

ENR145 Computational Methods

Digital toolbox: GitHub and webpage hosting

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Brain storming session:

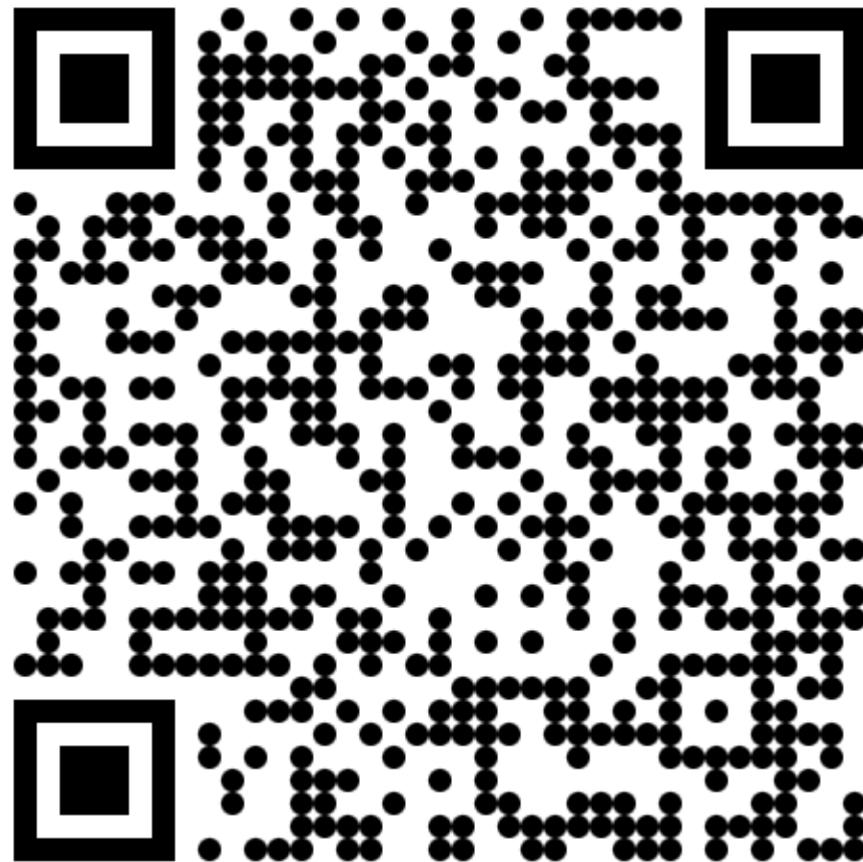
- What site would be fun to build in class?
- Let's generate a list of 3~5 together.



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Portals to detailed guides and documentation:

GitHub docs



GitHub pages



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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 a GitHub repository page for 'Base_Systems_Abacus'. The page includes a navigation bar with links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. The repository name 'Base_Systems_Abacus' is displayed, along with a public status badge. A search bar and various interaction buttons (Pin, Watch, Fork, Star) are also present.

Annotations on the left side group elements:

- Repo**: Groups 'Build related...', 'Documentation', 'Version control', and 'Files'.
- Build related...**: Groups '.github/workflows', 'old_versions', 'LICENSE', 'README.md', and 'index.html'.
- Documentation**: Groups 'README' and 'MIT license'.
- Version control**: Groups 'Build related...', 'Documentation', and 'Files'.
- Files**: Groups 'HTML'.
- HTML**: Groups 'index.html'.

The repository details section shows the following commit history:

Author	Commit Message	Date	Commits
xlicoe	Update index.html	3fc1772 · 4 days ago	13 Commits
	Create jekyll-gh-pages.yml		
	Add files via upload		
	Initial commit		
	Update README.md		
	Update index.html		

The repository description states: "Basic intro to base 2 and base 16. Numerical methods 101." It includes links for Readme, MIT license, Activity, Stars, Watching, and Forks. The Releases section indicates no releases have been published. The Packages section indicates no packages have been published. The Deployments section shows one deployment named 'github-pages' which is inactive, with 8 more deployments listed.

Interactive abacus to learn base 2 (binary) and base 16 (hexadecimal).

Site is live at: https://xlicoe.github.io/Base_Systems_Abacus/

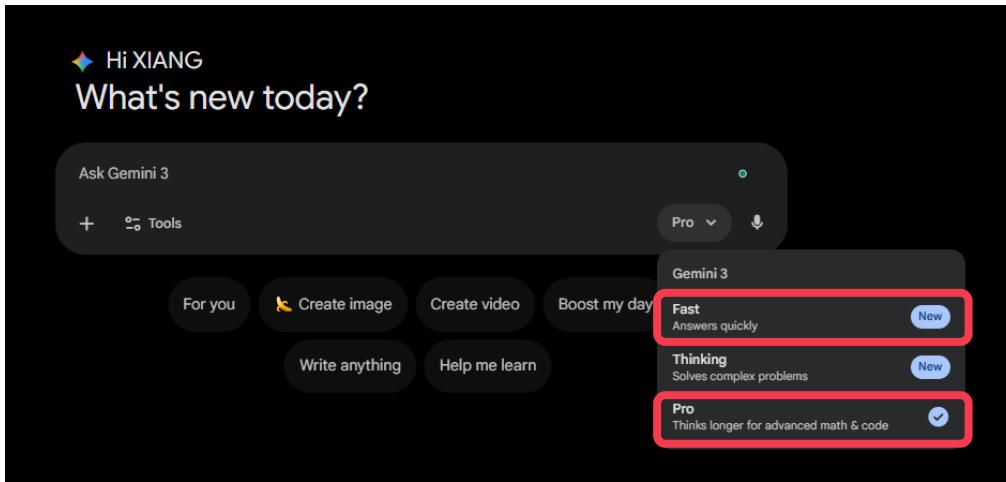
Basic intro to base 2 and base 16. Numerical methods 101.

Vibe coded for ENR145 with Google Gemini Fast version on Jan 14, 2026.

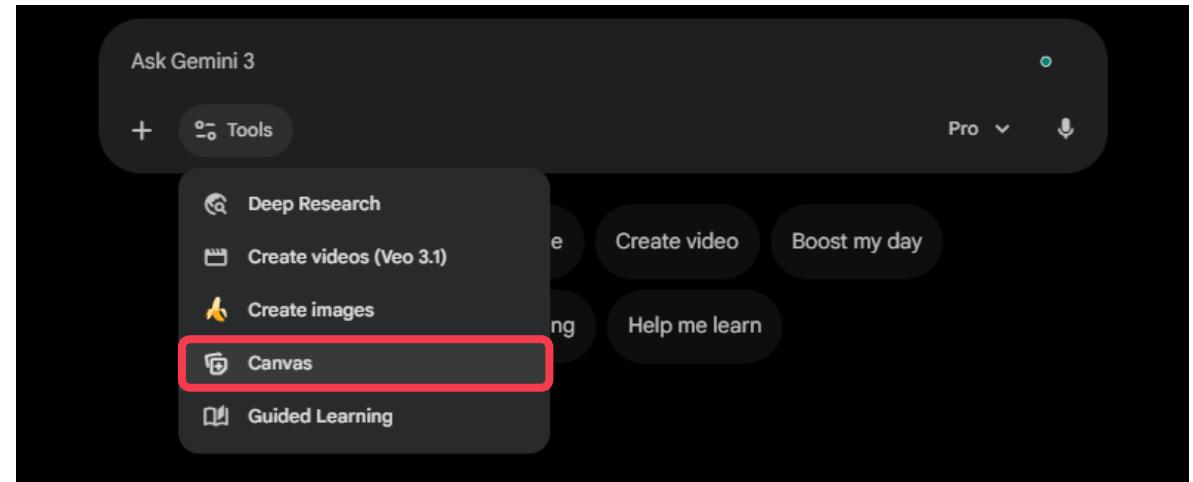
Vibe coding session (1/2):

Prompting and getting a working html code from Gemini:

Step 1: Pick a model



Step 2: Pick a tool (Canvas)



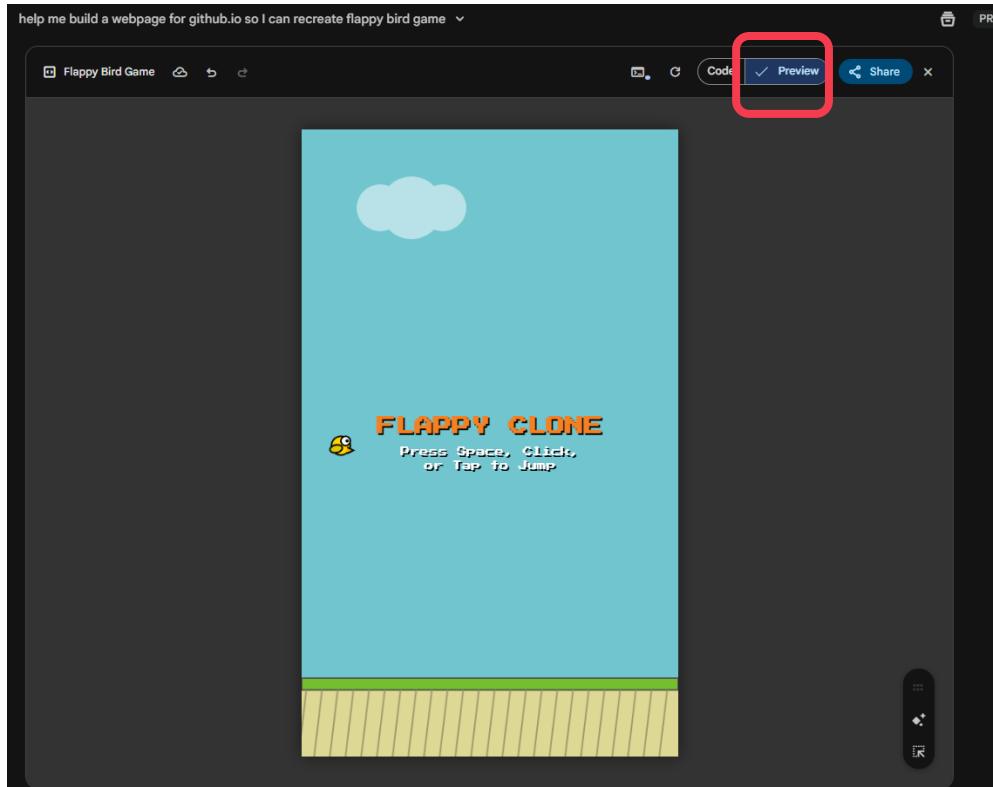
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Vibe coding session (2/2):

Prompting and getting a working html code from Gemini:

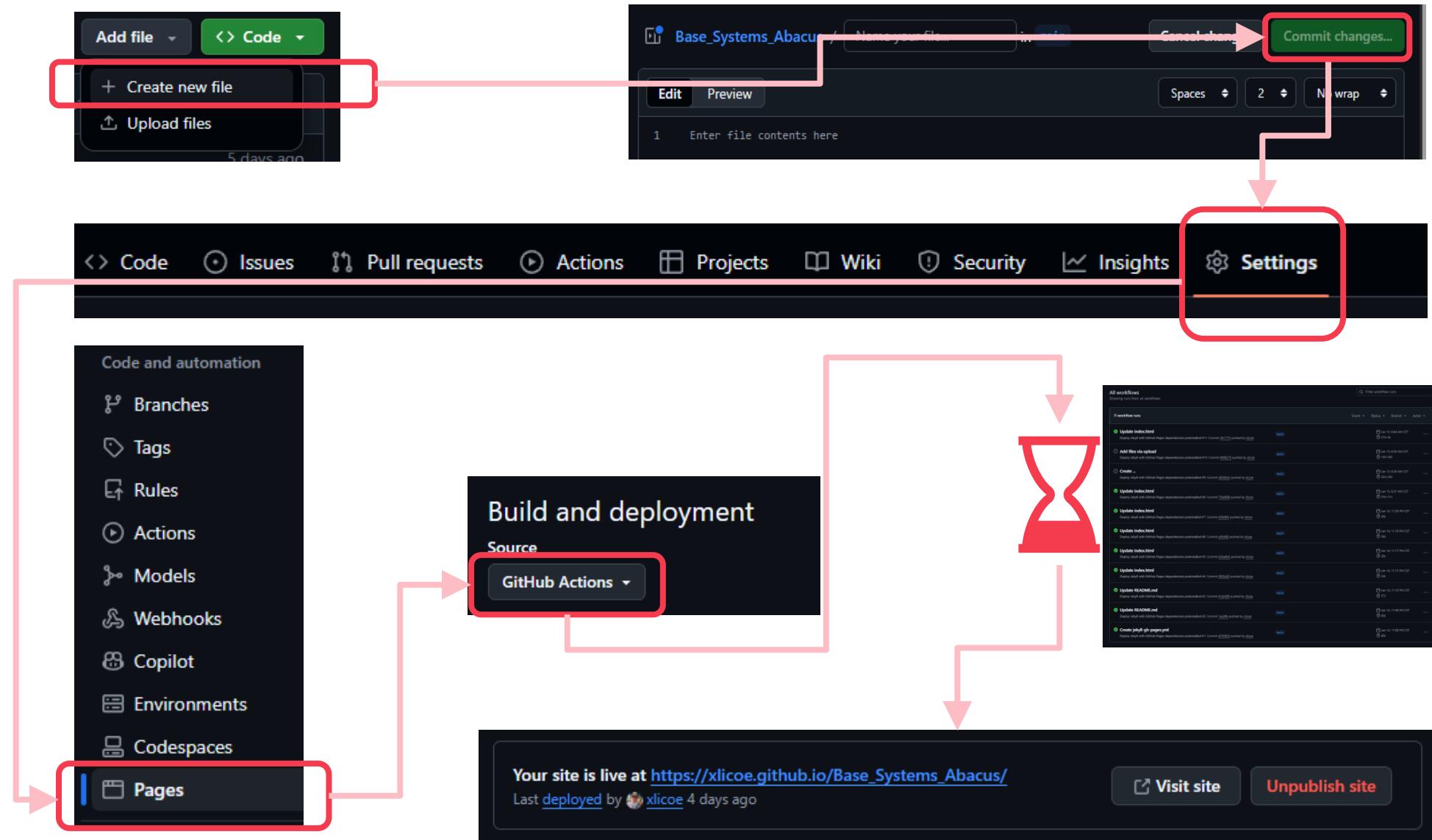
Step 3: Prompt: help me build a webpage for github.io so I can recreate flappy bird game

Step 4: Iteration



```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4 <meta charset="UTF-8">
5 <meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.0, user-scalable=no">
6 <title>Flappy Bird Clone</title>
7 <style>
8   @import url('https://fonts.googleapis.com/css2?family=Press+Start+2P&display=swap');
9
10  body {
11    margin: 0;
12    padding: 0;
13    background-color: #333;
14    font-family: 'Press Start 2P', cursive; /* Retro font */
15    overflow: hidden; /* Prevent scrolling */
16    touch-action: none; /* Prevent zooming/scrolling on mobile */
17    display: flex;
18    justify-content: center;
19    align-items: center;
20    height: 100vh;
21
22  #game-container {
23    position: relative;
24    box-shadow: 0 0 20px rgba(0,0,0,0.5);
25  }
26
27  canvas {
28    display: block;
29    background-color: #70c5ce; /* Sky blue */
30  }
31
32  #ui-layer {
33    position: absolute;
34    top: 0;
35    left: 0;
36    width: 100%;
37    height: 100%;
38    pointer-events: none; /* Let clicks pass through to canvas */
39    display: flex;
40    flex-direction: column;
41    justify-content: center;
42    align-items: center;
43    text-align: center;
44  }
45
46
```

Workflow of publishing a site



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

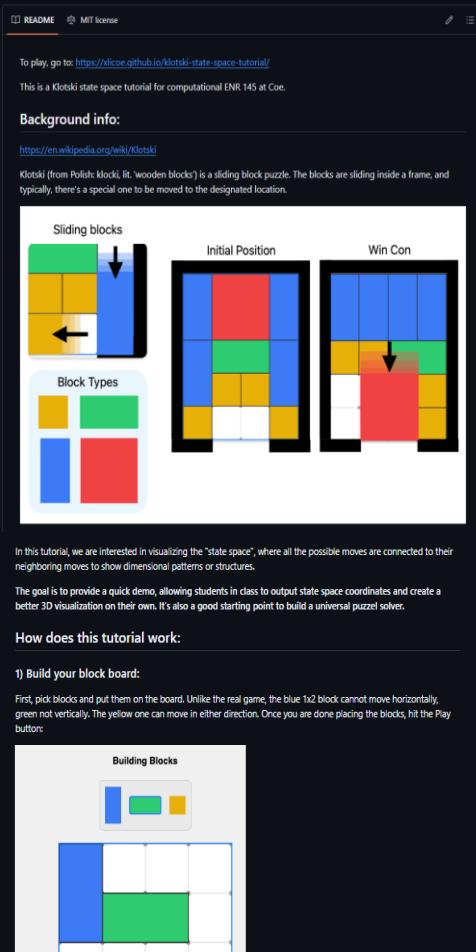
<https://github.com/xlicoe/klotski-state-space-tutorial>

The screenshot shows a GitHub repository page for 'klotski-state-space-tutorial'. The repository is public and has 1 branch and 0 tags. The main branch is selected. There is a search bar, an 'Add file' button, and a 'Code' button. Below the navigation, there is a list of commits:

Commit	Message	Date
xlicoe Update index.html	✓	38fc213 · 3 months ago
.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>



The screenshot shows the GitHub README page for the Klotski State Space Tutorial. It includes a brief introduction, background information about Klotski, and a diagram illustrating the puzzle setup and movement rules.

2) Cover all state space:

Klotski State Space Tutorial v2

State Space

All States

Unique states found: 176

Find All States

Visualize Graph

Export to CSV

Show Neighbors

Clear States

3) Visualize the state space networks:

State Space Networks

4) Feel free to explore and build a visual tool and even a solver in your own project.

A large 3D network graph visualization is shown at the bottom right of the interface.

Basic writing and
formatting syntax:



What if?

Get your own site up as assignment #2?



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