Salleh, Shaharuddin; **Abas, Zuraida Abal**
Simulation for applied graph theory using Visual C++. (English) [Zbl 1352.68003]
Boca Raton, FL: CRC Press (ISBN 978-1-4987-2101-1/hbk; 978-1-315-37092-7/ebook). xiii, 334 p. (2016).

This book, split into ten chapters, presents both a theoretical and a practical approach to scientific computing in applied graph theory using the Microsoft Visual C++ platform. The first two chapters consider preliminaries of graph theory and the fundamental data structures used to represent graphs, paths and trees, as well as how to visualize the output using the Microsoft Foundation Classes. The rest of the book consists of code listings for specific graph theory problems, including graph coloring, shortest paths, minimum spanning trees, maximum cliques, convex hulls and Delaunay triangulations, scheduling and network routing. The book is particularly pleasant to read and the topics considered follow a logical progression in terms of complexity while covering at the same time a very wide and varied set of graph theory problems. Each chapter contains the necessary C++ source code to implement each algorithm, which is very clearly written and easy to adapt or extend as necessary, providing researchers working on simulation problems in graph theory with an essential toolkit for good-quality source code.

Reviewer: Efstratios Rappos (Aubonne)

MSC:

68-01	Introductory exposition (textbooks, tutorial papers, etc.) pertaining to computer science
05C85	Graph algorithms (graph-theoretic aspects)
05C90	Applications of graph theory
68-04	Software, source code, etc. for problems pertaining to computer science
68N15	Theory of programming languages
68P05	Data structures
68R10	Graph theory (including graph drawing) in computer science
68U05	Computer graphics; computational geometry (digital and algorithmic aspects)

Keywords:

graph theory algorithms; Visual C++; C++ source code; simulation; combinatorial optimization

Software:

Visual C++

Full Text: DOI