





# Mastering Computer Science: From Fundamentals to Innovation



# **Mastering Computer Science: From Fundamentals to Innovation**

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Here is the translation to English:

# I like it! Computer Science Handbook

## Part I: Introduction to Computer Science

### • 1. History of Computer Science

- 1.1. The Beginnings of Computer Science
- 1.2. The Development of Computer Technologies
- 1.3. Minority Groups in Computer Science

### • 2. Definitions and Terminology

- 2.1. Definition of Computer Science
- 2.2. Basic Terms and Definitions
- 2.3. Differences between Computer Science and Engineering

### • 3. Tools and Technologies

- 3.1. Basic Computer Science Tools
- 3.2. Operating Systems
- 3.3. Programming Languages

## Part II: Fundamentals of Programming

### • 4. Programming Languages

- 4.1. General Programming Languages
- 4.2. Specialized Programming Languages
- 4.3. Dynamic Programming Languages

### • 5. Data Structures

- 5.1. Sets
- 5.2. Lists
- 5.3. Arrays

### • 6. Control Flow

- 6.1. Loops
- 6.2. Conditional Expressions
- 6.3. Functions

### • 7. Algorithms

- 7.1. Definition of an Algorithm
- 7.2. Types of Algorithms
- 7.3. Sorting Algorithms

## Part III: Databases

## • 8. Definition and Fundamentals of Databases

- 8.1. Definition of a Database
- 8.2. Types of Databases
- 8.3. Database Structure

## • 9. Database Management Systems

- 9.1. Relational Database Management Systems
- 9.2. Independent Database Management Systems
- 9.3. Document-Oriented Database Management Systems

## • 10. Databases in Practice

- 10.1. Database Design
- 10.2. Database Implementation
- 10.3. Database Optimization

## Part IV: Computer Networks

### • 11. Fundamentals of Computer Networks

- 11.1. Definition of Computer Networks
- 11.2. Types of Computer Networks
- 11.3. Communication in Networks

### • 12. Communication Protocols

- 12.1. TCP/IP Protocols
- 12.2. HTTP Protocols
- 12.3. FTP Protocols

### • 13. Local Area Networks

- 13.1. Definition of Local Area Networks
- 13.2. Types of Local Area Networks
- 13.3. Designing and Implementing Local Area Networks

## Part V: Information Security

### • 14. Fundamentals of Information Security

- 14.1. Definition of Information Security
- 14.2. Types of Threats
- 14.3. Methods of Protection

### • 15. Security Systems

- 15.1. Firewall Security Systems
- 15.2. Antivirus Security Systems
- 15.3. Network Security Systems

### • 16. Security Management

- 16.1. Security Policy
- 16.2. Security Plan
- 16.3. Monitoring Security

The book can be purchased at

<https://readolla.com/mastering-computer-science-from-fundamentals-to-innovation>



