

CPS Summer Camp at Vanderbilt University

Submitted by [AdamT](#) on Mon, 06/11/2018 - 9:08pm

Hey everyone. Yes, it hasn't been a year and I'm posing a new travel set. I'm on another SoS trip right now. I'm in Nashville. The Vanderbilt Lablet is holding a summer camp in CPS security. I'm here for the 2nd offering of this camp.

I have a couple of goals for being here. The first is to get familiar with the material. My objective is to be able to use the curriculum developed for the camp in other SoS outreach activities. I want to be able to have real content and demonstrations in cybersecurity. Example, have a seminar at ISEF or have a short demo in an exhibition hall. While I'm here, I can inspire and become more informed on what is going on. NSA.gov article in the future. I think so.

Now, what is this camp. This week long camp brings middle and high school students in the Nashville area (its a day camp after all). It doesn't just expose them to programming, but in the context of learning to program CPS (Cyber Physical Systems, IoT or Internet of Things) and deal with security. Its not just programming in the software side, they will be programming these robots then attacking and defending them.

Onto Day 1

Today was introduction to programing and especially the programming platform of Netsblox. This is a graphical programming environment. I'm really impressed with how much it can do without the students learning syntax. Its really intuitive and powerful. It was all web based and as far as I could tell, the students with their own computers had no configuration challenges. I do see how much underlying work must be done to make this work.

The programming tasks are really carefully done. They build and teach important concepts.

The first was a game. Put a sprite on the screen and then move it and cause conditions to happen. It was an introduction to the organization. And it taught programming concepts like if statements, variables and controls. I made a change where the player is a butterfly and there is a cat who is trying to catch you.

the second was was about drawing on the screen. At first I was thinking this logo. There is pen up and down and moving the sprite around. The key lesson here was learning the netsblox version of functions.

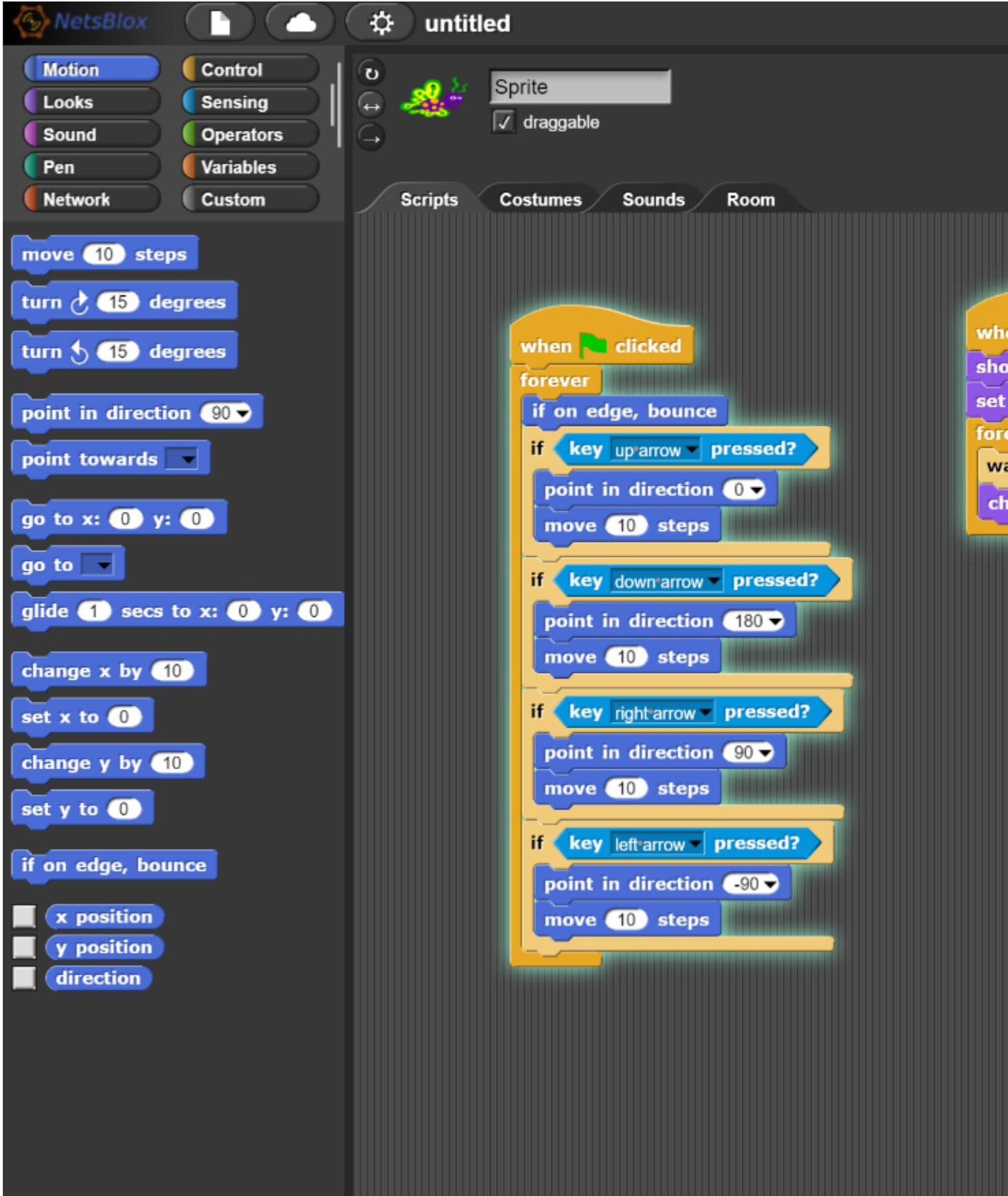
Now from doing shapes, we built a weather app. At this point, the kids are making

programs that would take me forever to do in C. They built a weather app. They pulled map data from google, processed into and made more queries. I guess the point of this was to teach using apis.

The final part of the day was lists. Make a list, get user input, store values. The ideas of the previous section were coming together. Each project built nicely and by the end of the day the students had a good idea of how to program.

I too have a good idea of how to use this. I did the programming tasks along with the students. Sure, I might have CS degrees but today was learning the new language. It's great for teaching and makes programming very accessible.

That's it for day 1. I'll be ready for day 2 tomorrow.



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