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COMP 182
Spring 2019

Project 1 Report

	Size	Minimum	Average	Median	Standard Deviation	Maximum	$100 Becomes
Historical SP500 Statistics	3,601	-0.1820	0.0016	0.0029	0.0206	0.1412	$15,033.86
Normal SP500 Simulation	10,000	98.9047	31,059.8078	14,805.7778	56,597.7969	1,790,081.9383	$31,059.81 (average) $14,805.78 (median)
Sampled SP500 Simulation	10,000	119.9187	32,467.4597	14,750.5472	68,949.9599	3,115,913.1608	$32,467.46 (average) $14,750.55 (median)

Looking over these three you can see that the Historical size is much smaller than that of the 10,000 for Normal and Sampled with only 3,601. It is also notable that for the Historical SP500 the range is a low value of 0.3232 whereas the Normal SP500 and Sampled SP500 hold ranges of 1,789,983.0336 and 3,115,793.2421 respectively. The two “Monte Carlo” simulation techniques also hold similar averages and medians that are slightly off each other, but drastically different than the Historical statistics. The final thing to consider here is the $100 on January 1st, 1950 and the value it reaches on December 31st, 2018. On average, $100 becomes $31,059.81 in the Normal SP500 Simulation and $32,467.46 in the Sampled SP500 Simulation. Each current value once again similar to other, and both are just about over double the amount of the Historical SP500’s current value of $100 which is $15,033.86.