Tech News

Report on the fifth meeting

Some of the machines in Bob's classroom have been replaced by newer models, but we still have some old clunkers that run scratch very slowly. Perhaps we can get rid of the very oldest machines.

Last week the Tech club did more programming on their existing projects. We also had one guest, a prospective student for next year.

Running scratch at home

There are pointers to the version of scratch we are using (as well as some example programs) at

http://www.soe.ucsc.edu/~karplus/scratch_programs

I've also put PDF files with the back copies of *Tech News* there, so parents of kids who join Tech Club late can still read all the issues.

Alice, another programming language

Abe and I have found another programming language for beginning programmers, called Alice. It is also free and available for both Mac OS X and Windows from http://alice.org

Alice is harder to work with than scratch, but provides 3D animation, instead of 2D animation, and has a more sophisticated programming language. I think that scratch provides a better starter language, but when the kids start consistently running into the limitations of scratch, it might be worth learning Alice.

Family Science Night

The Family Science Night Committee is still looking for volunteers to set up a "mini-Exploratorium" in the Fellowship Hall Tuesday April 24. For more information and to volunteer to help see

http://www.soe.ucsc.edu/~karplus/family-science-night.html

Programming tip

Sound is an important part of many animations, and there are several mechanisms in scratch for producing sounds. Each sprite (and the stage) has its own sound output, so that complex multi-voice music can be created by having multiple sprites playing together.

Actually, each sprite has 3 sound outputs: a music synthesizer channel, a drum synthesizer channel, and playback of recorded sounds. All three can be used at the same time.

The drum sounds have two controls: which of the 47 drum sounds to play and how long to play it for. There is, unfortunately, no loudness control, and not all drum sounds are equally loud. Starting a new drum sound causes any previous drum sound for the sprite to stop (but different sprites can play at the same time).

The synthesizer sounds have 3 controls: which instrument type to play (there are 128 to choose from, including ringing telephones and gunshots), what pitch to play, and how long to play for. Again, there is no loudness and each sprite can play only one note at a time. The drum and the note are independent of each other.

One can also record sounds or import them from files and play them back. The play-sound command exists in two flavors: waiting for the sound to finish or continuing immediately. Unfortunately, the classroom computers do not have microphones, so recording can only be done at home.

The program always waits for drum and synthesizer sounds to finish, so if you want to continue without waiting for them to finish, you need to use a broadcast message:

This code fragment plays a prerecorded meow sound, rings the phone three times, and plays a cymbal for two seconds, all at the same time. This is as much simultaneous sound as one sprite can produce—for more you need to enlist other sprites.