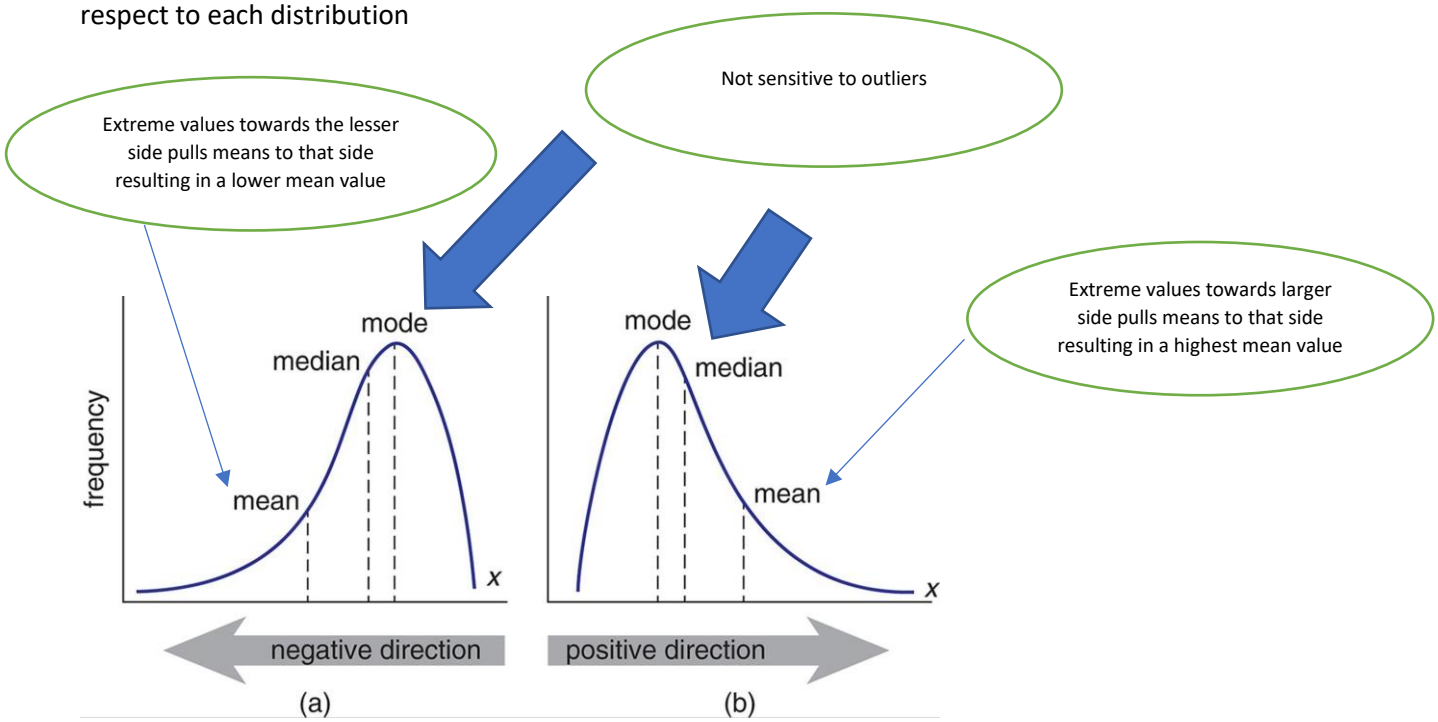
Question: What is the relationship between mean, median and mode with respect to left skewed and right skewed distribution?

Answer: We can answer this question by discussing about each central tendency separately with respect to each distribution



Mean: As we know that mean of a given data set is sensitive to extreme values and outliers. In a negatively skewed distribution, there are extreme values towards the lesser side of a given distribution and hence the mean tilts towards the lesser side. In a positively skewed distribution, there are extreme values towards the greater side of a given distribution and hence the mean tilts towards the greater side.

Mode & Median: Mode and medians are not sensitive to extreme values and outliers in a data set so they remain unaffected. It's just that mode would be at the top of the peak in both cases with respect to frequencies as it counts the occurrence of a particular value in a data set and median would be somewhere in between median and mode since it shows the central value of a data set.

Conclusion: Hence we can conclude that:

1) In a positively skewed data set Mean>Median>Mode.
2) In a negatively skewed data set Mode>Median>Mean.