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<center>*Project2: Anything* Proposal: Bomb Defusal</center>

Greatly inspired by the two-player game "keep talking and Nobody Explodes", I planned on making my own. While my previous project did have the same idea in mind, I was unsatisfied with the result, incomplete and restrained by both time and a genuine lack of knowledge. This time however, I feel confident with my ability to complete such a task successfully. Going in further detail, my goal is to have a three-dimensional object which can be rotated by clicking on the edges of the canvas. On both the front and back of the object are six slots on which different modules can appear. One of the modules on the front of the object will be a timer, which will be counting down from a random number between 4:00 and 8:00 minutes. Other modules which may appear are button modules, wire modules and word association game modules. Each module, once completed, will light up green on the bottom. Once all modules are completed or the timer runs out, the game ends.

| **Timer:** | Button Module | Wire Module | Word Association Game Module |
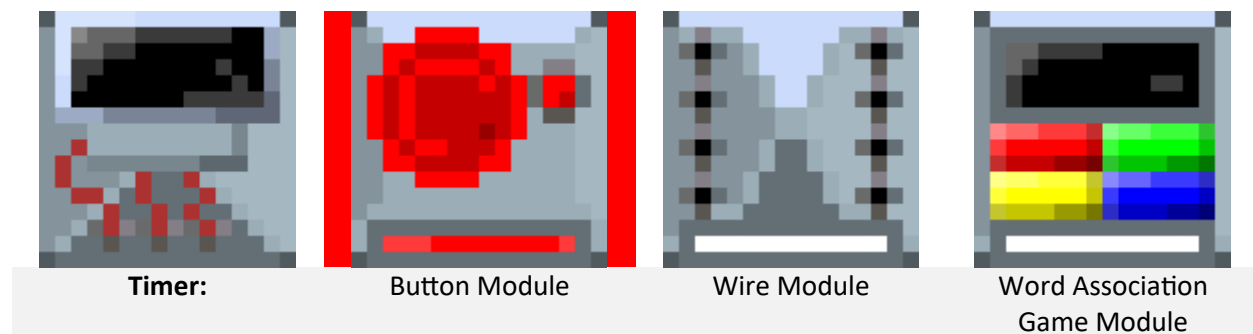
In order to complete this task, I will be repurposing my old script and apply my recently acquired knowledge on object-oriented programming and arrays, helping me by clearly separating what was once a long and confusing script, and also add simplify the random selection of each type of modules, which was an aspect I had hoped to add in the previous version.

After analysing the entire project, I realized that the biggest obstacle I will encounter will either be with randomizing the type of module's location or the game mechanics of the wire module.

Firstly, I plan on having a random amount of modules between 2 to 12. With 6 available slots on each side of the bomb (front and back), I will have to create one array in which I will define each position in a grid-like pattern and whether or not the modules will be visible. I will then divide this array in two categories, making the front and the back. On the front, the first visible module will be the timer, no matter of its position on the grid. As for the others, their type will be randomly selected between 3 different modules: the button, the wires and the Word Association Game.

The button Module being fully operational on my previous project, it's integration in this one should be no problem.

As for the wire module, this one should be relatively easy to make: there will be a total of 4 wires of different color on the module. Depending on the color of the wire, the player will have to click on it, cutting the wire.

Finally, the Word Association Game. This module will have a specific word written on the display. Depending on the word, the player must press the corresponding button between red, green, yellow or blue.

Possible solution for randomizing Nodes

```
let maxNodes  = [];
let totalMaxNodes  = 12;
let northNodes  = [];
let maxNorthNodes;
let southNodes  = [];
let maxSouthNodes;

let node;
let timer;
let /**insert node types here*/;


for (let i = 0; i < totalMaxNodes; i++) {
  position[i]  = (x, y);

  let appear  = false;
  let r  = floor(random(0,2));

  if (r === 0)  {
    appear    = true;
  } else {
    appear  = false;
  }

  if (appear === true && i <= 6) {
    maxNorthNodes  += 1;
  } else if (appear === true && i >6) {
    maxSouthNodes  += 1;
  }
}

for (let i = 0; i < maxFrontNodes; i++)  {
  if (i === 0)  {
    let timer  = new Timer/**add data*/;
  } else {
    let node= new Node/**add data*/;
  }
}

for (let i = 0; i < maxSouthNodes; i++) {
  let node= new Node/**add data*/;
}
```
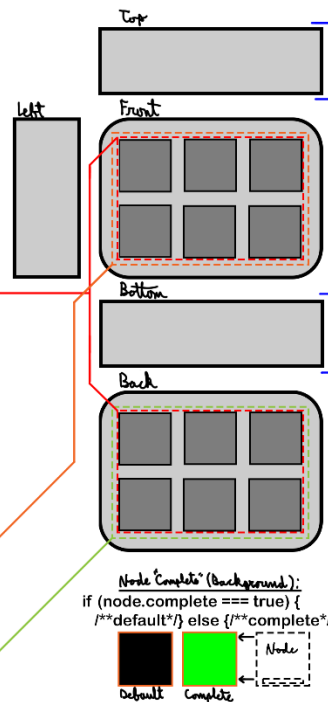
Top

Left   Front   Right

Bottom

Back

Node "Complete" (Background):
```
if (node.complete === true) {
/**default*/} else {/**complete*/}
```
Default   Complete   Node

Possible Additions:
- Batteries
- Serial Code } could change module Answers
- Lit indicators

Timer:
if all nodes are complete, timer stops
Time (3-8 minutes)

Button:
- Green : 1st letter in "Green"
- Red :   "H"
- Blue : 3rd letter in "Blue"
Color:

Wires:
- 4 wires Max
cut wire depending on...
- color
- wire position

Word Association:
Writing:	Button:
Axe	Red
Cat	Yellow
Bat	Blue
Dog	Green

Simon Says:
4 colored dots on display
press colored button in order

If I find myself with some extra time, I might try to add other components to the game, such as the equivalent of batteries, tags or lit indicators. Those elements would appear on the sides of the bomb (top, bottom, left and right) and would change the input of certain modules.