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Probability

<div align="center">MatLab Tutorial</div>

Mean: is the total sum of the numbers in a list, divided by the number of numbers.

Range: is a single number that you get using the biggest number in a list minus the smallest value in the list.

Population: is the group of data that we are analyzing or going to analyze. This data can be people, places, numbers, etc. The data is normally being selected randomly from a larger data set.

Median: is the middle value of a list when you organize the data in an ascending list when the number of values in the list is odd, at least half the numbers in the list are no greater than it. If the list has an even number of values, the median is the smaller of the two middle numbers after sorting.

Variance: is the square of the standard deviation of the list, that is, the average of the squares of the deviations of the numbers in the list from their mean.

**Mode:** the mode is the most frequent value in a list. A list can have more than one mode.

Covariance: measures the strength of the linear relationship between two numerical variables.

Coefficient of correlation: is a number that quantifies statistical relationships between two or more random variables or observed data values.

Standard Deviation: is the root mean square of the set of deviations between each element of the set and the mean of the set.

A)

```
A = [17.2 22.1 18.5 17.2 18.6 14.8 21.7 15.8 16.3 22.8 24.1 13.3 16.2 17.5
19.0 23.9 14.8 22.2 21.7 20.7 13.5 15.8 13.1 16.1 21.9 23.9 19.3 12.0 19.9
19.4 15.4 16.7 19.5 16.2 16.9 17.1 20.2 13.4 19.8 17.7 19.7 18.7 17.6 15.9
15.2 17.1 15.0 18.8 21.6 11.9];
```

A	1x50 double	double

```
M = mean(A);
```

M	17.9540	double

```
V = var(A);
```

V	9.9682	double

```
S = std(A);
```

S	3.1573	double

B)

```
sem = S/sqrt(length(A));
```
⊞ sem   0.4465   double

C)

```
Min = min(A);
```
⊞ Min   11.9000   double
```
Max = max(A);
```
⊞ Max   24.1000   double
```
y = quantile(A,[0.25, 0.5, 0.75]);
```
⊞ y   [15.8000,17.5500,19.9000]   double

D)

```
I = iqr(A);
```
⊞ I   4.1000   double

I would say there are no outliners, you could consider 24, but it still too near 22 and is a large data set so it doesn't affect the result.

e)
```
boxplot(A)
xlabel('Concurrent users')
ylabel('Thousands of people')
title('Load of Network')
```