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Title:

Software is for People: A Pavilion Case Study

Abstract:

The development of software tools is a critical component of computing, both within and beyond the field of high-performance computing (HPC). These tools not only underpin the enterprise of scientific computing, but also support the maintenance, administration, and testing of computer systems. While software tools are technical artifacts that exist for the achievement of specific technical goals, they retain a secondary role as works of technical communication that convey to contributors their logic and intent. However, this dual role, along with its implications for users and developers of the software, is often overlooked. Recentering the practice of software development on human users and contributors gives rise to a set of basic principles—namely usability, readability, and extensibility—that support the transparent communication of an application’s logic and intent to both the user and the developer. This in turn forms the foundation for an easier understanding of the software and its code base, which can ease adoption of a software tool and enable faster and more efficient development. This presentation explores these principles and presents examples of them using as a model a single feature developed for the Pavilion acceptance testing framework.