Variance, Percentiles, and Boxplots

Part A: Variance

Use the first section of the Python program lab4.py to help answer these questions.

The mean and median of the dataset 1, 2, 3, 4, 5, 6 is 3.5. For questions 1-5, use only the numbers 1, 2, 3, 4, 5, 6, each repeated as many times as you like, find the following:

1) A dataset with mean and median 3.5 and variance as small as possible

2) A dataset with mean and median 3.5 and variance as large as possible

3) A dataset with mean 3.5, median > 3.5, and variance as small as possible.

4) A dataset with mean 3.5, median > 3.5, and variance as large as possible.

4) A dataset with mean 3.5, median < 3.5, and variance as small as possible

5) A dataset with mean 3.5, median < 3.5, and variance as large as possible

6) Using any numbers, find a dataset with mean 4, median -1, and variance 10.

Part B: Percentiles and Boxplots

1) Draw the boxplot for the following dataset:
      -2,1,1,4,6,7,7,7,8,8,9,10

Uncomment the bottom section of the Python program lab4.py to answer the following questions.

2) Find a dataset that gives a boxplot that looks like:

3) Find a dataset that gives a boxplot that looks like:

4) Find a dataset that gives a boxplot that looks like:

5) Find a dataset that gives a boxplot that looks like: