



MILESTONE 6 EVALUATION

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Current Milestone Progress

Task	Completion	Michael K.	Keith J.	Eric W.	Todo
Performance	100%	33%	34%	33%	
Polish	100%	33%	34%	33%	
Demo Video	100%	33%	34%	33%	
User Manual	100%	33%	34%	33%	

Current Task Summaries

- Performance:** Several areas with performance issues were improved; primarily, graphics caching was implemented in several areas to reduce the amount of time spent re-rendering graphics that have not changed since their last use.
 - Background Caching:** The tiles in each background are cached in two ways. First, the tile data, which signifies which graphic to use for a tile as well as things like if it is flipped or not, is cached. Second, the character data, which contains the actual graphical data, is cached. Both rely on observers which are notified when the relevant memory addresses are written to. The observers in turn invalidate and rebuild the cached data.
 - Color Caching:** Because the bytes used for a color in the palette do not change, they are easily cached. This removes the need to convert from the SNES 15-bit BGR color system to Java's 32-bit ARGB color system. Colors are cached upon use.
- Polish:** Several small bugs were repaired and have resulted in several new games becoming completely playable. These include Tetris & Dr. Mario, Gadius, and Final Fantasy 2.
- Demo Video:** We created a demo video using footage of SNO running, with music provided by OverClocked ReMix and voiceover done by Eric. The video highlights the games that SNO supports and provides a link for more information so that viewers can follow up on the video.
- User Manual:** Our User Manual was created as a website hosted on Github Sites. Github provides Sites as a way for projects to host a static website supporting their project. Our site contains pages for users who wish to play SNO, as well as users who wish to embed SNO. It also provides a way for interested users to access our Github repository to download the source code for SNO.



Lessons Learned / Next Steps

Looking back, we've accomplished much more than originally anticipated, although in some ways we've accomplished less, such as the audio output. Still, we're proud of the work we've achieved and of the knowledge we've gained along the way:

- Testing is one of the most annoying and most rewarding parts of a project.
- Java is quicker than you think, but we're still learning how to make it that quick.
- Good documentation is hard to come by, but is worth the effort if you find it.
- The Super Nintendo is by far one of the most unintuitive consoles ever created.

Thanks to our switch to Github, we can continue working on SNO as a side project. 5 out of 8 graphics modes have yet to be implemented, audio still needs to be output, there's tons and tons of places yet to be optimized, and there's lots of stale code that needs to be looked at again. Perhaps someday another Senior Design group might even take up the mantle and continue development on SNO.

No, probably not. Sigh.

Sponsor Feedback

- **Performance:**

- **Polish:**

- **Demo Video:**

- **User Manual:**

Signature: _____ Date: _____



SNO: Super Nintendo Online Milestone 6 Evaluation

Sponsor: Please detach this page and return to Dr. Chan (HC 322).

For each team member, circle a score between 0 and 10, or write in your own score in the last box.

Michael K.	0	1	2	3	4	5	6	7	8	9	10	
Keith J.	0	1	2	3	4	5	6	7	8	9	10	
Eric W.	0	1	2	3	4	5	6	7	8	9	10	

Signature: _____ Date: _____

