# REFLECTIVE REPORT 2

## WEB INTERVENTION - CROSSLINKS

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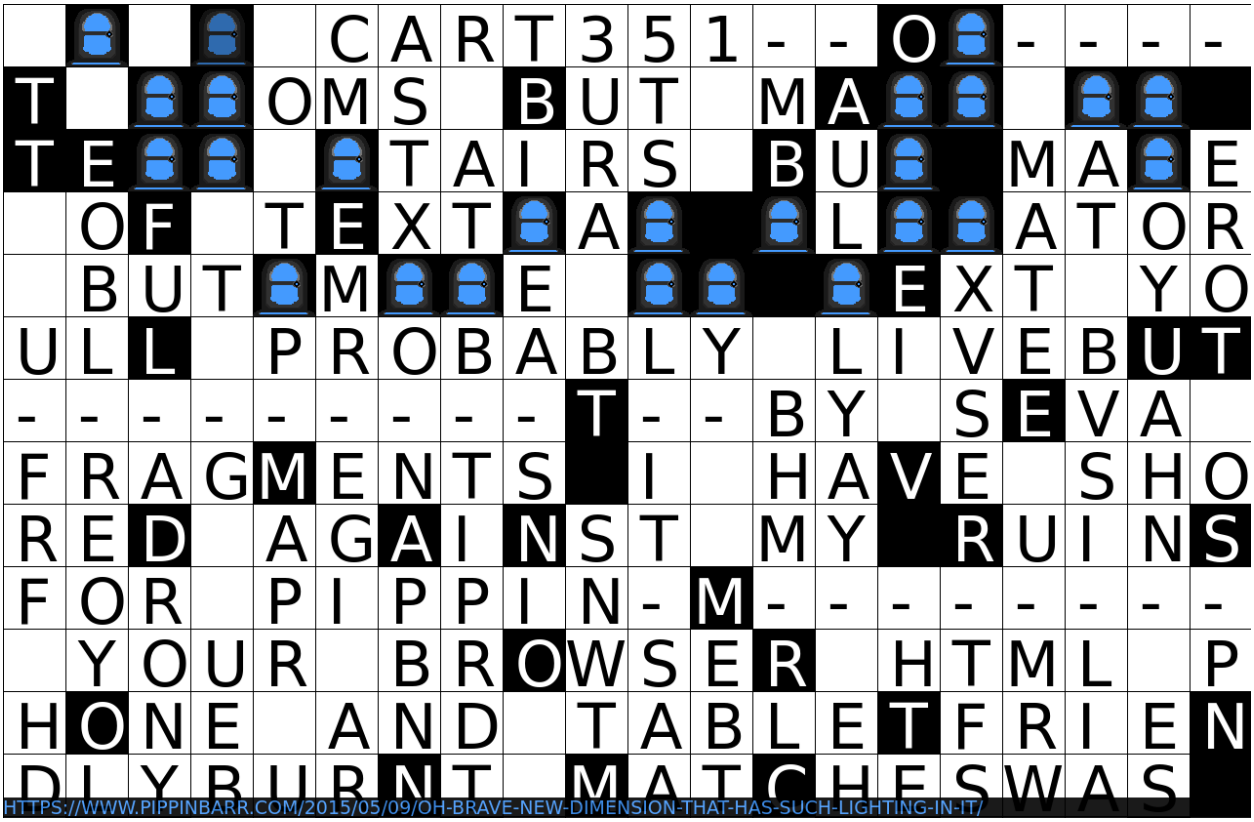
CART 351




## Introduction

This assignment offered us an opportunity to modify the existing Web navigation by extending it using a Chrome extension. This was a very interesting and yet conceptually complex project. On one hand you have tons of possibilities of extending the Web but on the other hand, finding a concept that add something to the user experience without being another psychological prosthesis of itself is very hard. Nevertheless, we found a very interesting approach to create a unique and yet playful way to navigate your daily Web.

Crosslinks helps you to get away from your usual navigating behavior by destroying anything familiar by creating a 2D game made of crosswords and links.

## Prototype 0-1

## Conceptualisation


We wanted to find a way to create a video game experience. One simple game that inspired us was Warcraft 2 as seen on the right image. This game was quite simple in its concept and it would bring a critique of the publicity which pollutes the web. At first, we went into the idea of creating a map with trees representing a Web page according to the number / type of elements found in the DOM. We planned on adding publicities on the map either designed for W2 or the ones found on the page.

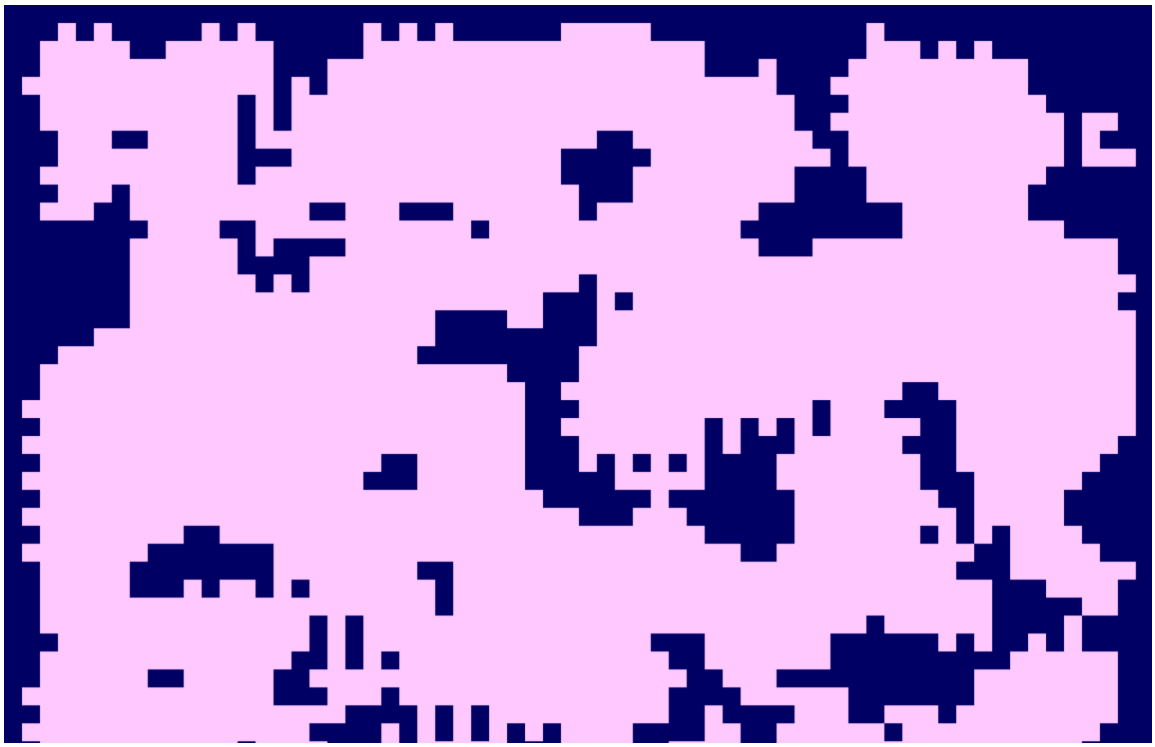
## Research

A research on map generation was performed. Thanks to Stackoverflow and its fellow users, it was found that generally people use Cellular Automata for this task. This technique originates from the Game of Life where you set rules for a cell based on neighbors such as to live, to die or to come back to life. From this rules, there are different algorithms which creates differently looking 2D maps. At first, I went reading on this matter :

https://jeremykun.com/2012/07/29/the-cellular-automaton-method-for-cave-generation/

There were three library candidates that I tried :

- https://github.com/j2kun/cave-generation



The aesthetics of this one where the most pleasing. Besides, in each generation there was a delay animating it very shortly by increasing the cell resolution. It was very intriguing to see. Moreover, the final map looked like a real dungeon pixel map.

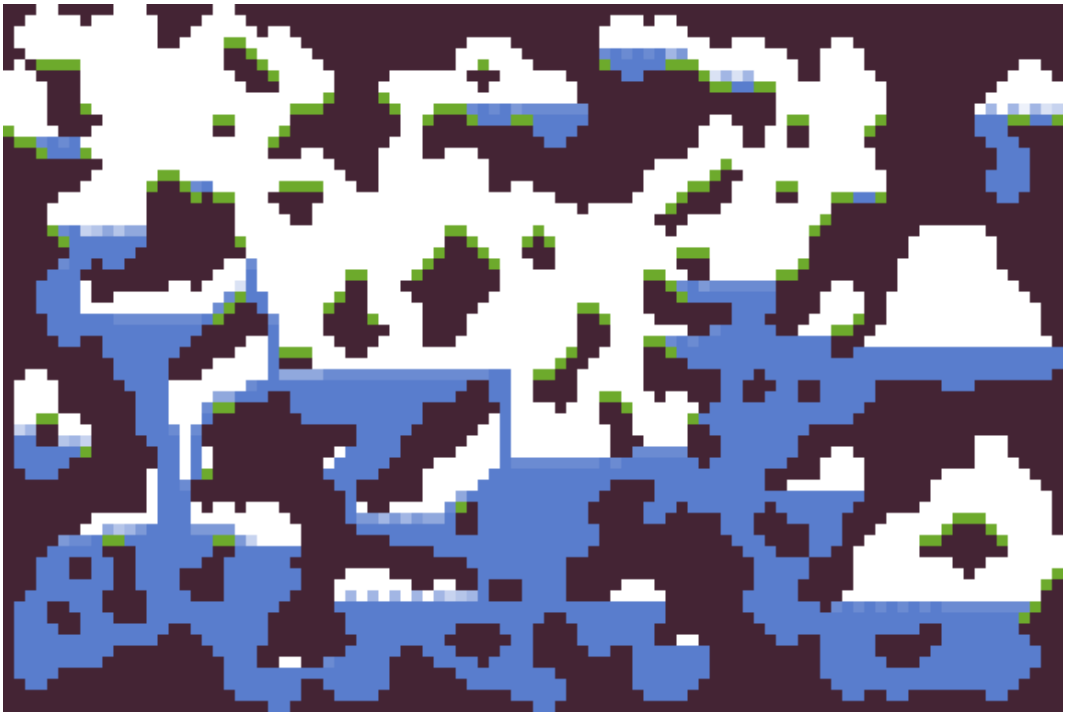
Preview :
https://github.com/sevaivanov/cart351/tree/master/4.crosslinks/prototype-1/cave-generation/cave-generation.html

The issue was due to a very custom programming with a very precise canvas usage. It used each cell as a pixel of color from where it changed them directly in each function according to the algorithms. I partially rewrote it to work with p5.js with each cell being anything using an abstract 2D array structure. However, this was taking me too much time considering all of the other features we wanted.

- https://ondras.github.io/rot.js/hp/

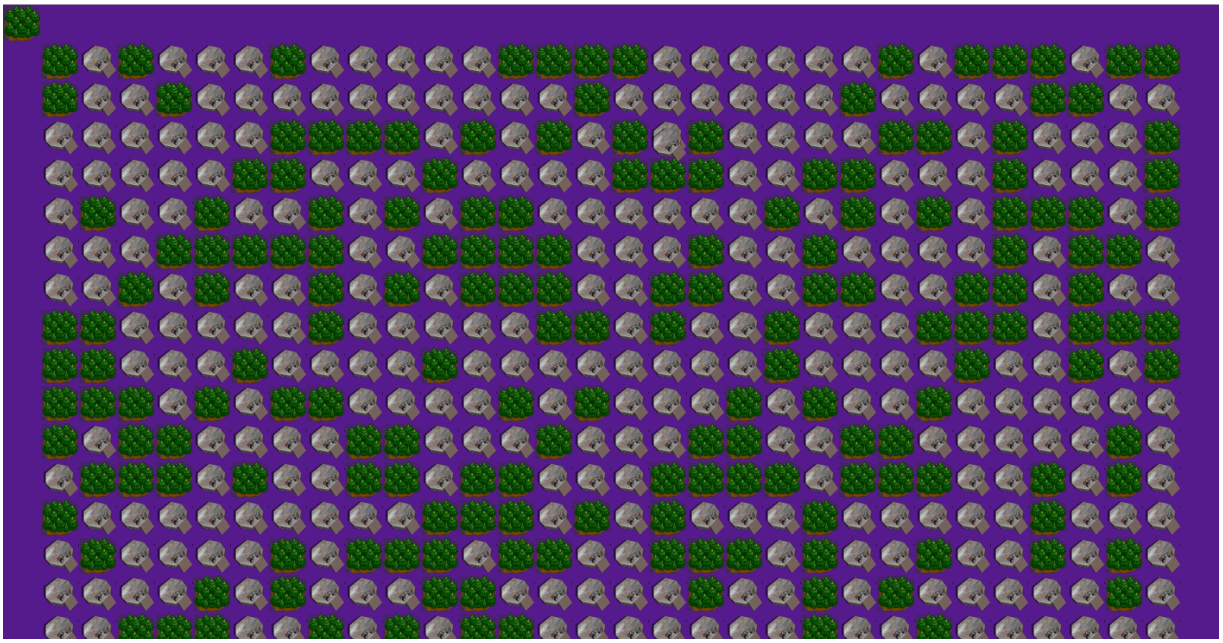

This lead me to discover rot.js which had a structure of a game engine. It was more easy to integrate it to the Chrome p5.js extension. I did few tests with it but I found that it had less pleasing aesthetics for the Warcraft 2 map that we wanted.

- https://sanojian.github.io/cellauto/



This library had a pleasant Object Oriented structure and its visual were working with the Warcraft 2 map. We went with this library that I integrated into our first prototype.

## Design



This was our first looks of a generated map. I used simple images without reading the tiles to make the tests on the map structure looks. They were very appealing and interesting on their own. It can be imagined how a user can enjoy their looks by navigating through them due to interesting dungeon generated patterns.

## Development

The hard part was to actually read the tiles from an existing file and load them one by one according to a certain algorithms. This lead us to rethink the concept of creating a banale Warcraft 2 game in a Web browser. A simple video game won't be telling us something about the page we are visiting in the Internet. This goes against the playful concept[1] we studied in this class. It will be a pure play situation rather than a playful adventure that serves a certain purpose. Logically in this case, it would be learning something about the page we decided to visit in the on the World Wide Web.

Game url : https://github.com/sevaivanov/cart351/tree/master/4.crosslinks/prototype-0

[1] Chapter 2 : Playfulness, Play Matters, Sicart, Miguel

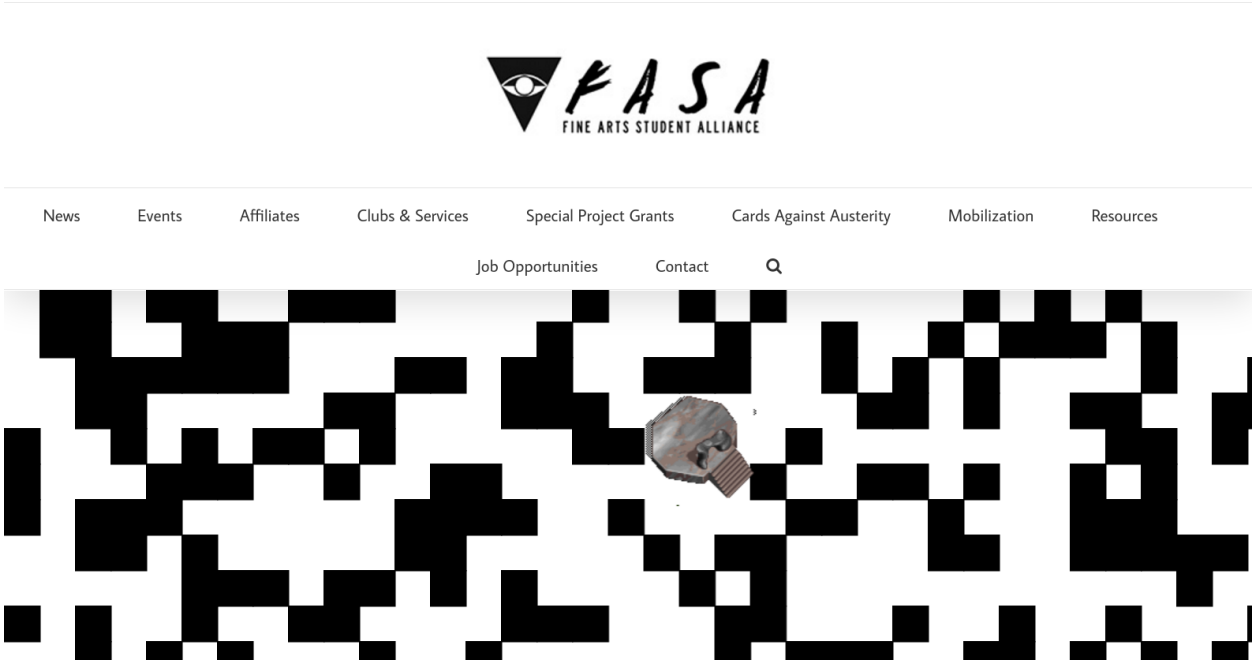
## Prototype 2

## Conceptualisation


I decided to use words from the page instead of a map made from tiles. The results were interesting. At one hand, we can see how it tells us more about the page while in the other it doesn't make sense as it creates an overlapping between wall and floor cells. This could be solved if we each cell had the same number of characters but then it would become super complex to keep it symmetrical and simple in code. The latter brought the idea of using a character per cell.

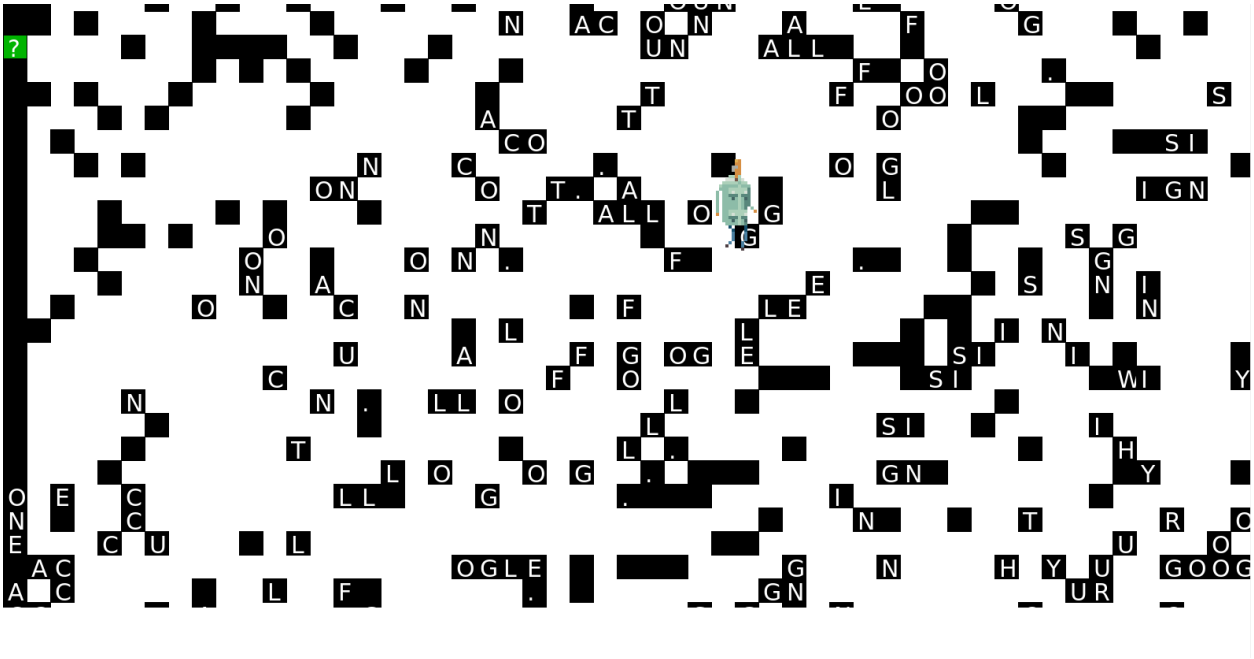
## Research

After thinking this over, it seemed more interesting to use black and white contrasts to represent the content as well as the background of the walls and floor cells :




This looked great.

## Design



Adding the letters with a character mapped to the mouse showed an interesting contrast that was pleasant to see.

## Development

The question mark on a green background represented a link that a user can click. The 2D array structure made it easy to map anything to the cells whereas it is an image, text or a shape from p5.js.

## Testing

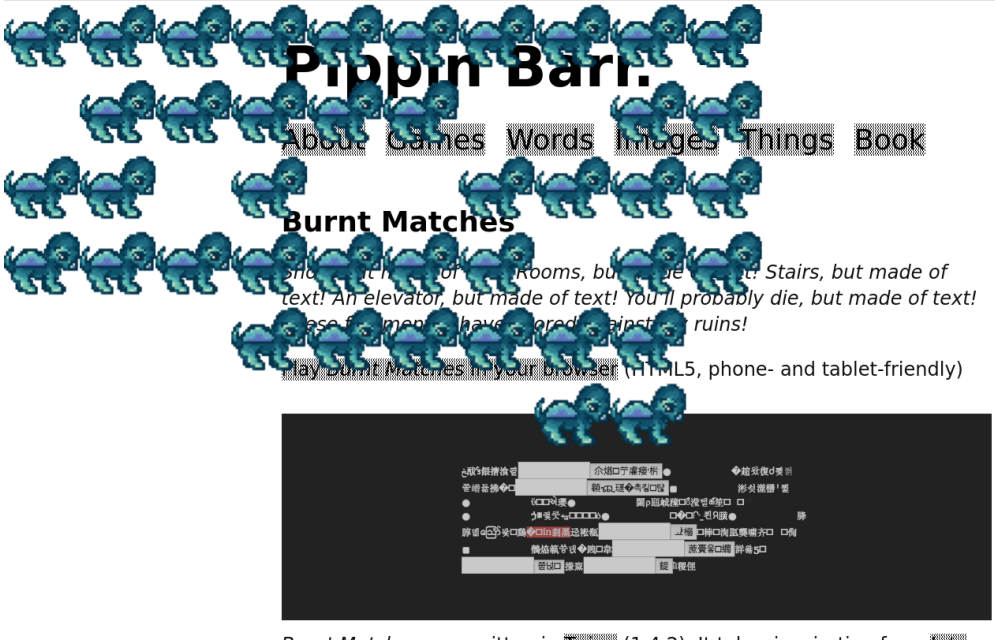
However, the gameplay was lacking meaning. A user did not had any interaction with the content. He was just hovering it with a main character's image.

Game url : https://github.com/sevaivanov/cart351/tree/master/4.crosslinks/prototype-1

## Prototype 2

This led us to implement a creature into the boundaries of a cell and map motions to the keyboard.

## Research

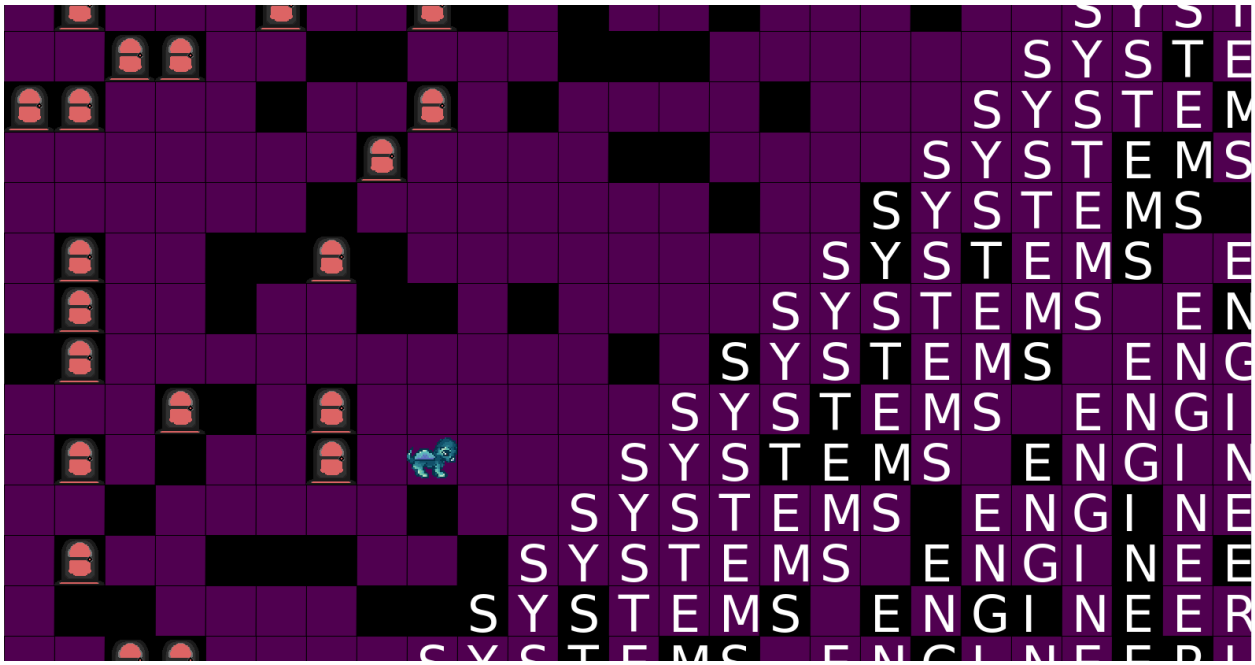



The other party went into creating small creatures for the game with four stages of evolution that could be mapped to a navigation evolution of a user. This is interesting but how to integrate it into the concept?

## Development

For the second prototype we created two versions. One without gravity with basic X, Y motions from one cell to another and another one with gravity / falling if the creature is on an empty cell.

## Testing



This looked interesting and there is now a gameplay but does this gameplay makes sense?

Why someone will use it to move or jump between cells to simply read the text content of the page? A door would led to another page which will one more time have the same looks with different text content. The gameplay seemed without a particular sense / critique.

Game urls :

https://github.com/sevaivanov/cart351/tree/master/4.crosslinks/prototype-2

https://github.com/sevaivanov/cart351/tree/master/4.crosslinks/prototype-2-gravity

## Prototype 3

### Developping

I updated the way I searched for words by adding Regular Expressions to capture only the English words from the DOM content. From there I extracted each letter into an array which I converted to 2D map of characters.

### Design

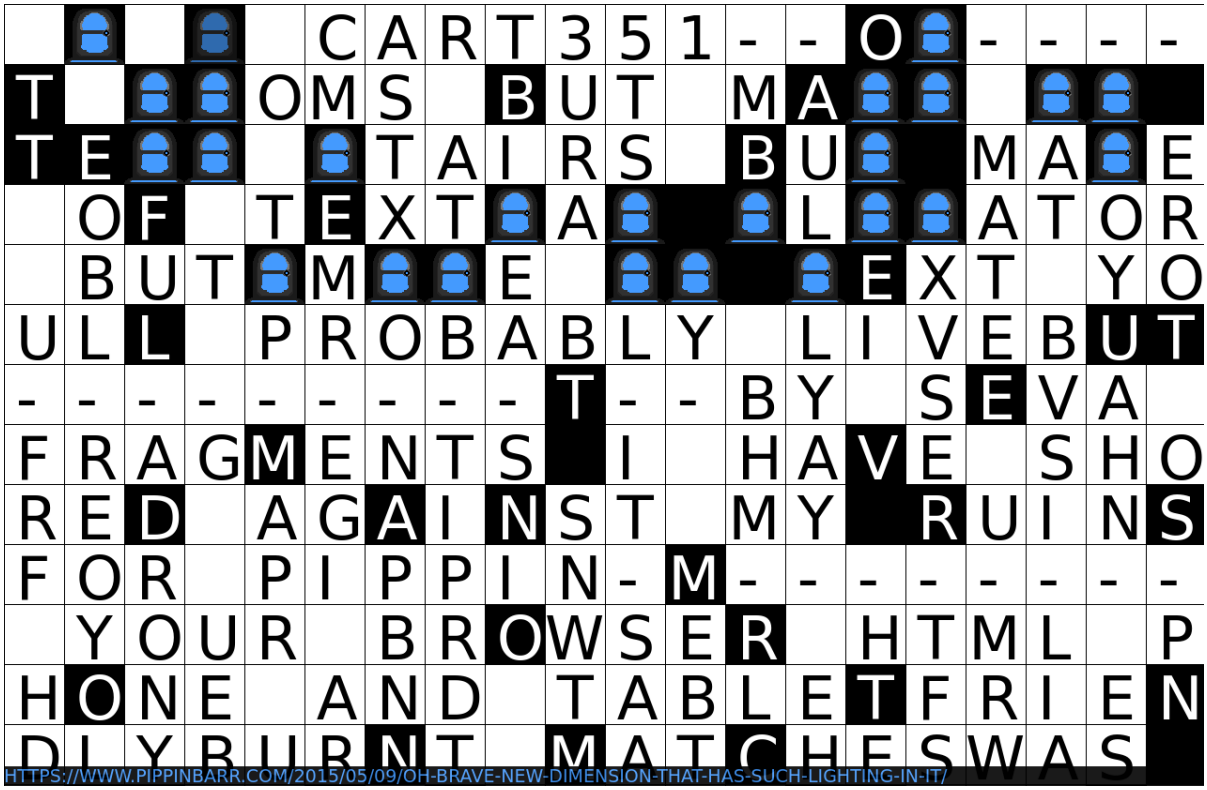
Since we are looking on mostly text content, I updated the design to be more pleasant with doors being in blue to underline the early web 1.0 classical link looks.

### Testing

The testing led to the discovery of an eraser type cell. In fact what is interesting is how content can be censored in a delicate matter. The leds us to explore the censure of the Internet by being a controlling cell. In a living organism each cell has a certain purpose / a task it must accomplish. Looking a little higher in the animal world : each specie has a reason to exist to contribute to the animal chain, as well as in the society we are bound to a certain task to coexist in it.

## Final

You are a “Controller Cell” and your purpose is to adapt the web to your perception of the reality by tampering its content.




You can perform this actions :

| | |
|---|---|
| arrows | - move around |
| enter | - enter the link (doors) on the current cell |
| space | - erase current cell |
| other keys | - write their content to the current cell |
| ctrl + r | - reload the current page |

Game url:

https://github.com/sevaivanov/cart351/tree/master/4.crosslinks/prototype-3

# References

[1] Chapter 2 : Playfulness, Play Matters (Book), Sicart, Miguel