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Integrating Programming Ethics into the Classroom: Case Study

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Abstract

In Science, Technology, engineering, and mathematics (STEM) disciplines understanding ethical responsibilities and knowing the social impacts are as important as learning the core concepts throughout the engineering curriculum. As technology advances, the responsibilities of engineers and software developers increase to deliver high-quality products to their communities and globally. Integrating new technology without understanding its impact on society could have negative consequences. Thus, developing ethical skills is essential for computer and engineering students during college to prepare them for real-life ethical issues and how to solve them. In an object-oriented programming class at Applied Science Private University (ASU) in Jordan, real-life software-related case studies were presented to students, followed by a discussion to develop a basic understanding of ethical impacts on society. In addition, teach students the role programmers can play to prevent similar cases. The case studies were selected to cover part of the ACM code of ethics and professional conduct. Besides the ethical skills students are expected to gain, they are expected to develop an ability to think as professional programmers in critical situations and focus on the quality of their tasks and how they will impact their society and the world.

Keywords: STEM Education, Engineering Ethics, Awareness, Programming, Object-Oriented