

```
In [4]:
# 연습문제 7, p43
import stemgraphic

values = [2.0, 3.0, 0.3, 3.3, 1.3, 0.4, 0.2, 6.0, 5.5, 6.5, 0.2, 2.3, 1.5, 4.0, 5.9, 1.8, 4.7, 0.7, 4.5, 0.3, 1.5, 0.5, 2.5, 5.0, 1.0, 6.0, 5.6, 6.0, 1.2, 0]

stemgraphic.stem_graphic(values, scale=1)
# scale1 = 소수점 왼쪽 1 기반 분석

Out[4]:
(<Figure size 750x250 with 1 Axes>, <Axes: >)
```



```
In [10]:
# 연습문제 7.1, p43
import pandas as pd

values = [2.0, 3.0, 0.3, 3.3, 1.3, 0.4, 0.2, 6.0, 5.5, 6.5, 0.2, 2.3, 1.5, 4.0, 5.9, 1.8, 4.7, 0.7, 4.5, 0.3, 1.5, 0.5, 2.5, 5.0, 1.0, 6.0, 5.6, 6.0, 1.2, 0]
```

```
df_values = pd.DataFrame(values)
draw = df_values.value_counts(normalize=True)
print("상대도수분포")
print(draw)
```

상대도수분포

```
0.2  0.100000
6.0  0.100000
1.5  0.066667
0.3  0.066667
3.0  0.033333
5.9  0.033333
5.6  0.033333
5.5  0.033333
5.0  0.033333
4.7  0.033333
4.5  0.033333
4.0  0.033333
3.3  0.033333
2.5  0.033333
2.3  0.033333
2.0  0.033333
1.8  0.033333
1.3  0.033333
1.2  0.033333
1.0  0.033333
0.7  0.033333
0.5  0.033333
0.4  0.033333
6.5  0.033333
```

Name: proportion, dtype: float64

```
In [1]:
# 연습문제 7.2, p43
from statistics import *
```

```
values = [2.0, 3.0, 0.3, 3.3, 1.3, 0.4, 0.2, 6.0, 5.5, 6.5, 0.2, 2.3, 1.5, 4.0, 5.9, 1.8, 4.7, 0.7, 4.5, 0.3, 1.5, 0.5, 2.5, 5.0, 1.0, 6.0, 5.6, 6.0, 1.2, 0]
```

```
print(f'표본평균: {mean(values):.3f}')
print(f'표본범위: ', max(values) - min(values))
print(f'표본표준편차: {stdev(values):.3f}')
```

표본평균: 2.797

표본범위: 6.3

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