

The Stakeholder Framework: Integrating Socially Responsible Computing into Technical Computer Science Assignments

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Abstract

We've developed the Stakeholder Framework as a means to provide structure to the Socially Responsible Computing (SRC) program and improve the effectiveness of SRC content in computer science assignments. This framework instructs professors and teaching assistants to integrate SRC content into computer science curriculums by specifically targeting technical programming assignments. The framework can be broken down into four steps: first, select an existing user-driven assignment with a clear use-case and SRC implications; second, modify the assignment by considering stakeholders' needs and broader social impacts; third, prepare a discussion section for students to engage with their peers in regards to relevant SRC concepts, and fourth, accept student submissions where they implement SRC considerations and grade accordingly. To test its effectiveness, the framework was implemented in a case study involving an introductory systems course and a GDPR-compliant key-value database assignment. The SRC portion of the assignment encouraged students to consider the tradeoffs between satisfying various stakeholder needs. Experimenting with this project emphasized the importance of faculty engagement, adequate content development time, and iterative adjustments to engineer assignments where students were supported, yet challenged to tackle feelings of discomfort while making complex SRC decisions.