

# **SNO**

**SUPER NINTENDO ONLINE**

**Milestone 5**

Michael Kelly | Keith Johnson | Eric Wells

Faculty Sponsor: Dr. William H. Allen

# Milestone 5

	% Complete	Michael K.	Keith J.	Eric W.
Improved Video	100%	33%	33%	34%
Compatibility	100%	33%	33%	34%
Performance	100%	33%	33%	34%
User Experience Improvements	100%	33%	33%	34%
Showcase Poster	100%	33%	33%	34%

# Milestone 5

- Rewrote graphics engine “twice”
- Load a save file from the server
- Frameskipping
- Improved interrupt support (IRQ)
- Customize controls
- Settings dialogs that work

# SNO SUPER NINTENDO ONLINE

## What is SNO?

SNO is a Super Nintendo Emulator that can be embedded into a web page. SNO allows website creators to embed a virtual Super Nintendo that lets users play Super Nintendo games right on their website!

## Requirements

- Embeddable Java applet
- Executes SNES code in Java environment
- Emulates Super Nintendo functions
  - Process Main CPU and Audio CPU code simultaneously
  - Render graphics to applet
  - Controller input via keyboard
- Loads snapshot of game state – drop the player into any point in the game!
- Load game and snapshot from server

## Testing

- Unit testing using JUnit
  - Unit tests for all 255 CPU instructions
  - Memory write / read tests
  - Graphics tests
- Comparison with output of other SNES emulators
- Acceptance testing to ensure games are playable

## Challenges

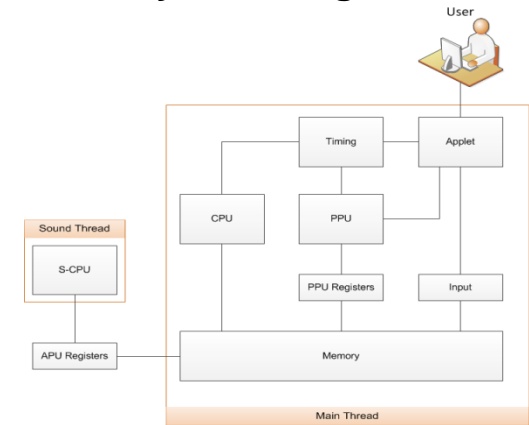
- Process hardware code using software
  - Code is downloaded and executed live in software
- Read over 1100 pages of documentation about SNES
- Performance
  - 4 Tiled backgrounds of up to 64x64 tiles per background
  - Up to 128 sprites on-screen at once
  - Blend colors using color math & masking
- Accurately reproduce precise timing

## Screenshot

### SNO Applet



## System Diagram



## Team

- Keith Johnson
- Michael Kelly
- Eric Wells
- **Sponsor:** Dr. William Allen

## Future Improvements

- Improved compatibility
- Audio output
- Scripting integration via Javascript
- Watch / fork on Github:  
<https://github.com/Osmose/sno>



**NORTHROP GRUMMAN**

Engineering & Science  
Student Design Showcase  
at Florida Institute of Technology





Demo

# Milestone 6

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

