Import libraries

In [1]:
```
import numpy as np
import pandas as pd
```

In [4]:
```
data = pd.read_csv(r"C:\Users\user\Downloads\2015.csv")
data
```

Out[4]:

	Country	Region	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom	(Gov Co
0	Switzerland	Western Europe	1	7.587	0.03411	1.39651	1.34951	0.94143	0.66557	
1	Iceland	Western Europe	2	7.561	0.04884	1.30232	1.40223	0.94784	0.62877	
2	Denmark	Western Europe	3	7.527	0.03328	1.32548	1.36058	0.87464	0.64938	
3	Norway	Western Europe	4	7.522	0.03880	1.45900	1.33095	0.88521	0.66973	
4	Canada	North America	5	7.427	0.03553	1.32629	1.32261	0.90563	0.63297	
...	...	...	...	...	...	...	...	...	...	
153	Rwanda	Sub-Saharan Africa	154	3.465	0.03464	0.22208	0.77370	0.42864	0.59201	
154	Benin	Sub-Saharan Africa	155	3.340	0.03656	0.28665	0.35386	0.31910	0.48450	
155	Syria	Middle East and Northern Africa	156	3.006	0.05015	0.66320	0.47489	0.72193	0.15684	
156	Burundi	Sub-Saharan Africa	157	2.905	0.08658	0.01530	0.41587	0.22396	0.11850	
157	Togo	Sub-Saharan Africa	158	2.839	0.06727	0.20868	0.13995	0.28443	0.36453	

158 rows × 12 columns

In [5]:
```
print(data.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 158 entries, 0 to 157
Data columns (total 12 columns):
 #   Column                         Non-Null Count  Dtype  
---  ------                         --------------  -----  
 0   Country                        158 non-null    object 
 1   Region                         158 non-null    object 
 2   Happiness Rank                 158 non-null    int64  
 3   Happiness Score                158 non-null    float64
 4   Standard Error                 158 non-null    float64
 5   Economy (GDP per Capita)       158 non-null    float64
 6   Family                         158 non-null    float64
 7   Health (Life Expectancy)       158 non-null    float64
 8   Freedom                        158 non-null    float64
 9   Trust (Government Corruption)  158 non-null    float64
 10  Generosity                     158 non-null    float64
 11  Dystopia Residual              158 non-null    float64
dtypes: float64(9), int64(1), object(2)
memory usage: 14.9+ KB
None
```

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

```
       Happiness Rank  Happiness Score  Standard Error  \
count      158.000000       158.000000      158.000000
mean        79.493671         5.375734        0.047885
std         45.754363         1.145010        0.017146
min          1.000000         2.839000        0.018480
25%         40.250000         4.526000        0.037268
50%         79.500000         5.232500        0.043940
75%        118.750000         6.243750        0.052300
max        158.000000         7.587000        0.136930

       Economy (GDP per Capita)      Family  Health (Life Expectancy)  \
count                158.000000  158.000000                158.000000
mean                   0.846137    0.991046                  0.630259
std                    0.403121    0.272369                  0.247078
min                    0.000000    0.000000                  0.000000
25%                    0.545808    0.856823                  0.439185
50%                    0.910245    1.029510                  0.696705
75%                    1.158448    1.214405                  0.811013
max                    1.690420    1.402230                  1.025250

          Freedom  Trust (Government Corruption)  Generosity  \
count  158.000000                     158.000000  158.000000
mean     0.428615                       0.143422    0.237296
std      0.150693                       0.120034    0.126685
min      0.000000                       0.000000    0.000000
25%      0.328330                       0.061675    0.150553
50%      0.435515                       0.107220    0.216130
75%      0.549092                       0.180255    0.309883
max      0.669730                       0.551910    0.795880

       Dystopia Residual
count         158.000000
mean            2.098977
std             0.553550
min             0.328580
25%             1.759410
50%             2.095415
75%             2.462415
max             3.602140
```

In [17]:
```
data.size
```

Out[17]: 1896

In [18]:
```
data.shape
```

Out[18]: (158, 12)

In [7]:
```
data1 = data.drop(["Country","Region"],axis=1)
data1
```

Out[7]:

	Happiness Rank	Happiness Score	Standard Error	Economy (GDP per Capita)	Family	Health (Life Expectancy)	Freedom	Trust (Government Corruption)	Generosity
0	1	7.587	0.03411	1.39651	1.34951	0.94143	0.66557	0.41978	0.29678
1	2	7.561	0.04884	1.30232	1.40223	0.94784	0.62877	0.14145	0.43630
2	3	7.527	0.03328	1.32548	1.36058	0.87464	0.64938	0.48357	0.34139
3	4	7.522	0.03880	1.45900	1.33095	0.88521	0.66973	0.36503	0.34699
4	5	7.427	0.03553	1.32629	1.32261	0.90563	0.63297	0.32957	0.45811
...	...	...	...	...	...	...	...	...	...
153	154	3.465	0.03464	0.22208	0.77370	0.42864	0.59201	0.55191	0.22628
154	155	3.340	0.03656	0.28665	0.35386	0.31910	0.48450	0.08010	0.18260
155	156	3.006	0.05015	0.66320	0.47489	0.72193	0.15684	0.18906	0.47179
156	157	2.905	0.08658	0.01530	0.41587	0.22396	0.11850	0.10062	0.19727
157	158	2.839	0.06727	0.20868	0.13995	0.28443	0.36453	0.10731	0.16681

158 rows × 10 columns

In [8]:
```
print(data1.mean())
```

```
Happiness Rank                 79.493671
Happiness Score                 5.375734
Standard Error                  0.047885
Economy (GDP per Capita)        0.846137
Family                          0.991046
Health (Life Expectancy)        0.630259
Freedom                         0.428615
Trust (Government Corruption)   0.143422
Generosity                      0.237296
Dystopia Residual               2.098977
dtype: float64
```

In [10]:
```
print(data.median())
```

```
Happiness Rank                 79.500000
Happiness Score                 5.232500
Standard Error                  0.043940
Economy (GDP per Capita)        0.910245
Family                          1.029510
Health (Life Expectancy)        0.696705
Freedom                         0.435515
Trust (Government Corruption)   0.107220
Generosity                      0.216130
Dystopia Residual               2.095415
dtype: float64
```

In [12]:
```
print(data1.mode())
```

```
     Happiness Rank  Happiness Score  Standard Error  \
0              82.0            5.192         0.03751
1               NaN              NaN         0.03780
2               NaN              NaN         0.04394
3               NaN              NaN         0.04934
4               NaN              NaN         0.05051
..              ...              ...             ...
153             NaN              NaN             NaN
154             NaN              NaN             NaN
155             NaN              NaN             NaN
156             NaN              NaN             NaN
157             NaN              NaN             NaN

     Economy (GDP per Capita)   Family  Health (Life Expectancy)  Freedom  \
0                     0.00000  0.00000                   0.92356  0.00000
1                     0.01530  0.13995                       NaN  0.07699
2                     0.01604  0.30285                       NaN  0.09245
3                     0.06940  0.35386                       NaN  0.10081
4                     0.07120  0.38174                       NaN  0.10384
..                        ...      ...                       ...      ...
153                   1.45900  1.34043                       NaN  0.65821
154                   1.52186  1.34951                       NaN  0.65980
155                   1.55422  1.36058                       NaN  0.66246
156                   1.56391  1.36948                       NaN  0.66557
157                   1.69042  1.40223                       NaN  0.66973

     Trust (Government Corruption)  Generosity  Dystopia Residual
0                          0.32524     0.00000            0.32858
1                              NaN     0.00199            0.65429
2                              NaN     0.02641            0.67042
3                              NaN     0.05444            0.67108
4                              NaN     0.05547            0.89991
..                             ...         ...                ...
153                            NaN     0.51535            3.10712
154                            NaN     0.51752            3.17728
155                            NaN     0.51912            3.19131
156                            NaN     0.57630            3.26001
157                            NaN     0.79588            3.60214

[158 rows x 10 columns]
```

In [15]:
```
print(data1.isna().sum())
```

```
Happiness Rank                   0
Happiness Score                  0
Standard Error                   0
Economy (GDP per Capita)         0
Family                           0
Health (Life Expectancy)         0
Freedom                          0
Trust (Government Corruption)    0
Generosity                       0
Dystopia Residual                0
dtype: int64
```

In [19]:
```
print(data1.sum())
```

```
Happiness Rank                  12560.00000
Happiness Score                   849.36600
Standard Error                      7.56579
Economy (GDP per Capita)          133.68968
Family                            156.58526
Health (Life Expectancy)           99.58098
Freedom                            67.72116
Trust (Government Corruption)      22.66065
Generosity                         37.49269
Dystopia Residual                 331.63833
dtype: float64
```

In [21]:
```
data2 = data1[["Happiness Rank","Happiness Score"]]
data2
```

Out[21]:

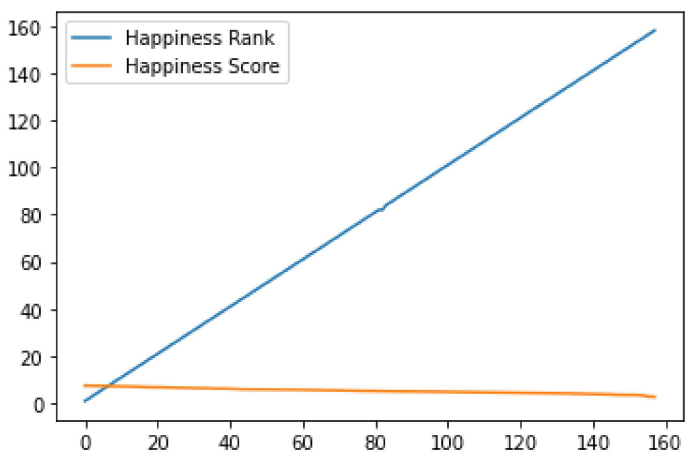
	Happiness Rank	Happiness Score
0	1	7.587
1	2	7.561
2	3	7.527
3	4	7.522
4	5	7.427
...	...	...
153	154	3.465
154	155	3.340
155	156	3.006
156	157	2.905
157	158	2.839

158 rows × 2 columns

In [22]:
```
import matplotlib.pyplot as plot
```

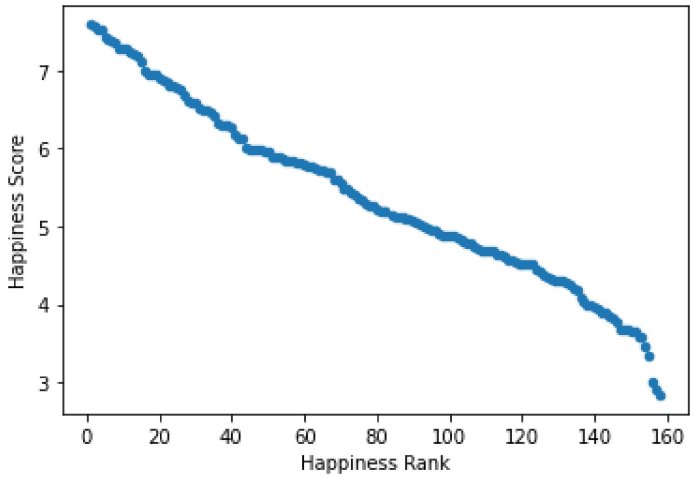
In [23]:
```
data2.plot.line()
```

Out[23]: <AxesSubplot:>



In [25]:
```
data2.plot.scatter("Happiness Rank","Happiness Score")
```

Out[25]:
```
<AxesSubplot:xlabel='Happiness Rank', ylabel='Happiness Score'>
```

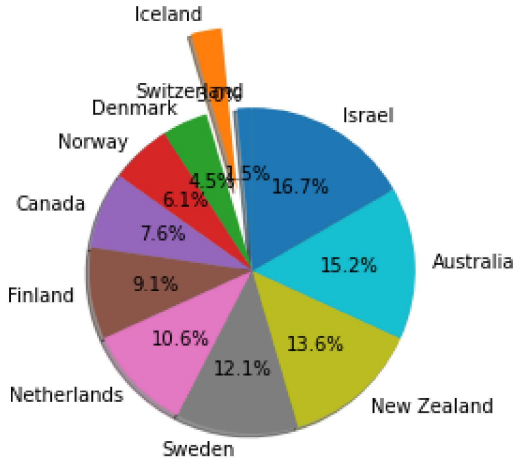


In [33]:
```
data3 = data[["Country","Happiness Rank"]][0:11]
data3
```

Out[33]:

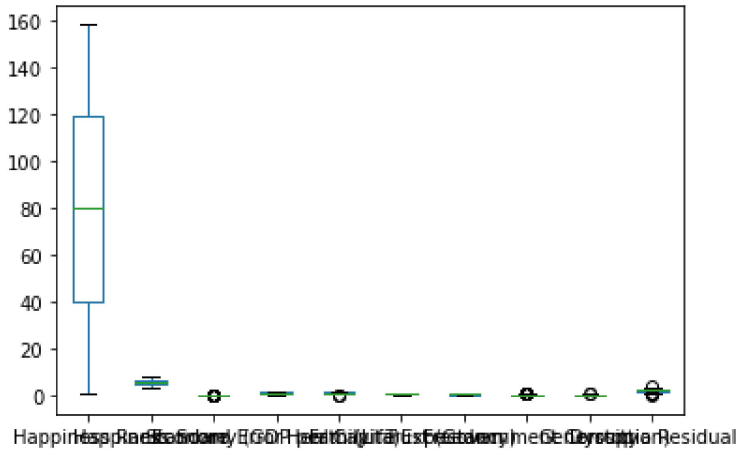
	Country	Happiness Rank
0	Switzerland	1
1	Iceland	2
2	Denmark	3
3	Norway	4
4	Canada	5
5	Finland	6
6	Netherlands	7
7	Sweden	8
8	New Zealand	9
9	Australia	10
10	Israel	11

In [38]:
```
slice = data3["Happiness Rank"]
country = data3["Country"]
#col = ["r","g","b","orange","y","black","white","violet","brown"]
plot.pie(slice,labels=country,startangle=90,shadow=True,explode=(0,0.5,0,0,0,0,0,0,0,0,
plot.show()
```



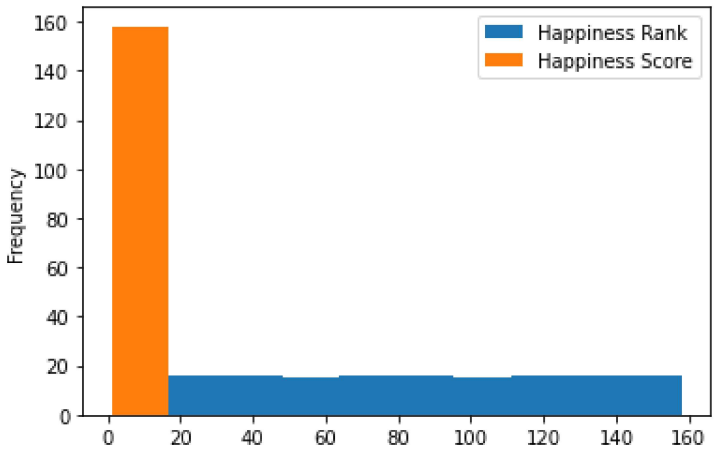
In [40]:
```
data.plot.box()
```

Out[40]: <AxesSubplot:>



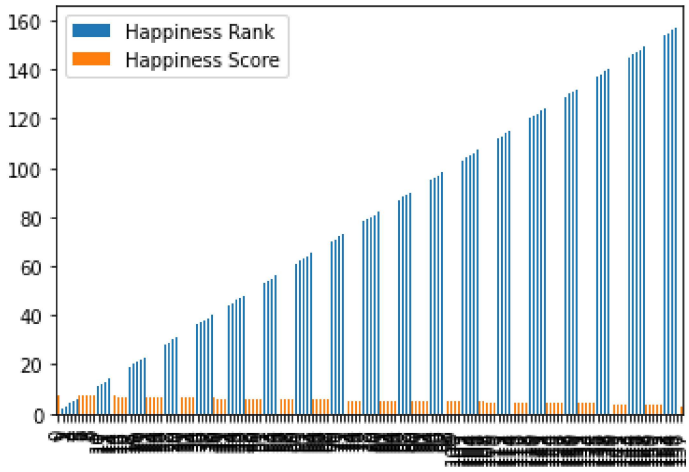
In [41]:
```
data2.plot.hist()
```

Out[41]: <AxesSubplot:ylabel='Frequency'>



In [42]:
```
data2.plot.bar()
```

Out[42]: <AxesSubplot:>



In [ ]: