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Data Science

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Analysis

* Compare the individual sample and the three sets of sample means for the different sample sizes. Discuss how they compare to each other and how they compare to the theoretical distribution. Your comparison should include
  + Shape of distribution
  + Center of distribution (mean, median)
  + Spread of distribution (standard deviation, range)

1. Comparison for the Uniform Distribution between size 1 and sizes 5, 25, and 500?
   1. Uniform Distribution
      1. The comparison between the Uniform Distribution of size 1 and sizes 5, 25, and 500 are progressively trending towards a normal distribution. The trend progressively became more normal with each increase in size. The tails began to taper off progressively. The min became larger, while the max became smaller. Additionally, the spread progressively decreased. Each of the means and medians trended toward about 5.5. The standard deviation is also about 5.5 standard deviations, and the approximation to the deviation became finer.
   2. Normal Distribution
      1. The comparison between the Normal Distribution of size 1 and sized 5, 25, 500 trend to the bell-shape of the Theoretical Normal Distribution, and the possible mean interval became smaller This means that the distribution tapered off on both sides with more means, i.e. the spread progressively decreased. Each of the means and medians were very close to +/-0.0006. Additionally, the standard deviation of was around +/-0.0006 standard deviations.
   3. Exponential Distribution
      1. The comparison between the Exponential Distribution of size 1 and 5, 25, 500 are progressively morphing to a normal distribution. The shape starts as a steep drop from mean interval 0 to 2 in size 1, i.e. the spread normalized. However, at size 5 to 25 the curve begins to take on a normal distribution shape. The means were approximately -0.99, while the medians were approximately 0.98. The standard deviation was approximately 0.999 standard deviation.
2. The mean averages for each step increase in size progressively changed the bell-shape to a normal distribution. Meaning that increasing data returns a better ability to predict trends.































