Monte Carlo Simulation in R

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Abstract: Monte Carlo simulations attempt to represent the logic, rules, and random behavior of a system. Monte Carlo simulation presents an attractive and efficient venue for practitioners and researchers to gain insights and understand the realm of possible within a system of interest. The statistical programming language R provides an environment and tools that naturally support powerful Monte Carlo simulation development and analysis. The building blocks of Monte Carlo simulation involve analysis and visualization of data to include goodness of fit, replication of common distributions, logical procedural programming, and analysis and visualization of results. R provides all of these capabilities, with redundancy across several packages for many of the capabilities. This tutorial will provide an overview of the Monte Carlo building blocks within R, recommendations on how to leverage R resources, and a brief simulation demonstration.

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