

# Website Building: Weekend Assignment

## JavaScript - Minecraft

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The following exercise contains the following subjects:

- ◆ HTML + CSS + JavaScript

### Submitting instructions:

Please add the following to hive:

- A link to the repository
- Free text - a description of the app. Stuff you found hard to implement, known bugs and your review of this assignment.

### Understanding the task

Minecraft is a sandbox video game originally created by Swedish programmer, [Markus "Notch" Persson](#).

The creative and building aspects of [Minecraft](#) enable players to build constructions out of textured cubes in a 3D [procedurally generated world](#).

In our [version](#) of the game, we will use a 2D pre-generated world (meaning, our world will be hardcoded).

1. The user will have 3 types of tools:
  - a. Axe - for cutting trees

- b. Pickaxe - for mining rocks
  - c. Shovel - for digging dirt
- 2. Clicking on a tool followed by clicking on a tile in the world will remove the tile. (If it is of the correct type according to #1) and add it to the inventory.
- 3. User can click on the tile in the inventory and place it back in the world (just the last one).

## **Approaching the assignment**

1. Sit down and think about the implementation
  - a. Different functionalities
  - b. Things that should be in HTML
  - c. Things that should be generated on the fly using JS
  - d. **Write a lot of pseudo code before typing one bit of code!**
2. Start small, one tool and one texture type
4. Try to make it as close to a complete product as you can.

## **Implementation constraints**

1. Use a matrix to represent the world and generate the world according to that matrix.
2. Do not use 3D party plugins
3. Try to write everything from scratch, if you copy code from the internet be sure that you understand it completely.

## **Basic Requirements**

1. You should implement all of the features seen in the following [video](#)
2. You must use Git throughout the assignment (and not only commit at the end)
3. The UI/UX should look at least as good as the demo.
4. You should create a landing page with a tutorial explaining the game.
5. A reset button that will reset the world to its initial state.

## **Tips**

1. Prefer using CSS classes instead of dynamically changing CSS properties in JS.
2. The background-image property would be a better choice than `<img>` for tiles.
3. Create an object that holds all the logic.
4. Break down the main functionalities in different functions.
5. Hardcode the containers in HTML.
6. Separate your concerns. A separate HTML file, CSS file and JS file.

## **Geek out**

### Extra Features:

- Add the ability to remember more than the last tile clicked (maintain the user's inventory)
- Add more tools
- Add more tiles

- Make it responsive
- Allow the user to set the world width and height
- Add themes (changing a theme should change the world's textures)
- Add more than one world type
- Make the world wider than the screen and allow scrolling
- Add fade-in/out effect when adding/removing tiles

## **Unleash the ninja within**

- Randomize the generation of the world (make it reasonable, trees should be on grass, nothing floating in the air, etc).

Submit the file to Hive.