Data Visualization

In [1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

In [2]:
```
df = pd.read_csv(r"C:\Users\kallzz\Desktop\Data Analytics Stuff\Data Analyst - Boot Camp\Pyt
df
```

Out[2]:

	Date	Flavor Rating	Texture Rating	Overall Rating
0	1/1/2022	0.223090	0.040220	0.600129
1	1/2/2022	0.635886	0.938476	0.106264
2	1/3/2022	0.442323	0.044154	0.598112
3	1/4/2022	0.389128	0.549676	0.489353
4	1/5/2022	0.386887	0.519439	0.988280
5	1/6/2022	0.877984	0.193588	0.832827
6	1/7/2022	0.140995	0.325110	0.105147

In [3]:
```
df.set_index("Date",inplace=True)
```

In [4]:
```
df
```

Out[4]:

Date	Flavor Rating	Texture Rating	Overall Rating
1/1/2022	0.223090	0.040220	0.600129
1/2/2022	0.635886	0.938476	0.106264
1/3/2022	0.442323	0.044154	0.598112
1/4/2022	0.389128	0.549676	0.489353
1/5/2022	0.386887	0.519439	0.988280
1/6/2022	0.877984	0.193588	0.832827
1/7/2022	0.140995	0.325110	0.105147

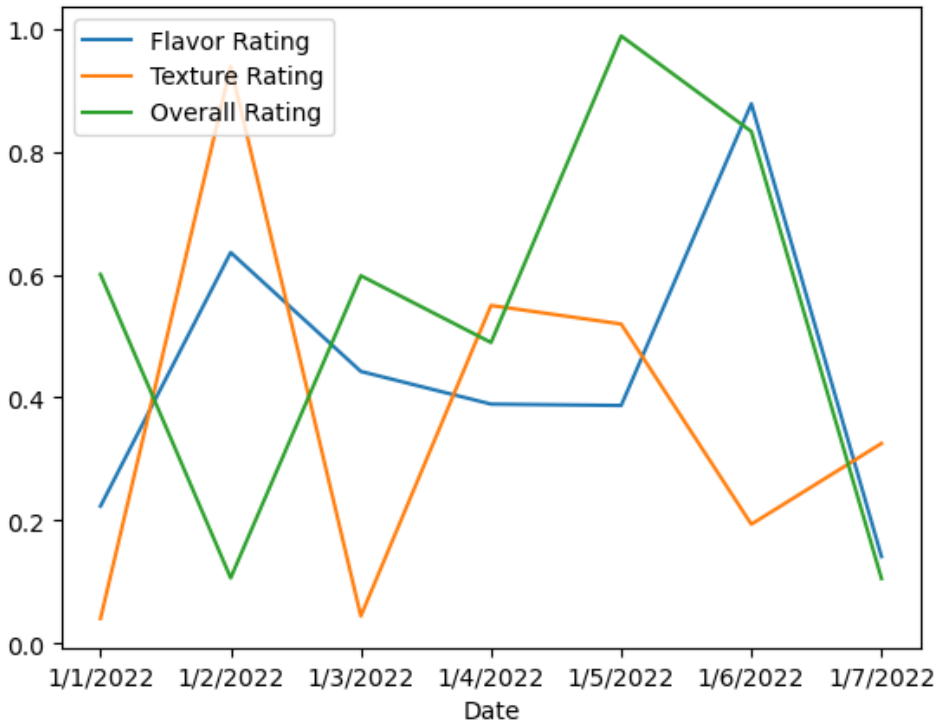
In [5]:
```
# styles are used to make different pre defined layouts
print(plt.style.available)
```

```
['Solarize_Light2', '_classic_test_patch', '_mpl-gallery', '_mpl-gallery-nogrid', 'bmh', 'c
lassic', 'dark_background', 'fast', 'fivethirtyeight', 'ggplot', 'grayscale', 'seaborn-v0_
8', 'seaborn-v0_8-bright', 'seaborn-v0_8-colorblind', 'seaborn-v0_8-dark', 'seaborn-v0_8-da
rk-palette', 'seaborn-v0_8-darkgrid', 'seaborn-v0_8-deep', 'seaborn-v0_8-muted', 'seaborn-v
0_8-notebook', 'seaborn-v0_8-paper', 'seaborn-v0_8-pastel', 'seaborn-v0_8-poster', 'seaborn
-v0_8-talk', 'seaborn-v0_8-ticks', 'seaborn-v0_8-white', 'seaborn-v0_8-whitegrid', 'tableau
-colorblind10']
```

In [ ]:
```
```

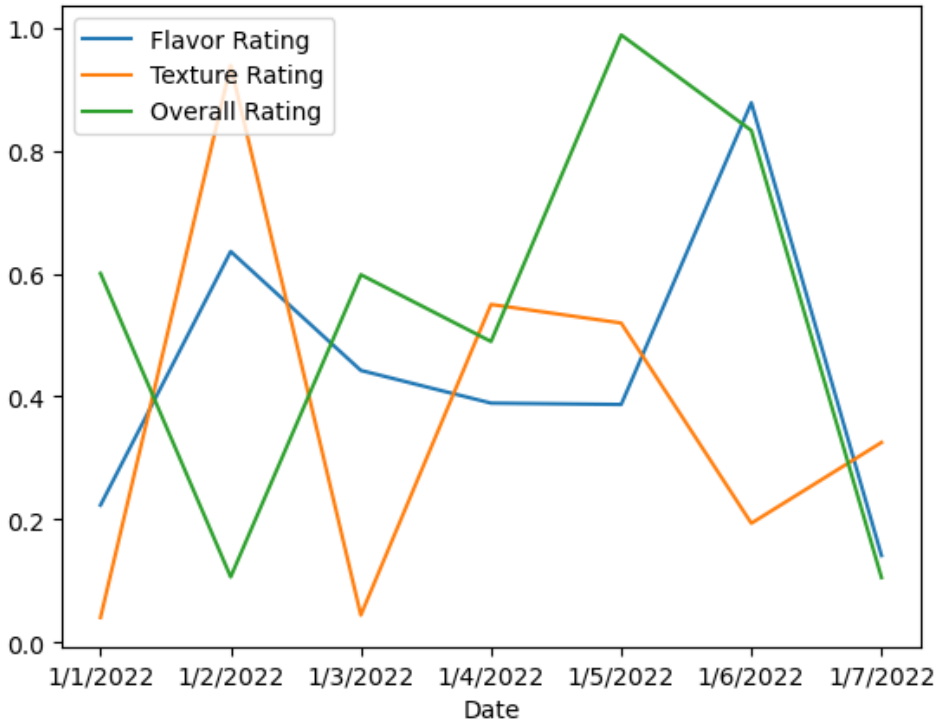
In [6]:
```
# plot function has a default visualization as Line
df.plot()
```

Out[6]: <Axes: xlabel='Date'>



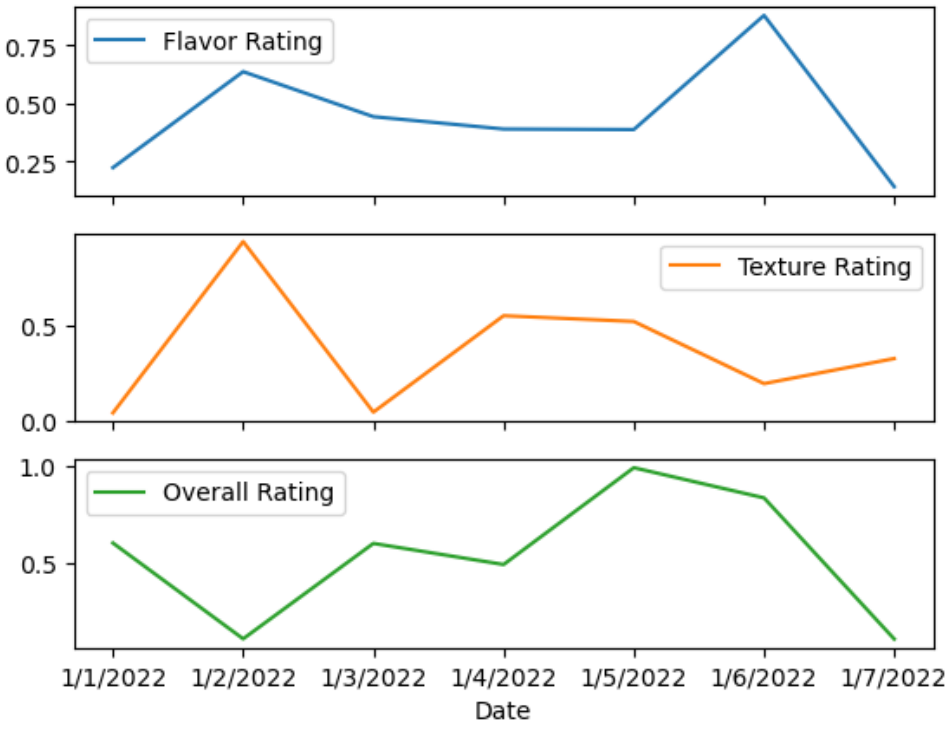
In [8]:
```
df.plot(kind = 'line')
```

Out[8]: <Axes: xlabel='Date'>



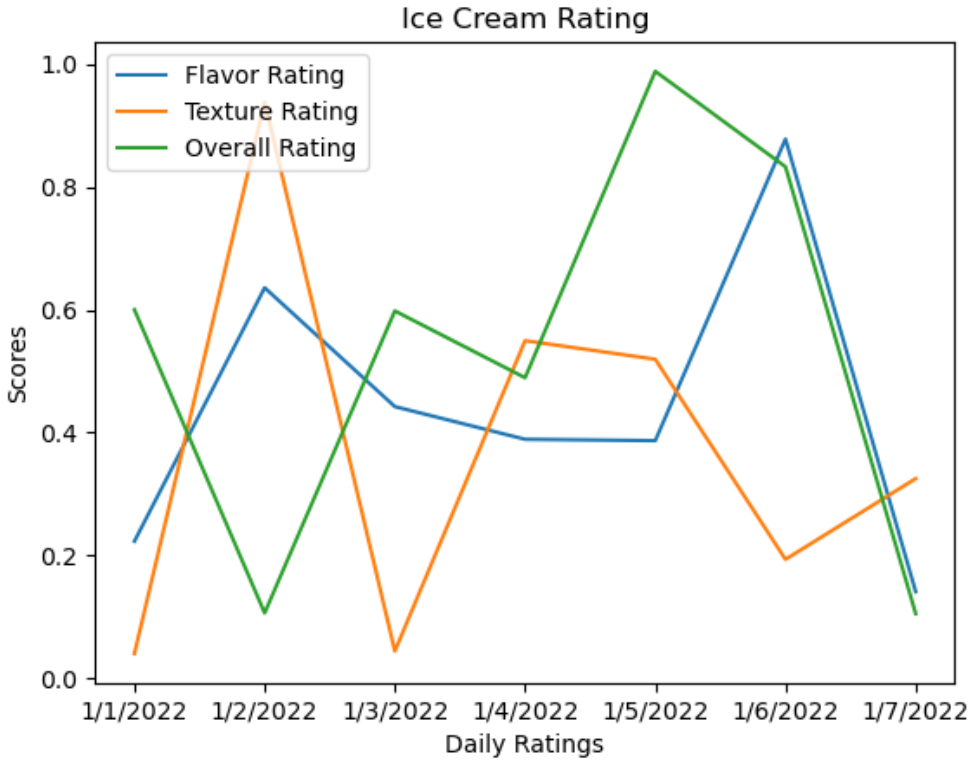
In [9]:
```
df.plot(kind = 'line', subplots = True)
```

Out[9]:
```
array([<Axes: xlabel='Date'>, <Axes: xlabel='Date'>,
       <Axes: xlabel='Date'>], dtype=object)
```



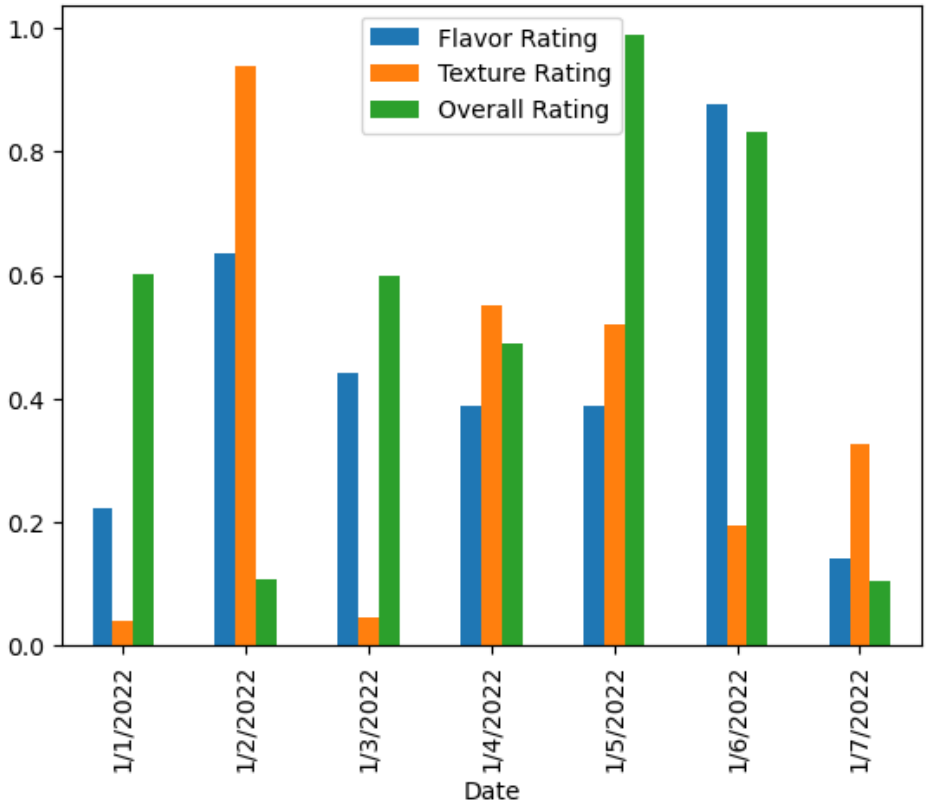
In [10]:
```
df.plot(kind = 'line', title = 'Ice Cream Rating', xlabel = 'Daily Ratings', ylabel = 'Score
```

Out[10]:
```
<Axes: title={'center': 'Ice Cream Rating'}, xlabel='Daily Ratings', ylabel='Scores'>
```



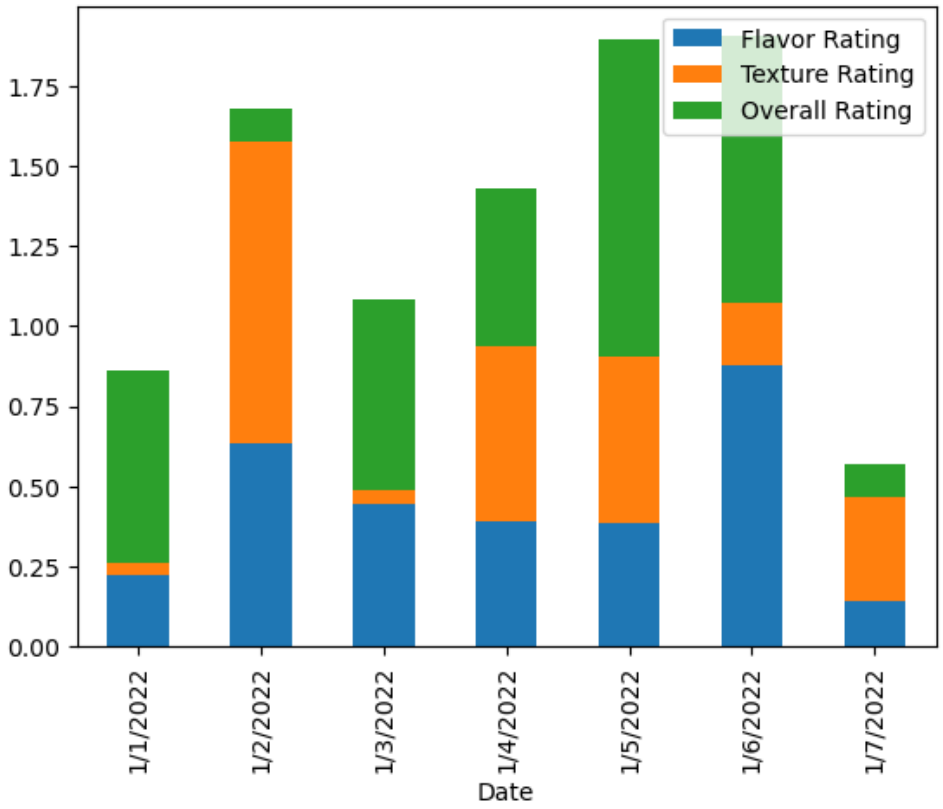
In [11]:
```
df.plot(kind = 'bar')
```

Out[11]: <Axes: xlabel='Date'>



In [12]:
```
df.plot(kind = 'bar', stacked = True)
```

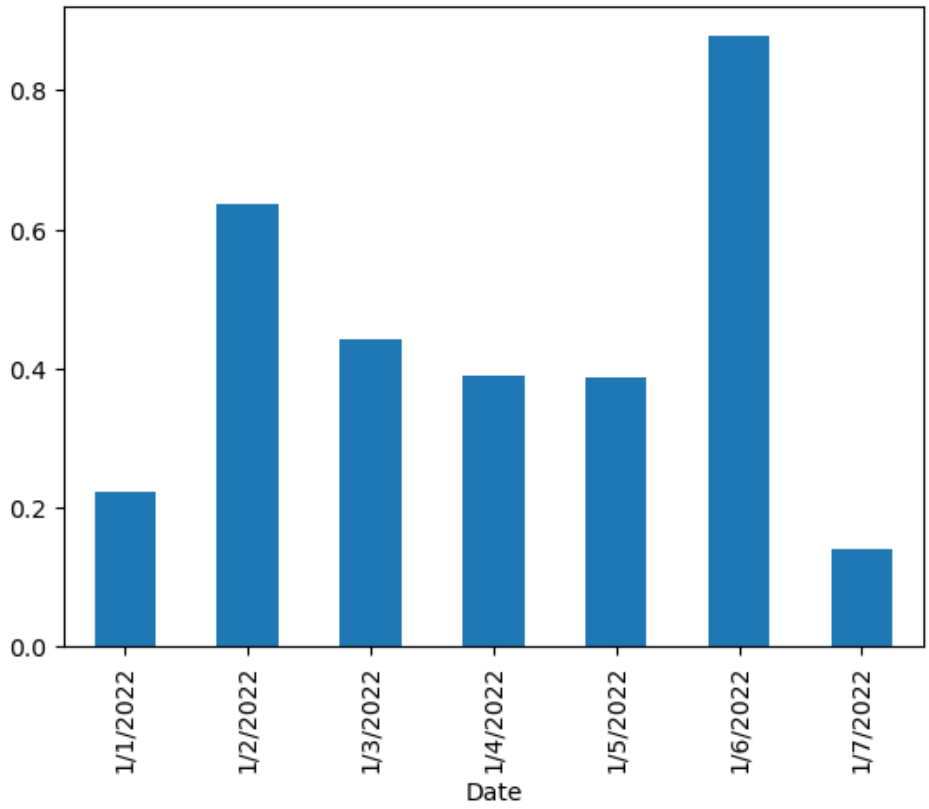
Out[12]: <Axes: xlabel='Date'>



visualize one variable

In [13]:
```
df['Flavor Rating'].plot(kind = 'bar')
```

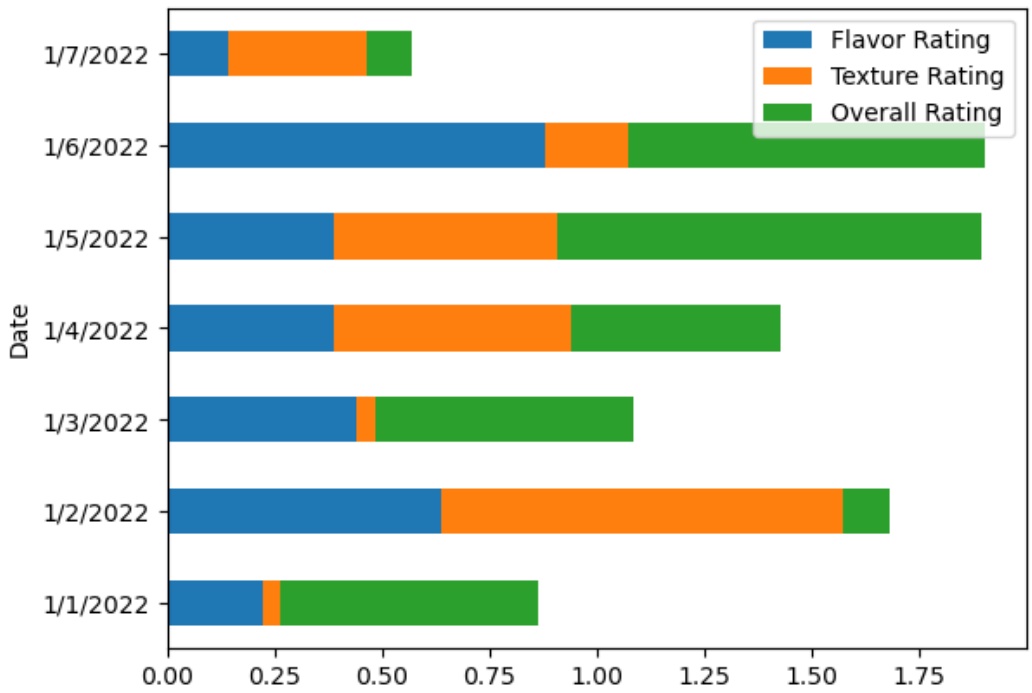
Out[13]: <Axes: xlabel='Date'>



Horizontal Bar

In [14]:
```
df.plot.barh(stacked = True)
```

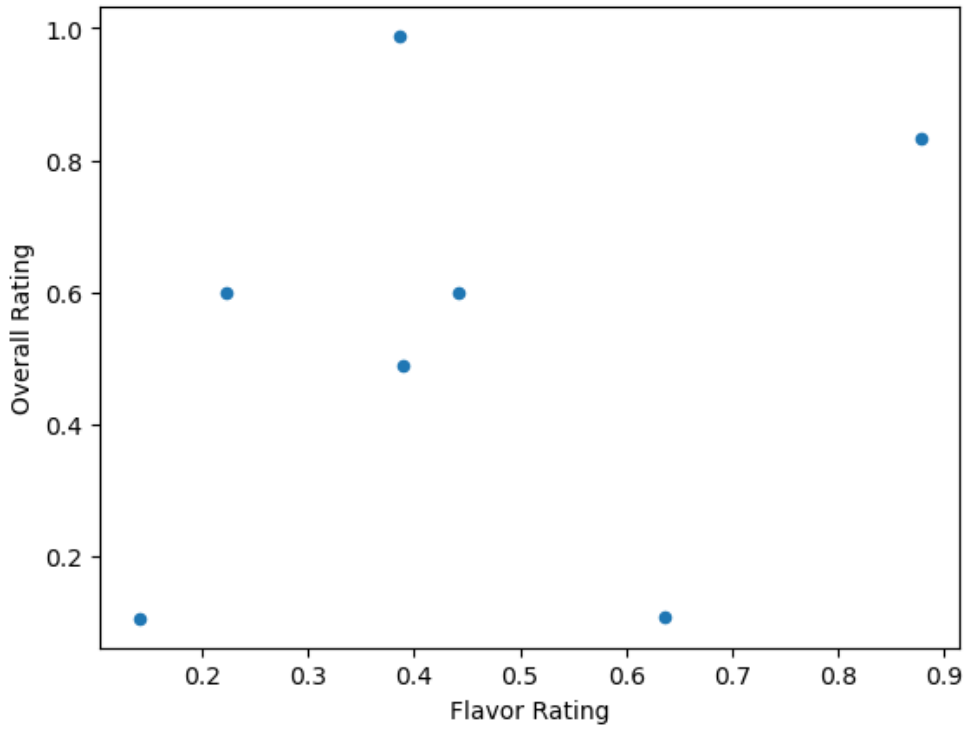
Out[14]: <Axes: ylabel='Date'>



Scatter Plot

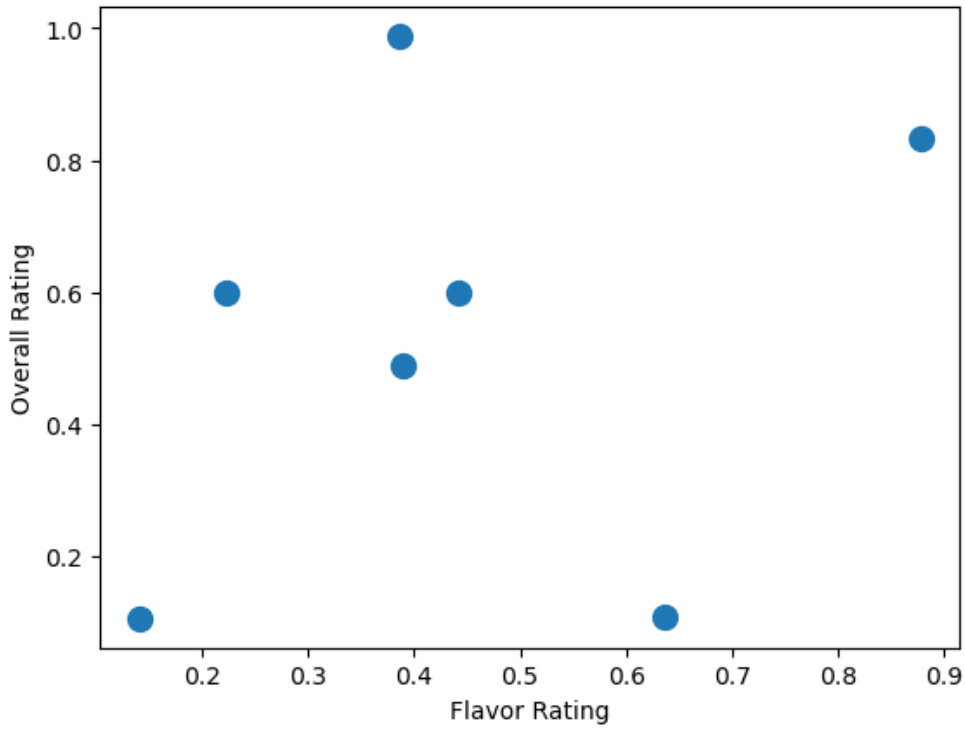
In [15]:
```
df.plot.scatter(x = 'Flavor Rating', y = 'Overall Rating')
```

Out[15]: <Axes: xlabel='Flavor Rating', ylabel='Overall Rating'>



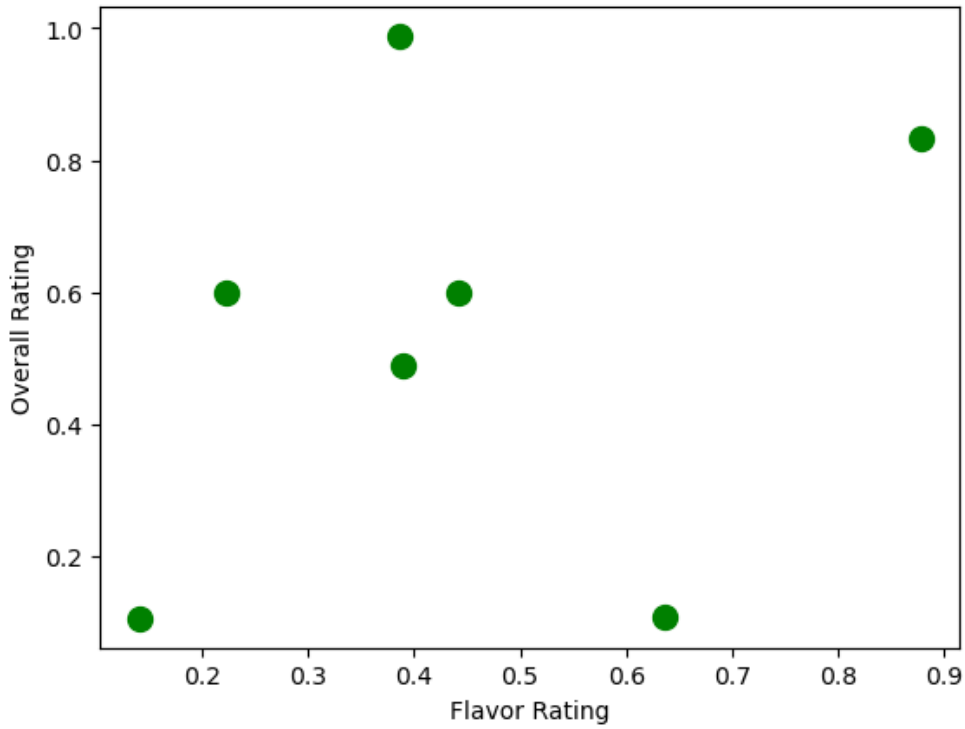
In [16]:
```
# increase size of dots
df.plot.scatter(x = 'Flavor Rating', y = 'Overall Rating', s = 100)
```

Out[16]: <Axes: xlabel='Flavor Rating', ylabel='Overall Rating'>



In [17]:
```
# change color of circles
df.plot.scatter(x = 'Flavor Rating', y = 'Overall Rating', s = 100, c = 'Green')
```

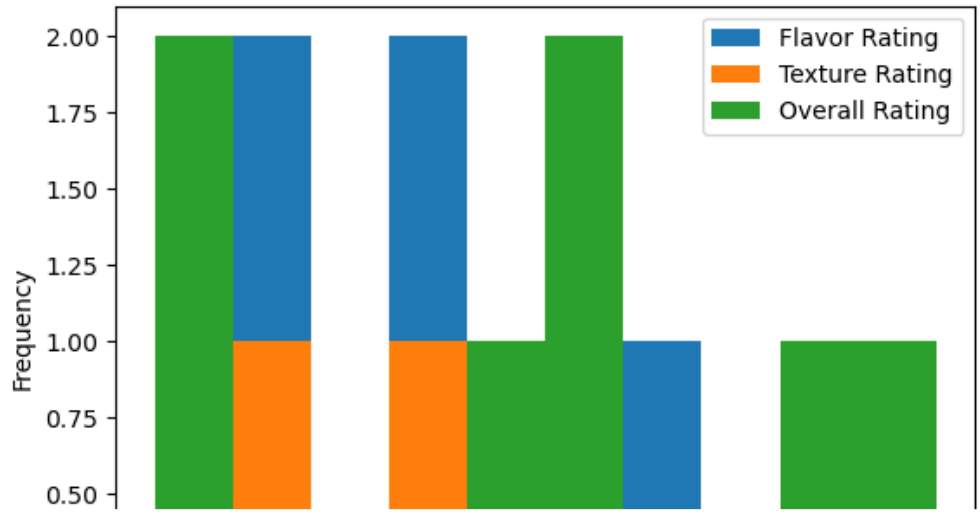
Out[17]: <Axes: xlabel='Flavor Rating', ylabel='Overall Rating'>



Histogram

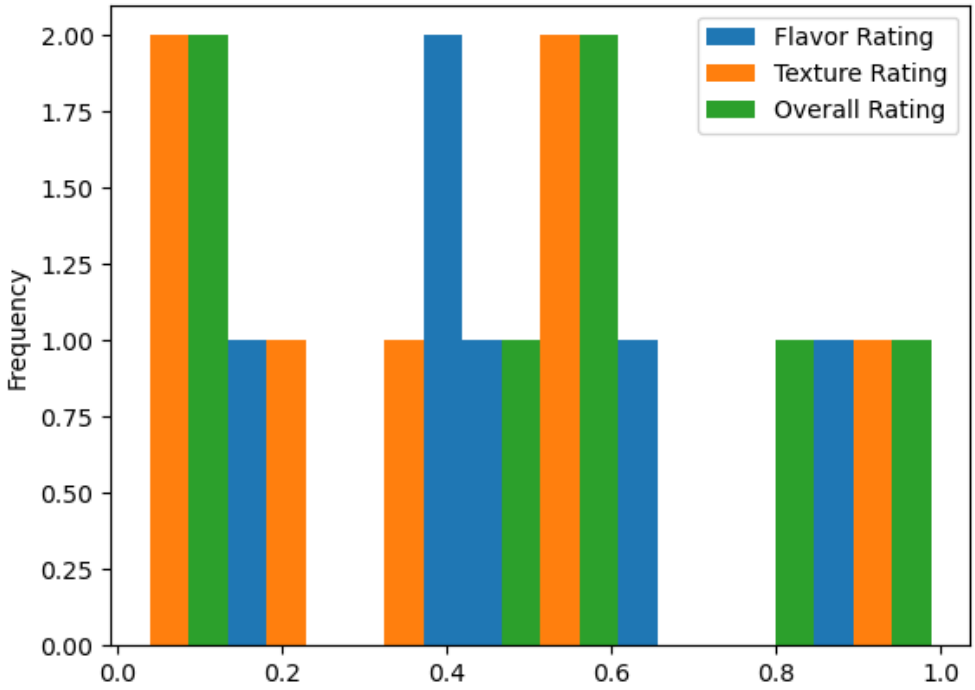
In [20]:
```
df.plot.hist()
```

Out[20]: <Axes: ylabel='Frequency'>



In [21]:
```
df.plot.hist(bins = 20)
```

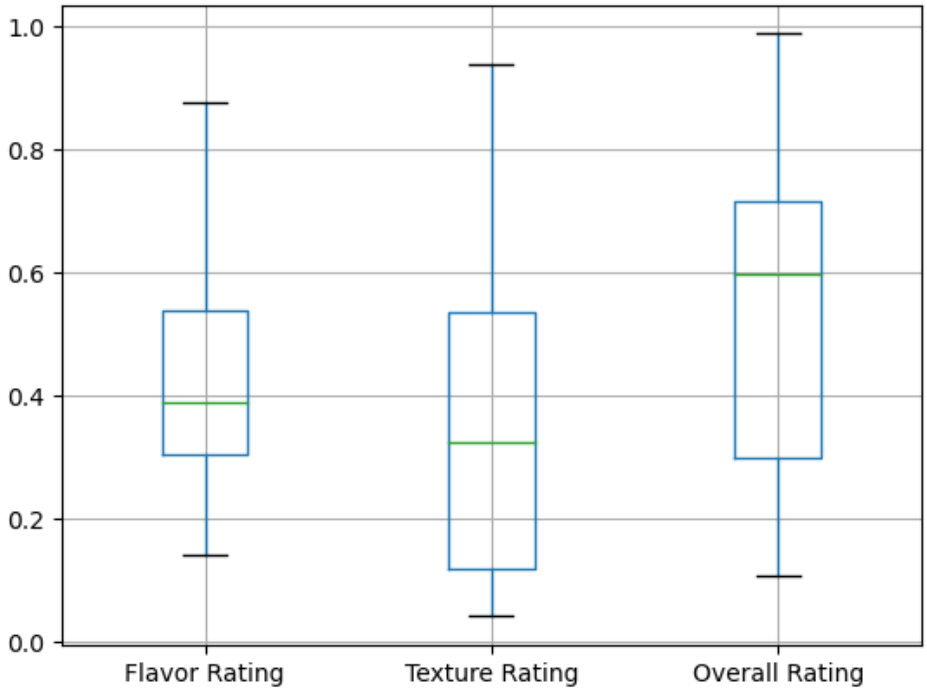
Out[21]:
```
<Axes: ylabel='Frequency'>
```



BoxPlot

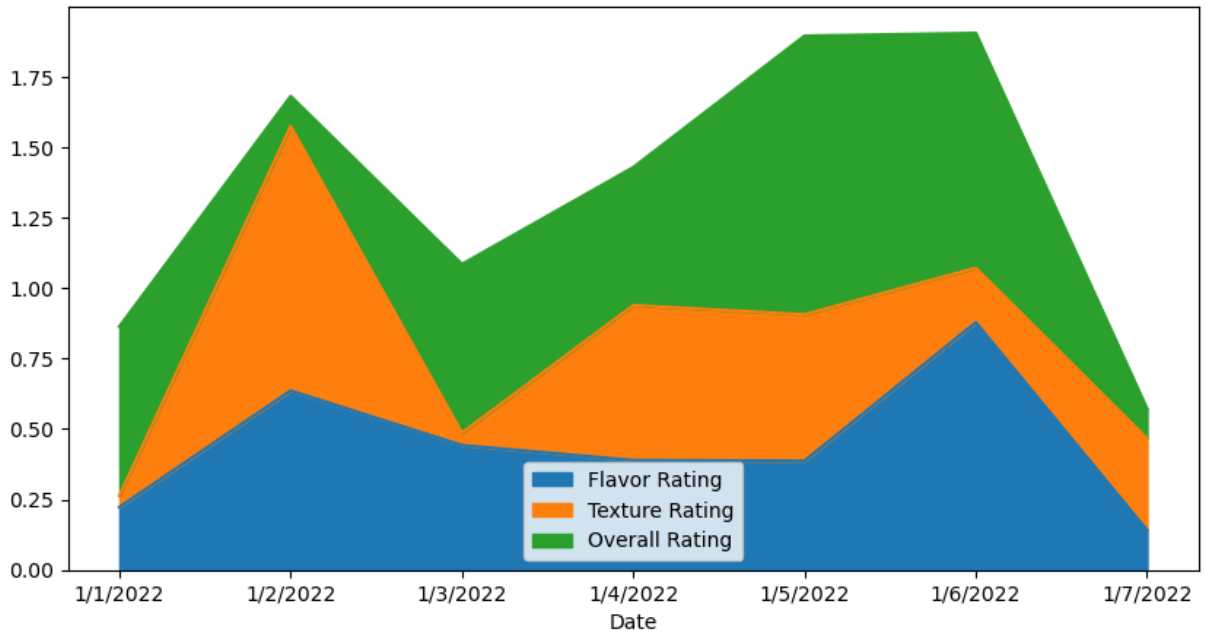
In [22]:
```
df.boxplot()
```

Out[22]:
```
<Axes: >
```



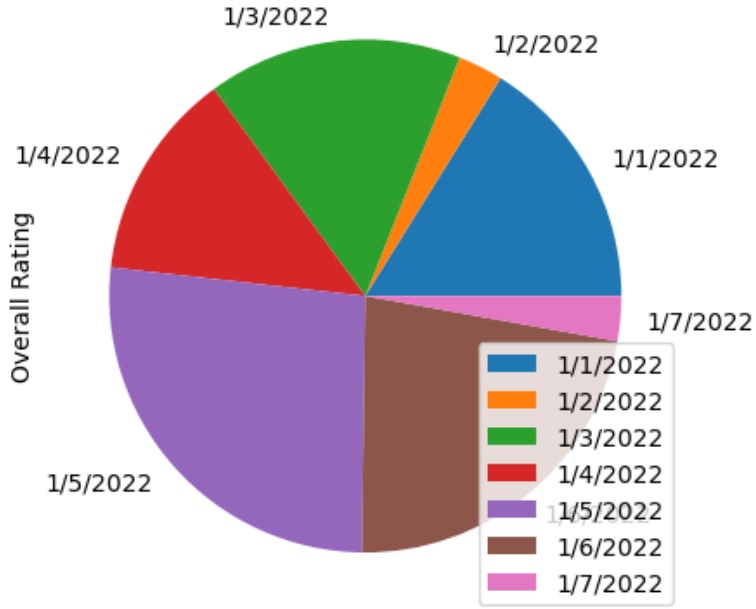
In [25]:
```
df.plot.area(figsize = (10,5))
```

Out[25]: <Axes: xlabel='Date'>



In [26]:
```
df.plot.pie(y = 'Overall Rating')
```

Out[26]: <Axes: ylabel='Overall Rating'>



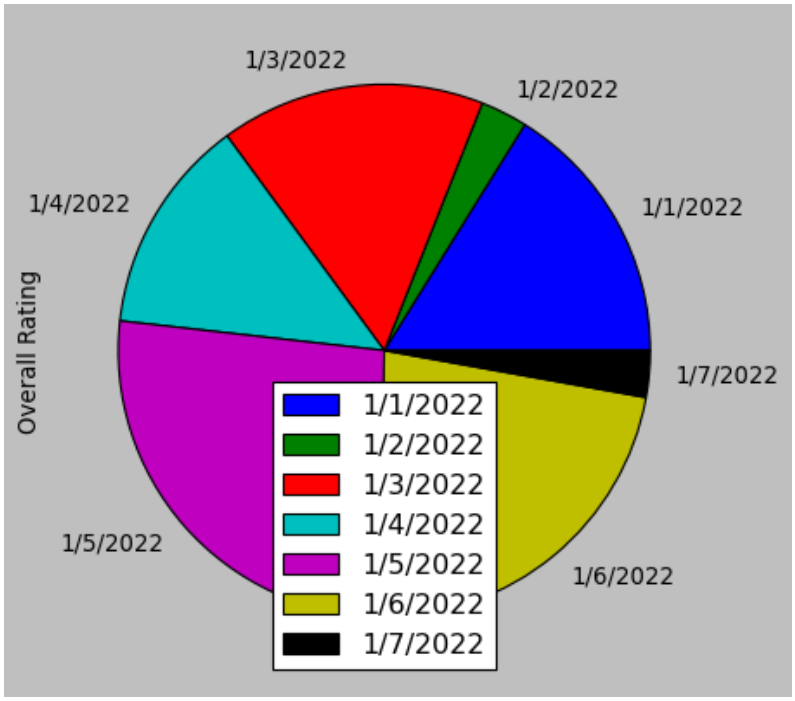
In [27]:
```
# styles are used to make different pre defined layouts
print(plt.style.available)
```

```
['Solarize_Light2', '_classic_test_patch', '_mpl-gallery', '_mpl-gallery-nogrid', 'bmh', 'c
lassic', 'dark_background', 'fast', 'fivethirtyeight', 'ggplot', 'grayscale', 'seaborn-v0_
8', 'seaborn-v0_8-bright', 'seaborn-v0_8-colorblind', 'seaborn-v0_8-dark', 'seaborn-v0_8-da
rk-palette', 'seaborn-v0_8-darkgrid', 'seaborn-v0_8-deep', 'seaborn-v0_8-muted', 'seaborn-v
0_8-notebook', 'seaborn-v0_8-paper', 'seaborn-v0_8-pastel', 'seaborn-v0_8-poster', 'seaborn
-v0_8-talk', 'seaborn-v0_8-ticks', 'seaborn-v0_8-white', 'seaborn-v0_8-whitegrid', 'tableau
-colorblind10']
```

In [28]:
```
plt.style.use('classic')
```

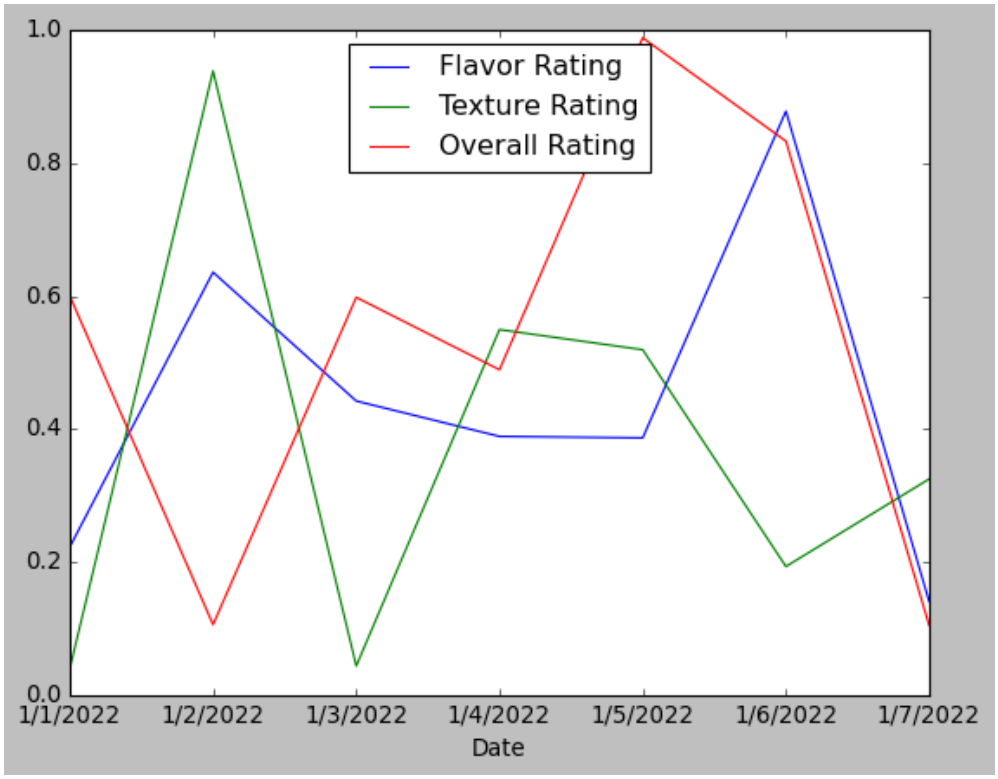
In [29]:
```
df.plot.pie(y = 'Overall Rating')
```

Out[29]: <Axes: ylabel='Overall Rating'>



In [30]:
```
df.plot()
```

Out[30]: <Axes: xlabel='Date'>



In [ ]:
```

```