

Stem and Leaf Diagrams

A stem and leaf diagram is a compact way to display a list in a way that enables the shape of the list to be quickly perceived.

For example we start with a list of numbers that represent the heights of 50 adults men:

190, 149, 150, 172, 183, 190, 178, 189, 179, 176, 164, 165, 192, 167, 182, 169, 168, 173, 200, 176, 156, 159, 167, 162, 198, 181, 168, 185, 173, 192, 195, 175, 190, 187, 190, 175, 154, 159, 163, 179, 182, 149, 158, 185, 190, 189, 149, 157, 167, 187

We first sort them into numerical order:

149, 149, 149, 150, 154, 156, 157, 158, 159, 159, 162, 163, 164, 165, 167, 167, 167, 168, 168, 169, 172, 173, 173, 175, 175, 176, 176, 178, 179, 179, 181, 182, 182, 183, 185, 185, 187, 187, 189, 189, 190, 190, 190, 190, 190, 192, 192, 195, 198, 200

The data are all between 140 and 210 so we could have intervals of 10 starting at 140:

14	
15	
16	
17	
18	
19	
20	

We then draw a vertical line to separate the interval from the actual values. We can now fill in the values on the right hand side:

14	9 9 9
15	0 4 6 7 8 9 9
16	2 3 4 5 7 7 7 8 8 9
17	2 3 3 5 5 6 6 8 9 9
18	1 2 2 3 5 5 7 7 9 9
19	0 0 0 0 0 2 2 5 8
20	0

Two Sided Stem And Leaf Diagrams

We could compare the heights of men and women in many ways. One of the simplest is to draw a two sided stem and leaf diagram. Suppose for simplicity we have the heights of 50 women already sorted into numerical order:

145, 145, 147, 147, 150, 150, 151, 154, 155, 155, 156, 157, 158, 158, 160, 160, 161, 162, 162, 163, 163, 166, 167, 167, 167, 168, 168, 169, 169, 170, 170, 170, 171, 171, 171, 171, 172, 172, 172, 173, 173, 173, 173, 174, 174, 175, 176, 176, 177, 177

We can see from the diagram below that men are typically taller than women.

