# ECS251 Demo

We are Team 2 !!

Step 1: Environment Setup

- run `./rvconsole.sh`

- run `./runsim.sh`

- Load firmware by inserting firmware strip file

- Press RUN/PWR to run OS

- Load cartridge by inserting cartridge strip file

Step 2: Play Snake Game

1. Use up / down / left / right button to control the snake.

2. If you bump into the border or bump into snake's body, the snake dies.

3. When you eat the pellet successfully, the length of the snake increases.

4. A new pellet will be generated at a random coordinate.

5. Press CMD can also move the pellet to a new position.

   ▼ This feature was implemented on our team's cartridge only.

6. When the snake dies, it changes to text mode and print "Game Over!!" on the screen.

Demonstrate the abilities of our APIs
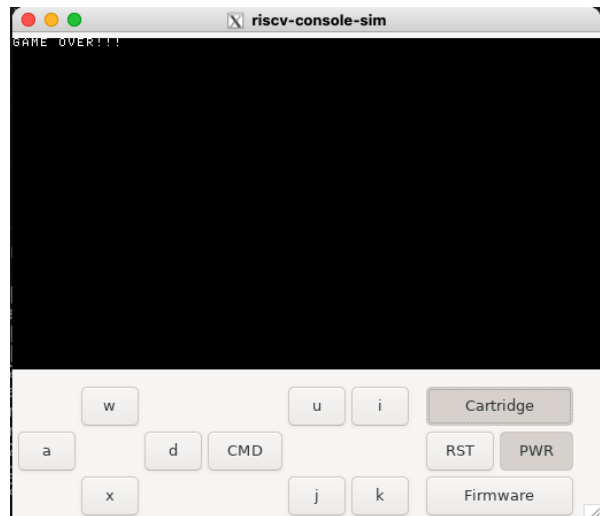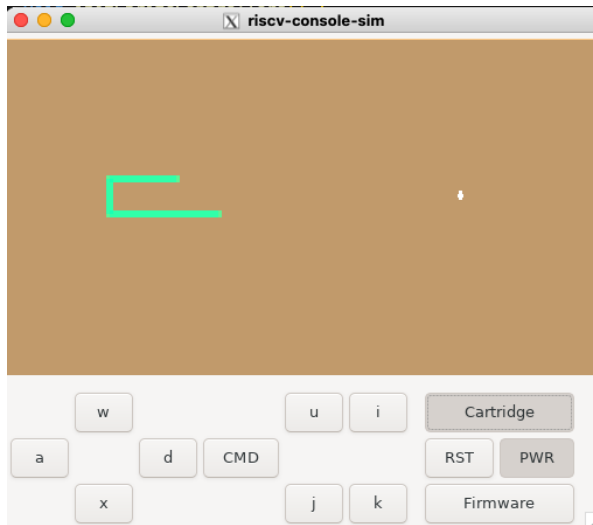
We have implemented 23 APIs, and we used 17 of them in our game.

- **getTicks** - a timer to make changes on the screen *[React to periodic timer]*

- **getStatus** - get the state of controller *[Access multi-button controller input]*

- **genRandom** - generate random number as the coordinates of pellets

  - ▼ We use the count of video interruptions as a seed for randomness *[React to video interrupt]*

- **setGraphicsMode -** set to graphics mode in the beginning of the game

- **setTextMode** - set to text mode when the snake dies and the game is over

- **printLine** - print a line of text "Game Over!!"

- **InitContext** / **SwitchContext** - multithreading is not necessary to use for our game, but we still demonstrate it by switching thread after the snake die, and let the other thread print the text message.

The following graphics API demonstrates the ability to *[Draw to the background, large and small sprites]*

- **setColor** - set color on sprite palettes

- **setBackgroundColor** - set color on background palettes

- **calcSmallSpriteControl** - calculate 32 bit address for small sprite controller

- **calcBackgroundControl** - calculate 32 bit address for small sprite controller

- **setSmallSpriteControl** - set the value to small sprite controller (without accessing the address of controller)

- **setLargeSpriteControl** - set the value to large sprite controller

- **setBackgroundControl** - set the value to background controller

- **getSmallSpriteControl** - get the value from controller in order to determine if the snake is crashing to itself.

- **getCMDInterruptCount** - get the count of command interrupt. If the count changes, we move the pellet to a new position.