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| Altri autori (Persone)  | MelamedBenjamin  |
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| Nota di contenuto       | Simulation Modeling and Analysis with Arena; Copyright Page; Contents; Preface; Acknowledgments; Chapter 1: Introduction to Simulation Modeling; 1.1 Systems and Models; 1.2 Analytical Versus Simulation Modeling; 1.3 Simulation Modeling and Analysis; 1.4 Simulation Worldviews; 1.5 Model Building; 1.6 Simulation Costs and Risks; 1.7 Example: A Production Control Problem; 1.8 Project Report; Exercises; Chapter 2: Discrete Event Simulation; 2.1 Elements of Discrete Event Simulation; 2.2 Examples of DES Models; 2.2.1 Single Machine; 2.2.2 Single Machine with Failures<br>2.2.3 Single Machine with an Inspection Station and Associated Inventory<br>2.3 Monte Carlo Sampling and Histories; 2.3.1 Example: Work Station Subject to Failures and Inventory Control; 2.4 DES Languages; Exercises; Chapter 3: Elements of Probability and Statistics; 3.1 Elementary Probability Theory; 3.1.1 Probability Spaces; 3.1.2 Conditional Probabilities; 3.1.3 Dependence and Independence; 3.2 Random Variables; 3.3 Distribution Functions; 3.3.1 Probability Mass Functions; 3.3.2 Cumulative Distribution Functions; 3.3.3 Probability Density Functions; 3.3.4 Joint Distributions; 3.4 Expectations |

3.5 Moments; 3.6 Correlations; 3.7 Common Discrete Distributions; 3.7.1 Generic Discrete Distribution; 3.7.2 Bernoulli Distribution; 3.7.3 Binomial Distribution; 3.7.4 Geometric Distribution; 3.7.5 Poisson Distribution; 3.8 Common Continuous Distributions; 3.8.1 Uniform Distribution; 3.8.2 Step Distribution; 3.8.3 Triangular Distribution; 3.8.4 Exponential Distribution; 3.8.5 Normal Distribution; 3.8.6 Lognormal Distribution; 3.8.7 Gamma Distribution; 3.8.8 Student's t Distribution; 3.8.9 F Distribution; 3.8.10 Beta Distribution; 3.8.11 Weibull Distribution; 3.9 Stochastic Processes; 3.9.1 Iid Processes; 3.9.2 Poisson Processes; 3.9.3 Regenerative (Renewal) Processes; 3.9.4 Markov Processes; 3.10 Estimation; 3.11 Hypothesis Testing; Exercises; Chapter 4: Random Number and Variate Generation; 4.1 Variate and Process Generation; 4.2 Variate Generation Using the Inverse Transform Method; 4.2.1 Generation of Uniform Variates; 4.2.2 Generation of Exponential Variates; 4.2.3 Generation of Discrete Variates; 4.2.4 Generation of Step Variates from Histograms; 4.3 Process Generation; 4.3.1 Iid Process Generation; 4.3.2 Non-Iid Process Generation; Exercises; Chapter 5: Arena Basics; 5.1 Arena Home Screen; 5.1.1 Menu Bar; 5.1.2 Project Bar; 5.1.3 Standard Toolbar; 5.1.4 Draw and View Bars; 5.1.5 Animate and Animate Transfer Bars; 5.1.6 Run Interaction Bar; 5.1.7 Integration Bar; 5.1.8 Debug Bar; 5.2 Example: A Simple Workstation; 5.3 Arena Data Storage Objects; 5.3.1 Variables; 5.3.2 Expressions; 5.3.3 Attributes; 5.4 Arena Output Statistics Collection; 5.4.1 Statistics Collection via the Statistic Module; 5.4.2 Statistics Collection via the Record Module; 5.5 Arena Simulation and Output Reports; 5.6 Example: Two Processes in Series; 5.7 Example: A Hospital Emergency Room; 5.7.1 Problem Statement

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## Sommario/riassunto

Simulation Modeling and Analysis with Arena is a highly readable textbook which treats the essentials of the Monte Carlo discrete-event simulation methodology, and does so in the context of a popular Arena simulation environment. It treats simulation modeling as an in-vitro laboratory that facilitates the understanding of complex systems and experimentation with what-if scenarios in order to estimate their performance metrics. The book contains chapters on the simulation modeling methodology and the underpinnings of discrete-event systems, as well as the relevant underlying probability, sta

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