects>)
```



In [14]:
```
fig,ax=plt.subplots()
ax.scatter(df['Brand'],df['Age Group'],df['Rank'])
plt.show()
```




In [16]:
```
fig,ax=plt.subplots()
ax.hist(df['Age Group'])
plt.show()
```

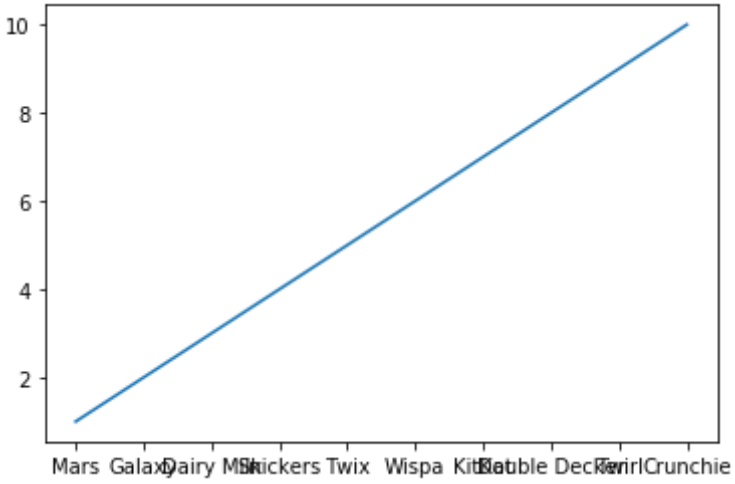


In [17]:
```
first=pd.DataFrame(df[(df['Age Group']=='18-24')])
print(first)
```

```
             Brand Age Group  Rank
0             Mars     18-24   1.0
1           Galaxy     18-24   2.0
2      Dairy Milk     18-24   3.0
3        Snickers     18-24   4.0
4            Twix     18-24   5.0
5           Wispa     18-24   6.0
6          KitKat     18-24   7.0
7   Double Decker     18-24   8.0
8           Twirl     18-24   9.0
9        Crunchie     18-24  10.0
10          Boost     18-24   NaN
11         Bounty     18-24   NaN
12         Picnic     18-24   NaN
```

In [18]:
```
plt.plot(first['Brand'],first['Rank'])
```

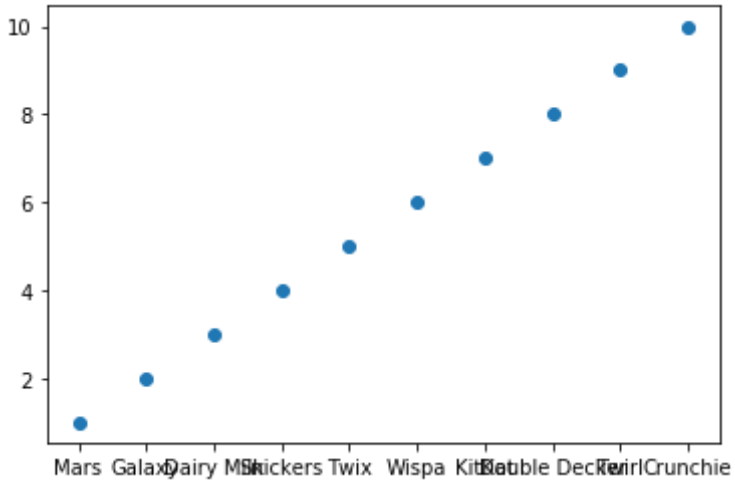
Out[18]:
```
[<matplotlib.lines.Line2D at 0x7f680f727b50>]
```




In [19]:
```
plt.scatter(first['Brand'],first['Rank'])
```

```
<matplotlib.collections.PathCollection at 0x7f680f6b6c10>
```

Out[19]:




In [20]:

```
mars=pd.DataFrame(df[(df['Brand']=='Mars')])
print(mars)
```

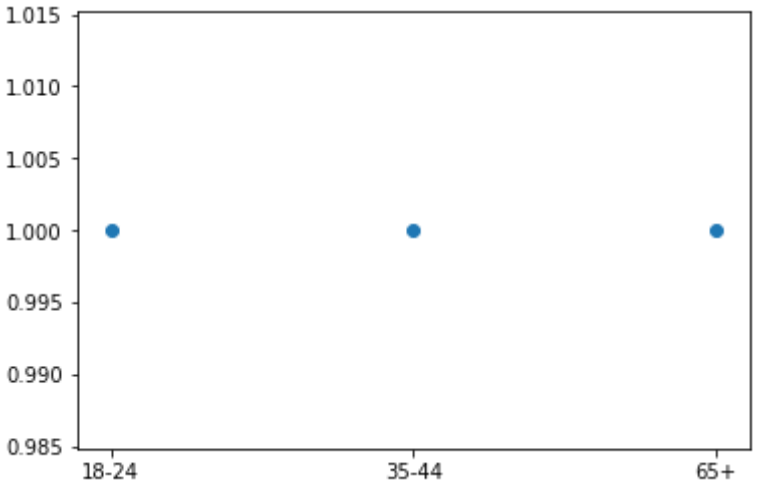
```
   Brand Age Group  Rank
0   Mars     18-24   1.0
13  Mars     35-44   1.0
26  Mars       65+   1.0
```

In [22]:

```
plt.scatter(mars['Age Group'],mars['Rank'])
```

Out[22]:

```
<matplotlib.collections.PathCollection at 0x7f680f5a8ad0>
```

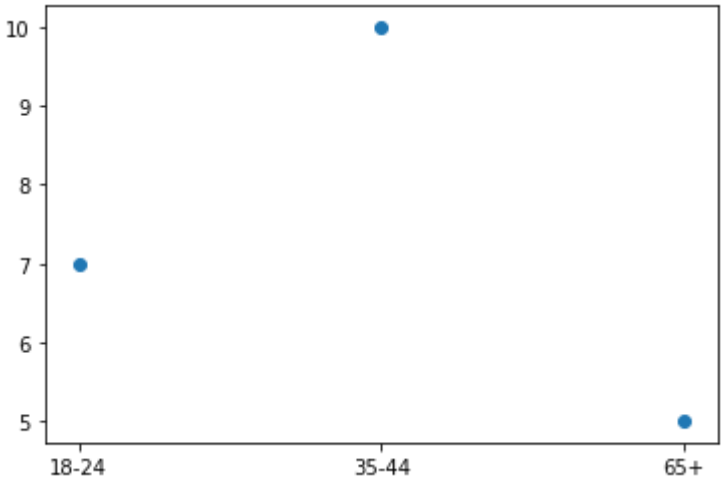



In [24]:
```
kitkat=pd.DataFrame(df[(df['Brand']=='KitKat')])
print(kitkat)
```

```
     Brand Age Group  Rank
6   KitKat     18-24   7.0
22  KitKat     35-44  10.0
30  KitKat       65+   5.0
```

In [25]:
```
plt.scatter(kitkat['Age Group'],kitkat['Rank'])
```

Out[25]:
```
<matplotlib.collections.PathCollection at 0x7f680f589a90>
```




In [ ]: