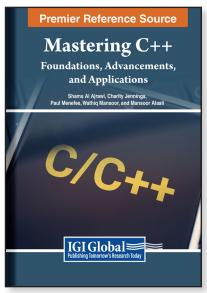
## Mastering C++: Foundations, Advancements, and Applications

Part of the Advances in Systems Analysis, Software Engineering, and High Performance Computing Book Series

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## **Description:**

Many undergraduate students in computer science, engineering, and related disciplines struggle to master the complexities of the C++ programming language. Existing textbooks often need more depth and breadth to provide a comprehensive understanding, leaving students with fragmented knowledge and hindering their ability to tackle real-world programming challenges effectively.

Mastering C++: Foundations, Advancements, and Applications is a compelling solution to this problem, offering a comprehensive and accessible approach to learning C++. With eight carefully structured chapters covering fundamental and advanced topics, the book provides a scaffolded learning experience that guides students from basic concepts to more complex programming techniques. The book equips students with the skills they need to become proficient C++ programmers by addressing both the theoretical aspects of programming and practical implementation.

The book's pedagogical features, including practice exercises, real-world examples, and supplementary online materials, enhance the learning process and make complex programming concepts more understandable. Its target audience includes undergraduate students, professionals seeking to improve their programming skills, and educators teaching programming courses. By offering a thorough and well-rounded education in C++, this textbook aims to empower students to succeed in their programming endeavors and contribute meaningfully to the field.

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## **Topics Covered:**

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- Arrays
- Basics of Inheritance
- Binary Files
- Conditional Statements
- Constructors and Destructors
- Creating and Using Classes
- Dynamic Memory Allocation

- File I/O Basics
- Function Basics
- Function Overloading
- History and Evolution of Programming Languages
- Importance of C++
- Introduction to Arrays
- Introduction to Pointers

Subject: Computer Science &

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Readership Level: Advanced-Academic Level

(Research Recommended)

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