STEM Cafe Tech Camp

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Introduction

From July 9-August 10, 2018, I was a Summer Camp Counselor at STEM Cafe Tech. Despite my focus on Engineering, my basic knowledge of code allowed me to lead the coding portion of the camp. This position required me to create my own lesson plans that accounted for the large age range of students to teach several coding languages.

Site Information:

STEM Cafe Tech (Columbia, Maryland)

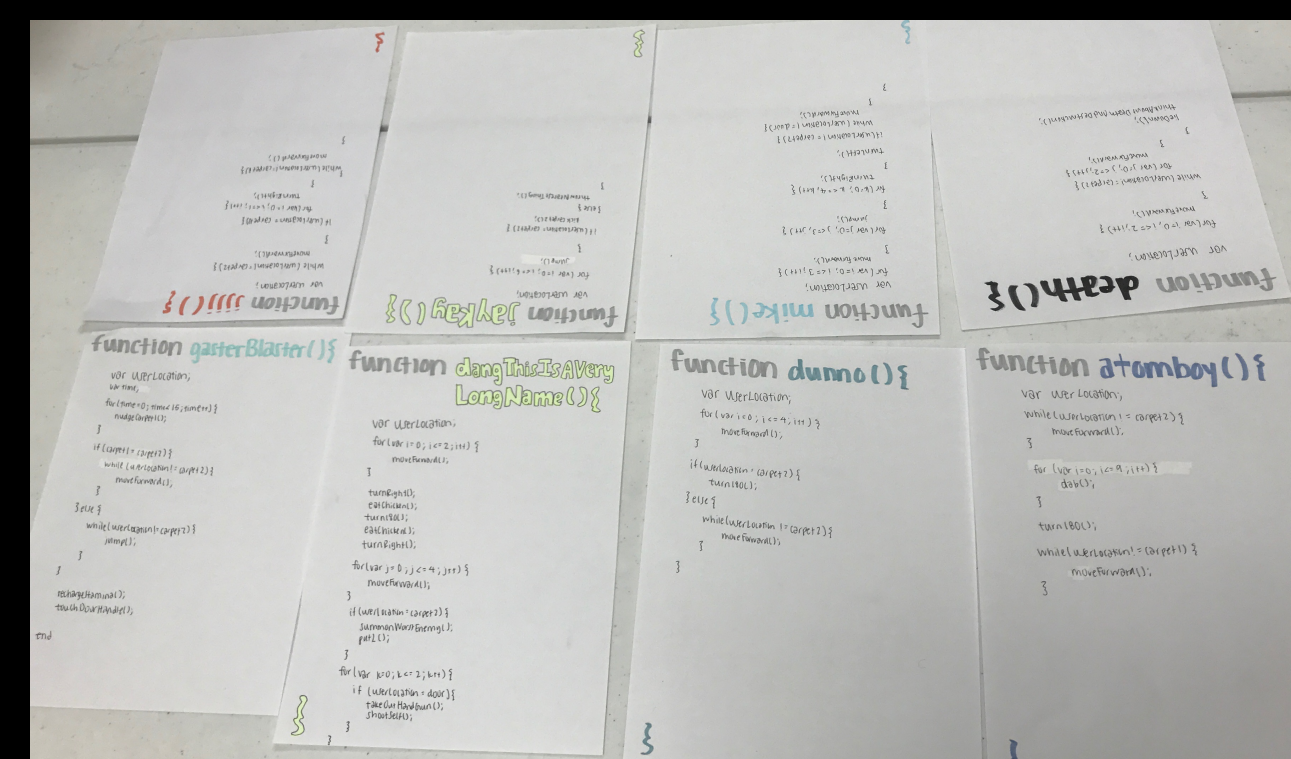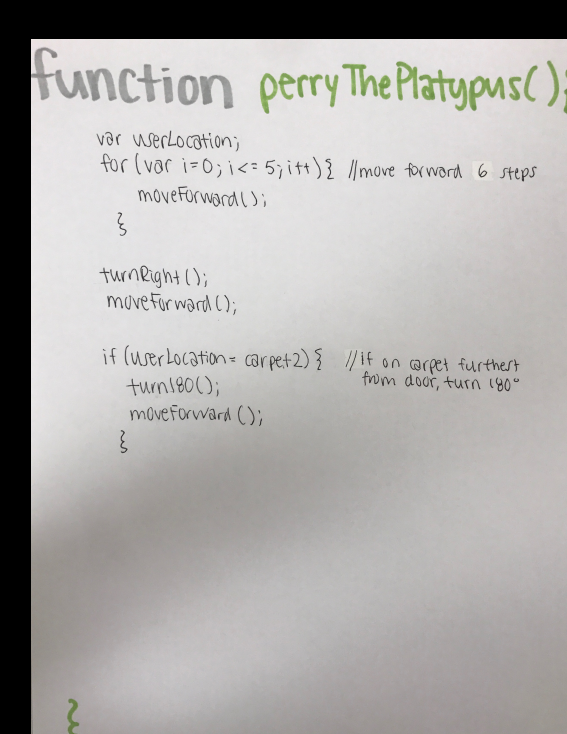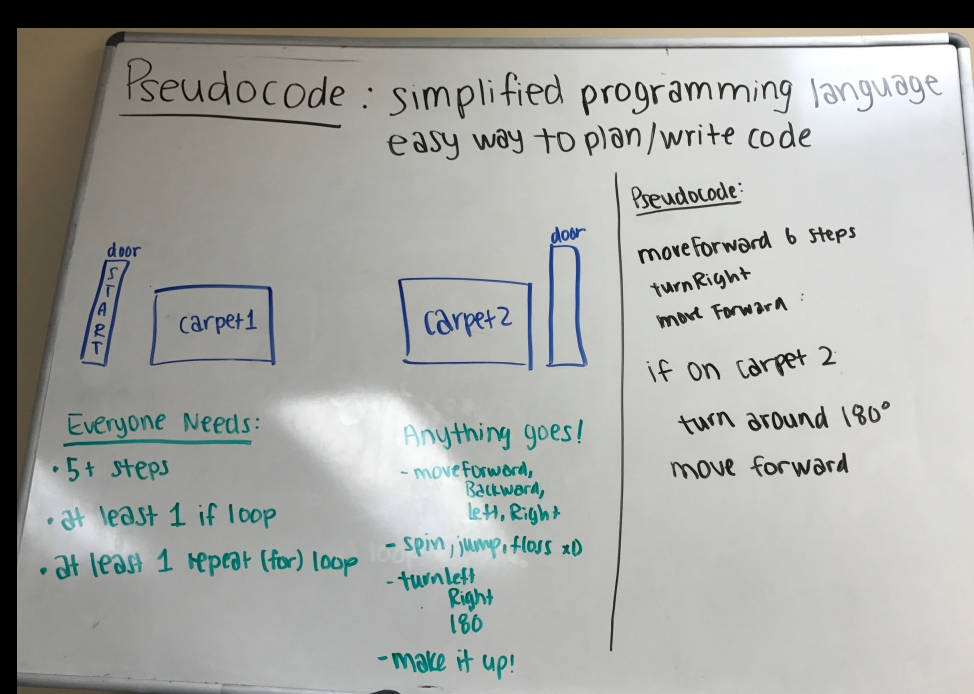Supervisor: Nigel Williamson

Site Mission: To teach students from grades 2-10 to code and design through fun activities while using problem solving techniques and logical reasoning.

Platforms Used:

- Code.org – Minecraft Hour of Code
- Scratch
- Online Java IDE
- Notepad (PC app)
- Handwritten Code

Coding Languages Taught:

- Java
- JavaScript
- HTML/CSS

Example Lesson Plan:

1.) Teaching JavaScript through understanding pseudocode first

2.) Turning pseudocode into syntactically-correct code

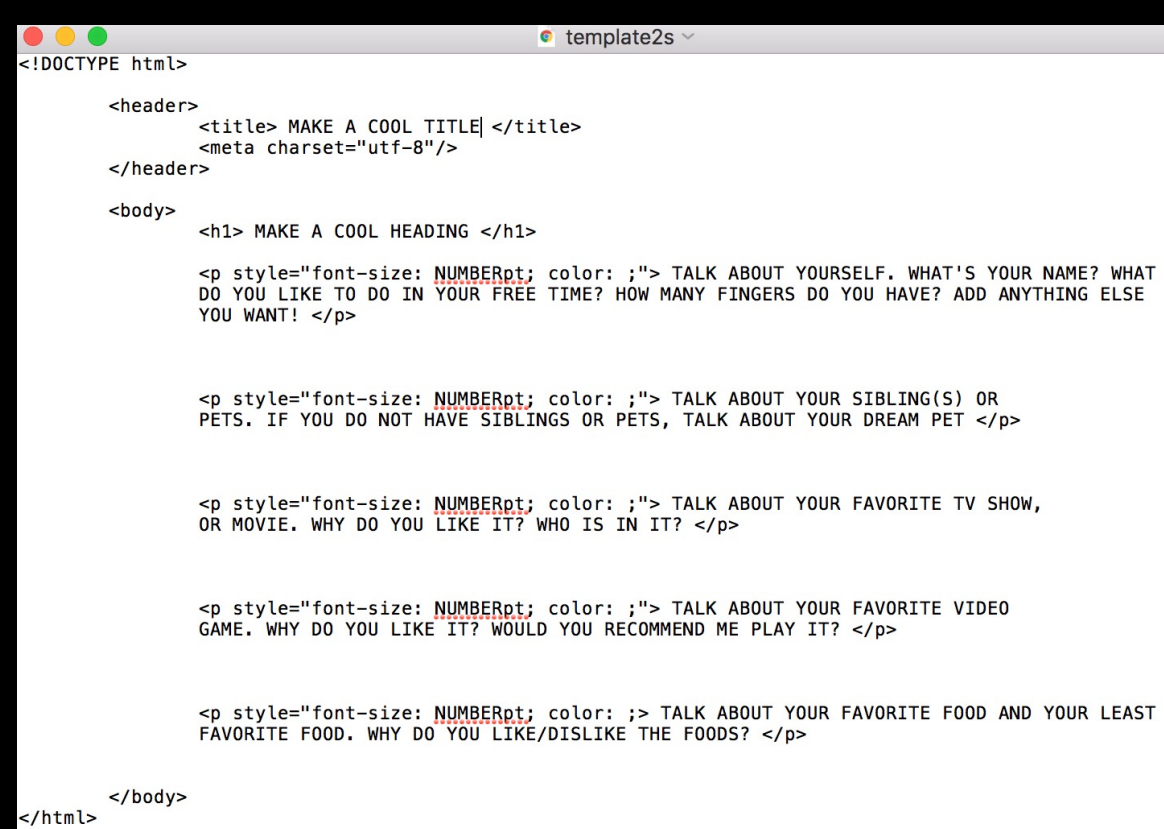3.) Students write their own pseudocode to be turned into a method.

Fig. (a)

(a) Self-generated basic HTML/CSS templates for students to fill in to make their own website.

(b) A student learning how to put links in his website clicks on a seemingly harmless link and gets Rickrolled.

Fig. (b)

Fig. (c)

Fig. (d)

(c) Maze that a team of students built with a time constraint of 3 minutes. This taught students the importance of teamwork and efficiency.
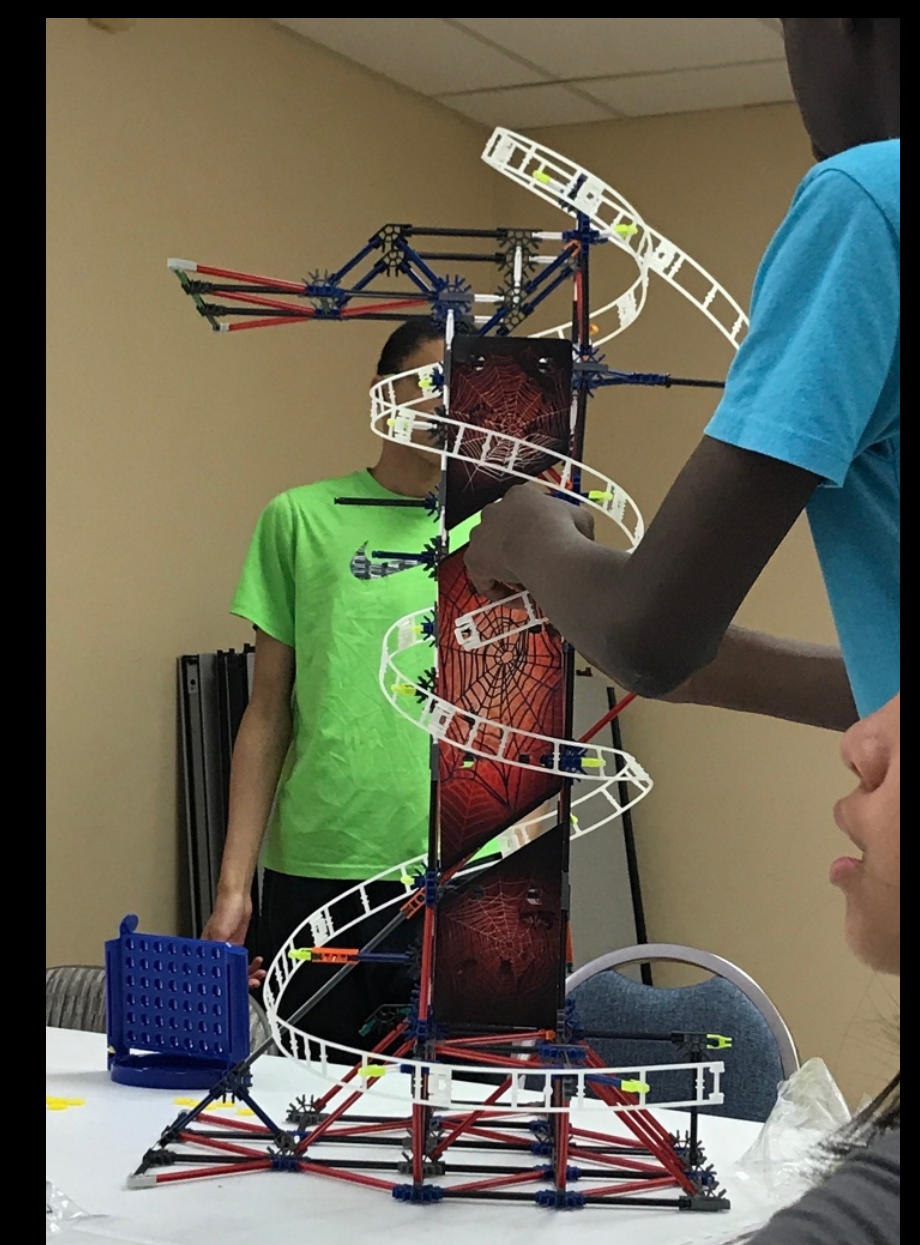
(d) Roller Coaster built by having one person follow only a set amount of steps before passing the parts on to the next person. Students learned what it is like to not have control over the whole task, working on separate parts to form a bigger product.

Final Thoughts:

Most of the time, it was up to me what and how I wanted to teach the students. This proved a challenge because the age range was so large and the camp had rolling admission, meaning there could be new students every day or week. However, I got to work with the students in groups and one-on-one., and if given the chance, I would teach at this camp again, this time with better coding templates and a few basic engineering ideas such as bridge building contests.

Acknowledgments:

Site Supervisor: Nigel Williamson

CPSG Professors: Dr. Holtz and Dr. Merck

The Kids at STEM Cafe Tech