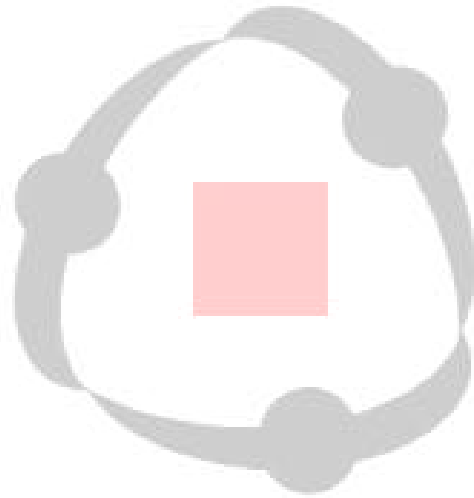


PitA-Board PDA

MONTHLY REPORT



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PROGRESS SUMMARY

Work during the month of January focused primarily on repairing the socket system. Initially, the Squeak-supplied StringSocket class was abandoned due to problems with crashes on disconnects. A new PitaSocket class was created in an attempt to circumvent this problem, but in the latter stages of development this class began to display the same problems as StringSocket. The problem with both was then discovered, and StringSocket was modified to operate correctly. After some tuning to get PitaServer and VoteServer working properly, a new changeset was released which included the modularized and PitaTransmitter-based system.

PROGRESS SPECIFICS

- Creation and Abandon of PitaSocket class
- Fix StringSocket
- Tune PitaServer and VoteServer
- Release of new changeset including PitaTransmitter

PitaSocket class

The problems with StringSocket prompted the creation of a new class designed to replace StringSocket's functionality. The PitaSocket class was designed to implement all the functionality contained within the StringSocket class, and towards the end of its development, it was successfully used in PitA-Board interactions. However, it began to exhibit the same problem that caused the StringSocket class to be abandoned. Whenever a socket connection was closed on one side, the opposite side would crash. This was eventually tracked to the way in which the socket was closed: the method closeAndDestroy should have been sent; however only the method destroy was being sent. Changing this allowed the PitaSocket class to operate perfectly.

Fix StringSocket

After the cause of the disconnect problems was discovered through the PitaSocket class, StringSocket was investigated and found to contain the same problem. After the change was made to send the closeAndDestroy method, the StringSocket class began to work perfectly as well. Due to the difficulty in maintaining and implementing the PitaSocket class, the system was modified to use StringSocket again, as it contained greater functionality.

PitaServer and VoteServer

Various minor bugs and display issues were tracked and corrected in both the PitaServer and VoteServer. For one, neither of these classes properly updated their title bars to reflect the number of clients and issues, respectively. The VoteServer exhibited a problem with excessive updating when in expanded view mode which used massive amounts of CPU, and the PitaServer failed to properly prune dead connections. All of these problems were repaired, and the first usable iteration of the PitaTransmitter-based system was filed out and distributed.

February Work Plan

With the software solidified and, for the most part, operating correctly, the addition of functionality can begin again. I will start this by adding wand functionality back into the system. Currently the request and grant of wands is properly supported, but there is no actual functionality in the wand. Adding functionality to the system will be a true test of the new PitaTransmitter, for the first time it will be used in a realistic configuration. The modular nature of the system will also lend itself very well to the creation of an administrator PDA—able to launch and control specific parts of the system—which will likely be investigated in the month of February.

Additionally, with the software stabilized the hardware investigation can continue. The DGT board will be re-examined using an oscilloscope in an attempt to determine its operation. While watching signal lines that appear to be useful, pieces will be added and removed from the board, hopefully revealing changes on the signal lines and thus providing clues as to how the microprocessor detects piece additions and removals. Once this is determined, further testing will determine whether the microprocessor actually would be able to detect two pieces, however only reports one due to its coding. If this is the case, the processor could in theory be reprogrammed to report both pieces—which would be greatly useful to the PitA-Board system. If this is not the case, it is likely that the selectivity of piece selection takes place in the transistor logic, and would require a redesign of the board to change its functionality. This task is dependant upon availability of lab equipment, and may or may not be significantly looked at in February.