

ENR145 Computational Methods

Digital toolbox: GitHub and webpage hosting

Xiang Li
Spring 2026

Brain storming session:

- What site would be fun to build in class?
- Let's generate a list of 3~5 together.

Portals to detailed guides and documentation:

GitHub docs



GitHub pages



Backstage of a GitHub site:



https://xlicoe.github.io/Base_Systems_Abacus/

GitHub Pages is a static site hosting service that takes

- **HTML**
- **CSS**
- **and JavaScript**

straight from a **repository** on GitHub, optionally runs the files through a **build** process, and **publishes** a website.

You can see examples of GitHub Pages sites in the [GitHub Pages examples collection](#).

Backstage of a GitHub site:

The screenshot shows the GitHub interface for the repository 'Base_Systems_Abacus' by user 'xlicoe'. The repository is public and has 0 stars, 0 forks, and 0 watchers. The main branch is 'main' with 1 branch and 0 tags. The repository contains several files and folders: '.github/workflows', 'old_versions', 'LICENSE', 'README.md', and 'index.html'. The 'index.html' file is highlighted, showing its commit history and content. The content of 'index.html' includes a title 'Interactive abacus to learn base 2 (binary) and base 16 (hexadecimal)', a link to the live site, a description 'Basic intro to base 2 and base 16. Numerical methods 101.', and a note 'Vibe coded for ENR145 with Google Gemini Fast version on Jan 14, 2026.'.

Repo

Build related...

Documentation

Version control

Files

HTML

About

Basic intro to base 2 and base 16. Numerical methods 101.

Releases

No releases published
[Create a new release](#)

Packages

No packages published
[Publish your first package](#)

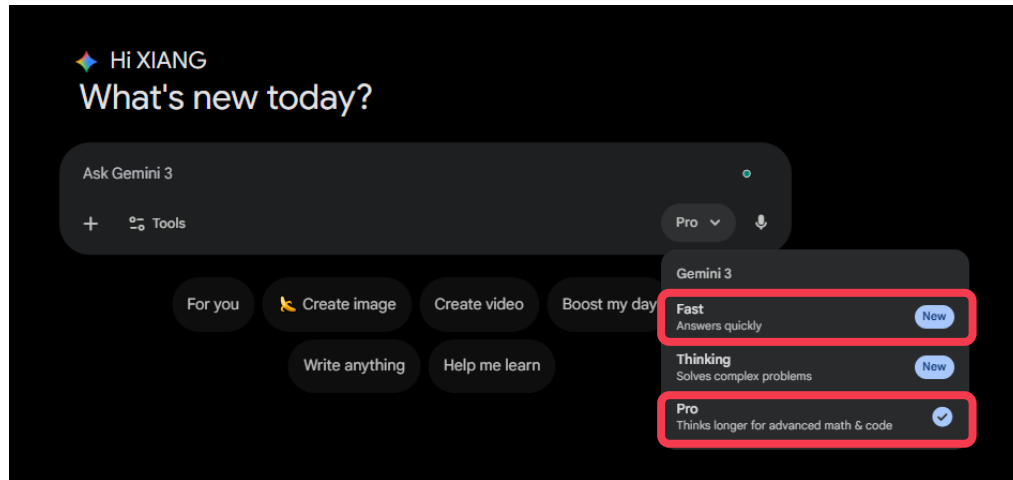
Deployments 9

github-pages inactive
[+ 8 deployments](#)

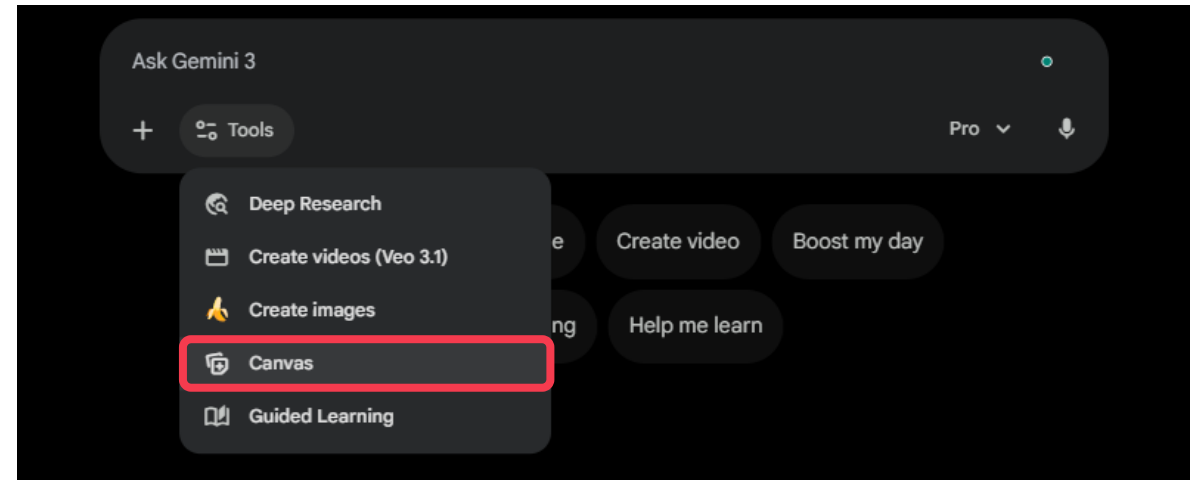
Vibe coding session (1/2):

Prompting and getting a working html code from Gemini:

Step 1: Pick a model



Step 2: Pick a tool (Canvas)



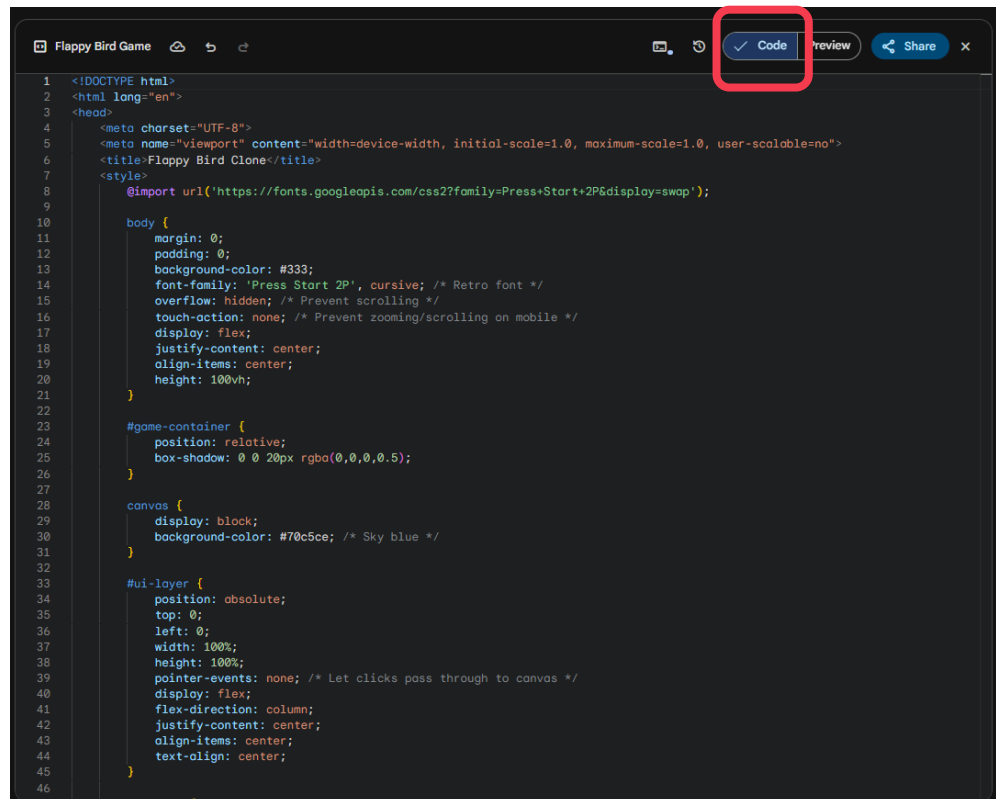
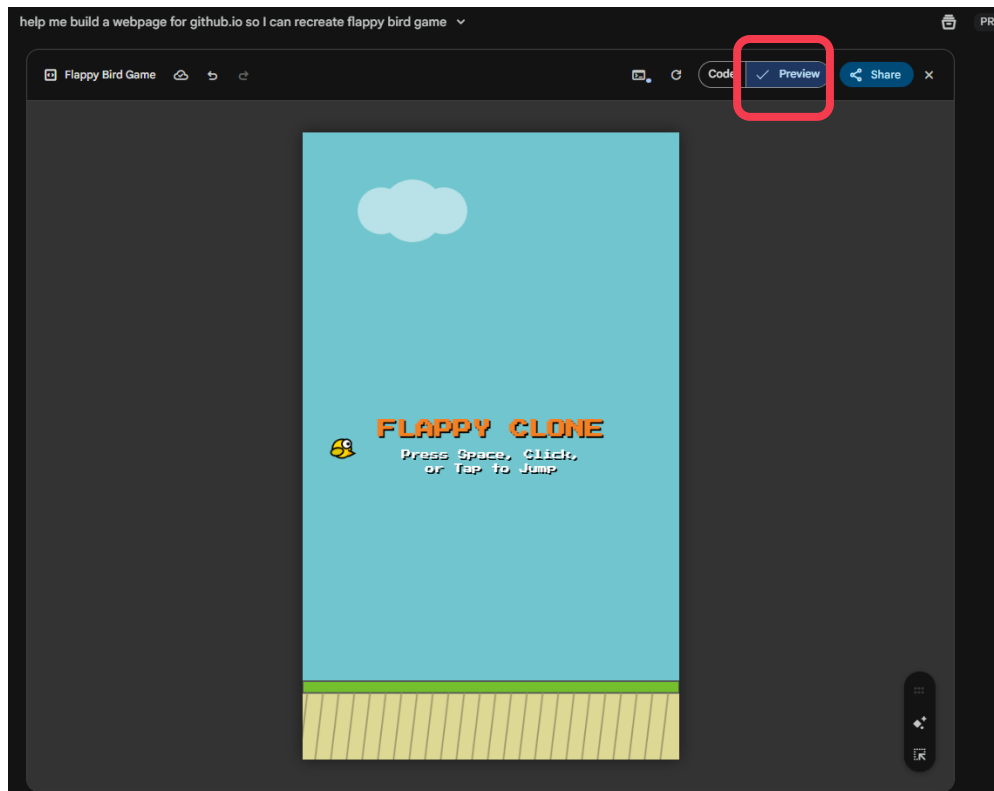
Vibe coding session (2/2):

Prompting and getting a working html code from Gemini:

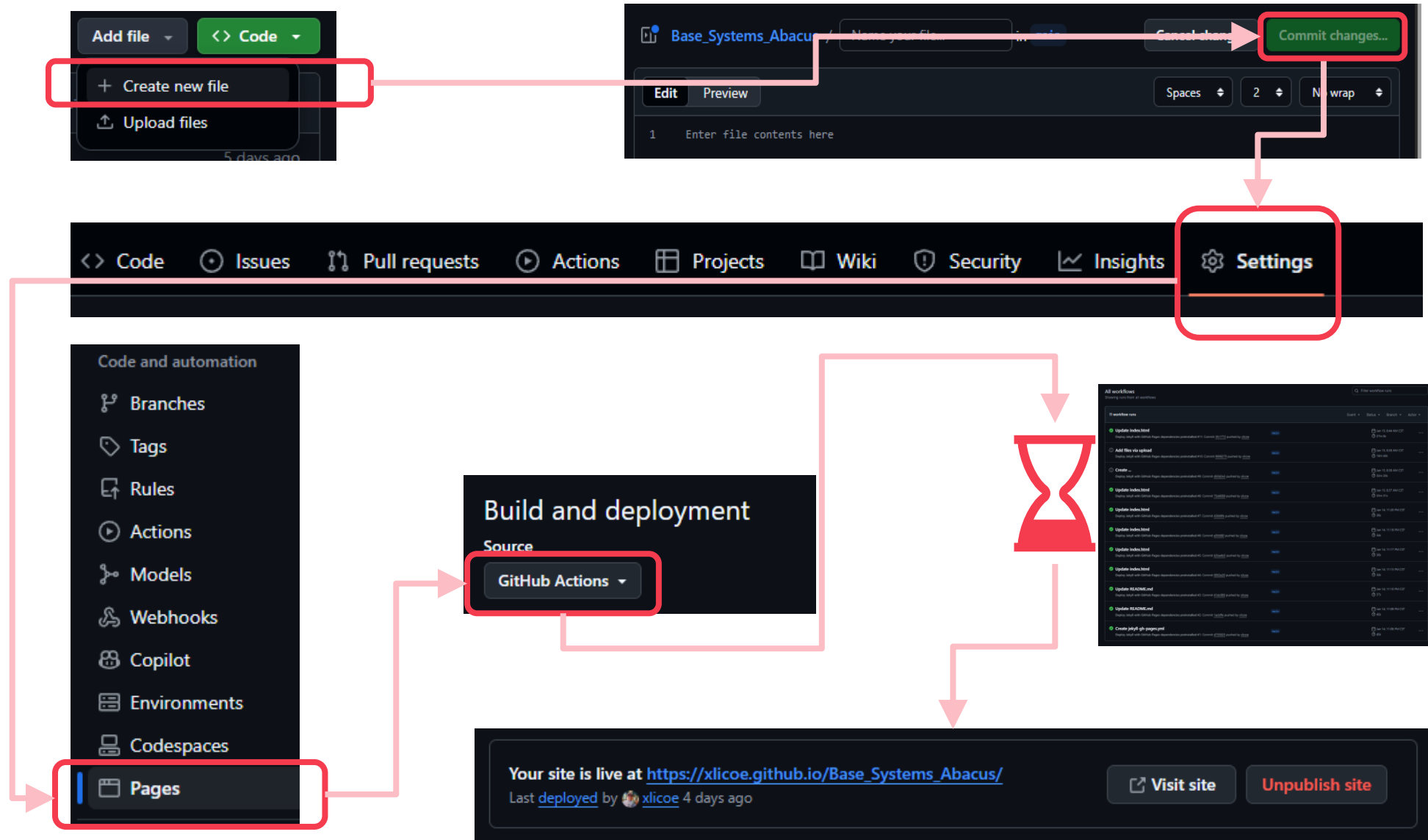
Step 3: Prompt:

help me build a webpage for github.io so I can recreate flappy bird game

Step 4: Iteration

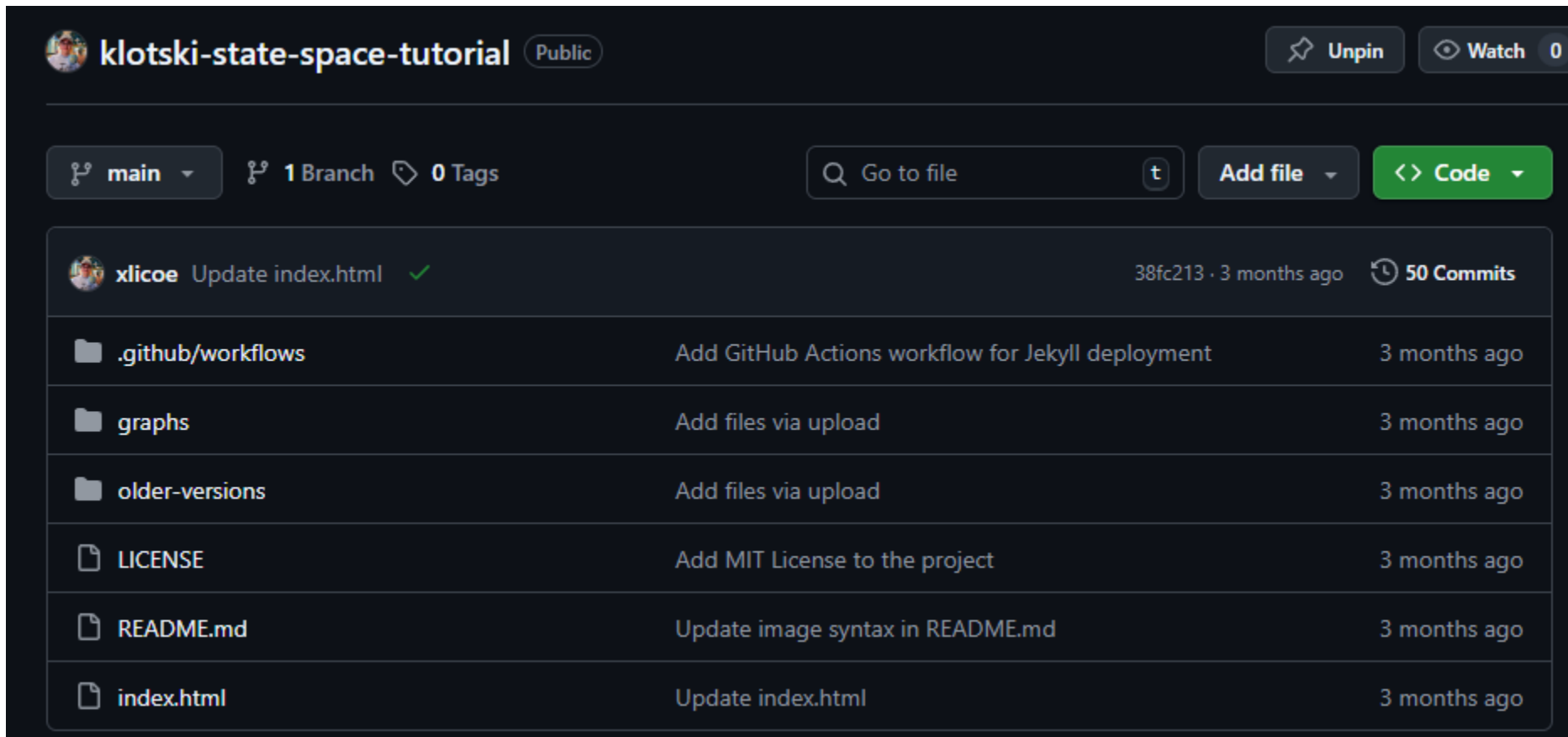


Workflow of publishing a site



Some sites don't publish, but have a good README file to explain everything:

<https://github.com/xlicoe/klotski-state-space-tutorial>



The screenshot shows the GitHub repository page for 'klotski-state-space-tutorial' by user 'xlicoe'. The repository is public and has 1 branch and 0 tags. The commit history shows a recent update to 'index.html' by 'xlicoe' 3 months ago. The file list includes '.github/workflows', 'graphs', 'older-versions', 'LICENSE', 'README.md', and 'index.html', all updated 3 months ago.

klotski-state-space-tutorial Public

Unpin Watch 0

main 1 Branch 0 Tags

Go to file t Add file <> Code

xlicoe Update index.html ✓ 38fc213 · 3 months ago 50 Commits

.github/workflows	Add GitHub Actions workflow for Jekyll deployment	3 months ago
graphs	Add files via upload	3 months ago
older-versions	Add files via upload	3 months ago
LICENSE	Add MIT License to the project	3 months ago
README.md	Update image syntax in README.md	3 months ago
index.html	Update index.html	3 months ago

Some sites don't publish, but with a good README file to explain everything:

<https://github.com/xlicoe/klotski-state-space-tutorial>

README
 MIT license

To play, go to: <https://xlcove.github.io/klotski-state-space-tutorial/>
 This is a Klotski state space tutorial for computational ENR 145 at Coe.

Background info:

<https://en.wikipedia.org/wiki/Klotski>

Klotski (from Polish: *klócki*, lit. "wooden blocks") is a sliding block puzzle. The blocks are sliding inside a frame, and typically, there's a special one to be moved to the designated location.

Sliding blocks

Block Types

Initial Position

Win Con

In this tutorial, we are interested in visualizing the "state space", where all the possible moves are connected to their neighboring moves to show dimensional patterns or structures.

The goal is to provide a quick demo, allowing students in class to output state space coordinates and create a better 3D visualization on their own. It's also a good starting point to build a universal puzzle solver.

How does this tutorial work:

- Build your block board:**

First, pick blocks and put them on the board. Unlike the real game, the blue 1x2 block cannot move horizontally, green not vertically. The yellow one can move in either direction. Once you are done placing the blocks, hit the Play button.

2) Cover all state space:

Select and use WASD/Arrow keys to move all the blocks around. The state space panel will record all the unique position(s) the blocks visited, i.e. the state space. The "Find All States" button will do it automatically.

Klotski State Space Tutorial v2

Click a block, then use WASD/Arrow Keys.

State Space
Unique states found: 4

All States

- 111100
- 111011
- 111001
- 111010

Clear Board Back to Designer

Find All States

Visualize Graph

Export to CSV

Show Neighbors

Clear States

3) Visualize the state space networks:

All state space has neighbor(s). If we use nodes to represent all the state spaces, and use line to connect them, we will generate a graph of networks. For a single 1x2 block, the graph looks like a line.

Network Graph

Visualize Graph

[illegible]

Basic writing and formatting syntax:



What if?

Get your own site up as assignment #2?