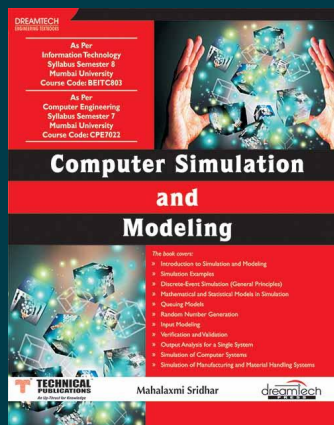


WILEY

Computer Simulation and Modeling

By Mahalaxmi Sridhar

Paperback

ISBN: 9789351199267

Publication: [NOT PROVIDED] *publication_date*

Page Count: 444 pages

₹ [NOT PROVIDED] Price

• Description

This book introduces to the world of simulation and modeling. Simulation is the imitation of the operation of a real-world process or system over time. Simulation and modeling help in studying the behavior of a system over a period of time. Simulation also helps in testing a system for its efficiency, accuracy and effectiveness. There are various techniques for simulation, which have been expounded in this book. The book also discusses about simulation on computer system and simulation of manufacturing and material handling system.

• About the Author

Mahalaxmi Sridhar

Mahalaxmi Sridhar has 14+ years of teaching experience

• Table of Contents

Chapter 1: Introduction to Simulation and Modeling

- 1.1 System Concepts
- 1.2 Types of Systems
- 1.3 Model of a System
- 1.4 Types of Models of a System
- 1.5 Concepts of Simulation
- 1.6 Types of Simulation Models
- 1.7 Application Areas of Simulation
- 1.8 When Simulation is Appropriate and Not Appropriate
- 1.9 Advantages and Disadvantages of Simulation
- 1.10 Steps in a Simulation Study

Chapter 2: Simulation Examples

- 2.1 Simulation Experiment
- 2.2 Simulation of a Static System
- 2.3 Simulation of Dynamic Systems

Chapter 3: Discrete-Event Simulation (General Principles)

- 3.1 Concepts of Discrete-Event Simulation
- 3.2 Discrete-Event Simulation

3.3 Event-Scheduling / Time-Advance Algorithm

3.4 World Views on DES

3.5 The Manual Simulation Using Event-Scheduling Approach

3.6 List Processing

Chapter 4: Mathematical and Statistical Models in Simulation

4.1 Why to Use Probability and Statistics for Simulation?

4.2 Review of Terminology and Concepts in Probability and Statistics

4.3 Useful Statistical Models

4.4 Popular Discrete Distributions

4.5 Popular Continuous Distributions

4.6 Empirical Distribution

4.7 Poisson Process

Chapter 5: Queuing Models

5.1 Characteristics of Queuing Systems

5.2 Queuing Notation

5.3 Long-Run Measures of Performance of Queuing Systems

5.4 Steady-State Behavior of Infinite-Population Markovian Models

5.5 Steady-State Behavior of Finite-Population Markovian Models (M/M/c/K/K)

5.6 Networks of Queues

Chapter 6: Random Number Generation

6.1 Properties of Random Numbers

6.2 Pseudo Random Numbers

6.3 Tests for Random Numbers

6.4 Tests for Uniformity

6.5 Tests for Independence

Chapter 7: Random Variate Generation

7.1 Inverse Transform Method

7.2 Inverse Transform Method for Continuous Distribution

7.3 Inverse Transform Method for Discrete Distribution

7.4 Direct Transformation Method

7.5 Convolution Method

7.6 Acceptance-Rejection Method

Chapter 8: Input Modeling

8.1 Input Modeling Approaches

8.2 Steps in the Development of a Useful Model of Input Data

8.3 Data Collection

8.4 Identifying the Distribution with Data

8.5 Parameter Estimation

8.6 Continuous Data in Class Intervals

8.7 Suggested Estimators

8.8 Goodness-of-Fit Tests

8.9 Selecting Input Models without Data

8.10 Covariance and Correlation

8.11 Multivariate Input Models

8.12 Time-Series Input Models

Chapter 9: Verification and Validation

9.1 Terminologies

9.2 Model Building

9.3 Verification of Simulation Models

9.4 Calibration and Validation of Simulation Models

Chapter 10: Output Analysis for a Single System

10.1 Types of Simulations with Respect to Output Analysis

10.2 Stochastic Nature of Output Data

10.3 Measures of Performance and Their Estimation

10.4 Output Analysis of Terminating Simulations

10.5 Output Analysis of Steady-State Simulations

Chapter 11: Simulation of Computer Systems

11.1 Levels of Abstraction in Computer Systems

11.2 Simulation at Computer Network Level

11.3 Simulation at the Computer Subsystem Level

11.4 Simulation at the Combinational / Gate Level

Chapter 12: Simulation of Manufacturing and Material Handling Systems

12.1 Manufacturing and Material Handling Systems

12.2 Goals of Simulations

12.3 Performance Measures of Manufacturing System and Material Handling Systems

12.4 Developing Valid and Credible Simulation Models

12.5 Challenges in Simulation of Complex Systems

Summary

References

Review Exercises

Numerical Problems

Multiple Choice Questions

Descriptive Questions

To purchase this product, please visit:

<https://wiley.indiafin.com/computer-simulation-and-modeling.html>



Scan to buy

