DESCRIPTION

This book introduces Software Quality Assurance (SQA) and provides an overview of standards used to implement SQA. It defines ways to assess the effectiveness of how one approaches software quality across key industry sectors such as telecommunications, transport, defense, and aerospace.

The book illustrates how basic concepts of software quality assurance can be utilized in businesses, government agencies, and small organizations that develop software products in many areas such as telecommunications, transport, defense, and aerospace. At the same time, it provides an overview of standards used to implement software quality assurance and defines ways to maximize performance. Topics covered include quality culture and requirements, software engineering standards and models, software review and audit, verification and validation, software configuration management, measurement, risk management, and more. In addition, this book:

• Applies ISO and IEEE software standards as well as the Capability Maturity Model Integration (CMMI)

• Illustrates the application of software quality assurance practices through the use of practical examples, quotes from experts, and tips from the authors

• Includes supplementary website with an instructor’s guide and solutions
ABOUT THE AUTHOR

Claude Y. Laporte, PhD, has coordinated the development, implementation, and deployment of systems and software engineering processes and project management processes, and has trained software engineers in America, Europe, and Asia. Since 2000, he has been a professor at the École de technologie supérieure (ÉTS), a Canadian engineering school, where he teaches software engineering. In 2013, Professor Laporte was awarded an honorary doctorate for his contributions to software engineering. He is the Project Editor of the set of ISO/IEC 29110 systems and software engineering life cycle standards and guides developed specifically for Very Small Entities (VSEs). He has also written two French software engineering textbooks with Dr. April. Dr. Laporte is a co-author of another book targeted at managers of small systems engineering organizations.

Alain April, PhD, is a full professor of software engineering and IT at ÉTS University, Québec, Canada. He specializes in software quality assurance and IT process mapping/conformity in the industry transfer of Big Data HPC applications based on Spark, H2O.ai, and other cloud computing technologies applied to healthcare, construction, banking, and financial industries. Professor April has been developing healthcare HPC applications in the area of genomic visualization, genotyping sequencing, and whole genome sequencing, extending Berkeley’s Adam data structure for HPC. These applied research projects deploy large-scale machine learning algorithms in research hospitals for specific use cases, such as type 2 diabetes early prediction and leukemia treatments in children.

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