BASEPLATE

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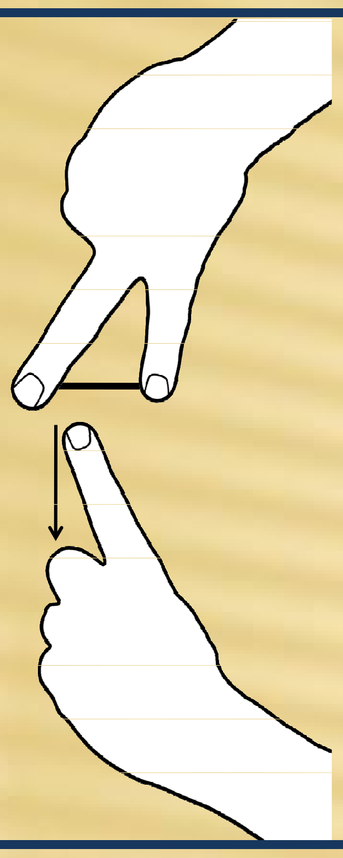
Abstract



The 3D building program Baseplate allows us to explore how multi-touch input and collaboration can improve Computer Aided Design (CAD) tools.

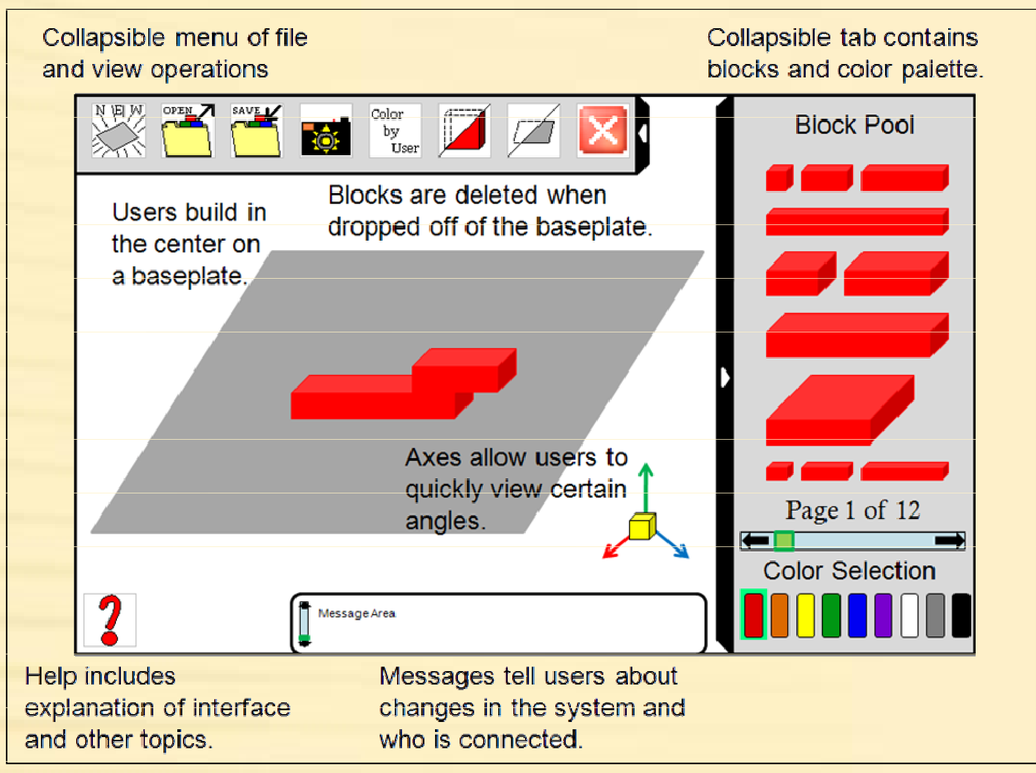
To manipulate a 3D environment on a 2D plane we explore two solutions: A new gesture for Sparsh UI, and using accelerometer data from handheld devices. Collaboration takes place in simultaneous actions on different parts of a building project.

Baseplate

Baseplate is a program in which users build structures on a shared plane out of various pieces.

Baseplate makes use of a multi-touch environment and gestures for a more intuitive building experience.

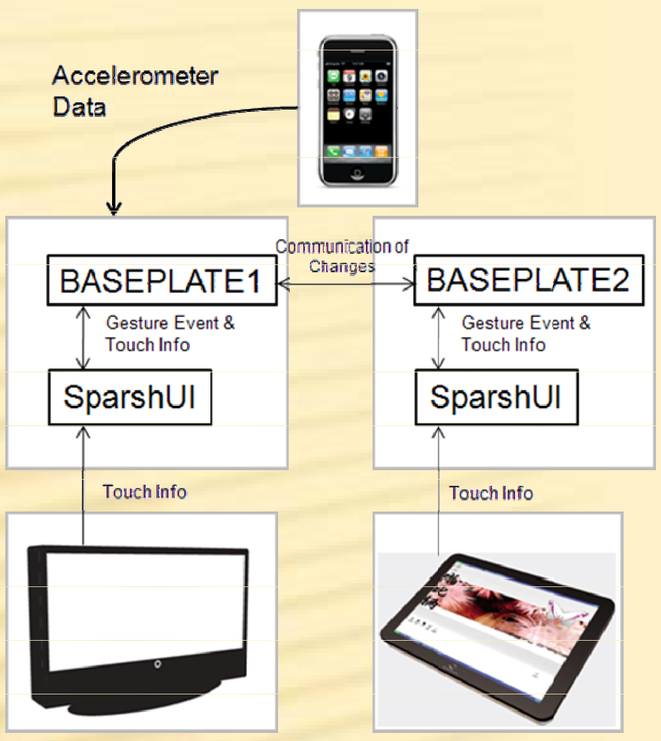
Multiple users can cooperate through TCP/IP, with 2PC used to manage race conditions. Users are given control over the degree of collaboration, choosing which other users can move their pieces.



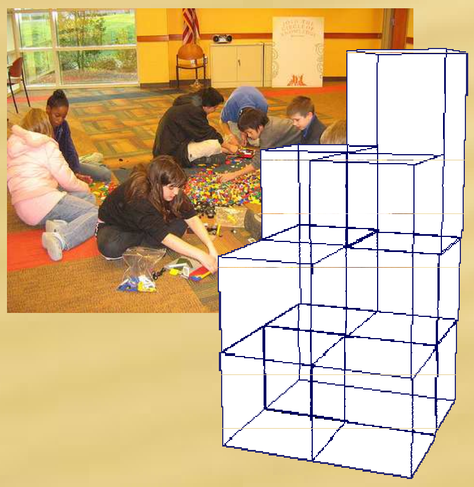
System Architecture

Baseplate is written in Java and all of the graphics are rendered and textured using JOGL.

Our system consists of a Stantum multi-touch tablet, and an IRTouch multi-touch bezel attached to a TV communicating touch information through Sparsh UI to the Baseplate program. Our iPod Touch feeds accelerometer input directly to the program. The applications themselves communicate to synchronize their projects.



Baseplate's Future



- Applied to other collaborative assembly tasks
- Wireframe building templates for guided projects
- Competitive aspects, such as building races
- Internet connections for long distance collaboration

IOWA STATE UNIVERSITY

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