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Integrating Collaborative Program Development and Debugging within a Virtual Environment

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Abstract: A collaborative integrated development environment enables developers to share programming -related tasks. This paper presents the design and implementation of a collaborative IDE named ICI (Idaho Collaborative IDE). ICI enables developers in different locations to collaborate on a variety of software development activities in real-time. It supports software development in C, C++, Java, and Unicon. ICI combines a synchronous collaborative program editor and a real-time collaborative debugger within a 3D multi-user virtual environment. ICI reduces cognitive context switches between tools inside the IDE and between IDE tasks and virtual environment activities, allowing developers to share, in real-time, the process of editing, compiling, running, and debugging of their software projects.