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K-12 Outreach Through Practical Software R&D in the Software Factory Environment

Teaching software development in environments that mimic industry practices is essential for teaching applicable real-world development skills. In addition, these kinds of delivery based projects engage students in meaningful design work that encourages clear, sustainable code. The Software Factory has provided such an environment to students at MSU since 2015. This creates a common platform for software businesses, entrepreneurship, and applied software development research. The Software Factory was first created by Dr. Jurgen Munch at the University of Helsinki in 2010. This project aimed to explore the effectiveness of such a setting for high school students with limited programming experience. Five students from Bozeman High School were selected to work in a team with two undergraduates with the goal of improving upon a Sorting Guide android application. This app was originally built during the previous summer project. In order to accomplish this goal, the students were additionally taught the tools and languages necessary to build an application. These students were exposed to Java, XML, Git, various sorting algorithms, and software development practices inside an industry setting. A demonstration of the students' work will be presented as well as a discussion on the benefits and challenges with this teaching method within the Software Factory.