SqueakCMI Notebook:
Projects, Tools, and Techniques

Introduction

Welcome to eToys/Squeak: an object-oriented programming language. This notebook was written to introduce Squeak to curious beginners with step-by-step descriptions of projects and how they were done.

Advice is freely given in the hope that the path you take to learning eToys/Squeak is quick and smooth. The Squeak community will be generous with their time, their knowledge, and their willingness to help newcomers. The Office for Mathematics, Science, and Technology Education at the University of Illinois Urbana-Champaign invites you to use these materials to the benefit of students everywhere.

These projects can be explored on the computer by opening them from www.Squeakcmi.org. This dynamic experience of projects on the computer in conjunction with the written materials should give you a range of ideas and possibilities to combine in many ways and for many purposes.

Section I

This section contains two easy projects designed to help you get started with Squeak. They are followed by an extensive description of the rich resources, tools, icons, supplies, and conventions that make Squeak what it is.

Section II

This section explains more complicated projects. They are in alphabetical order by the name of a Squeak tool used predominantly in that project. The projects are not in sequential order by level of difficulty. The project's name can be used to locate that project at www.Squeakcmi.org. So, if you wonder, "What is a scale factor and how could it be used in a Squeak project?" you can find out.

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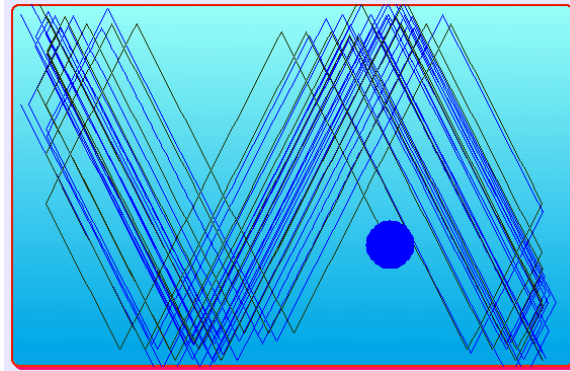
www.SqueakCMI.org

Resources, projects, tutorials, and standards-based lessons applying Squeak in math, science, language arts, social science, and art. Additional projects and essays can be found on the website. Tutorials developed by math specialists show the myriad ways Squeak enriches the study of geometry and trigonometry. The SqueakCMI community can answer questions, share ideas, and schedule workshops.

www.squeakland.org

The origin of Squeak: software, tutorials, and example projects. Get the most current versions of the software at Squeakland. The site includes interesting essays about the nature of learning, about programming and thinking.

www.squeak.org

Technical information for experienced programmers and developers

Kathleen Harness
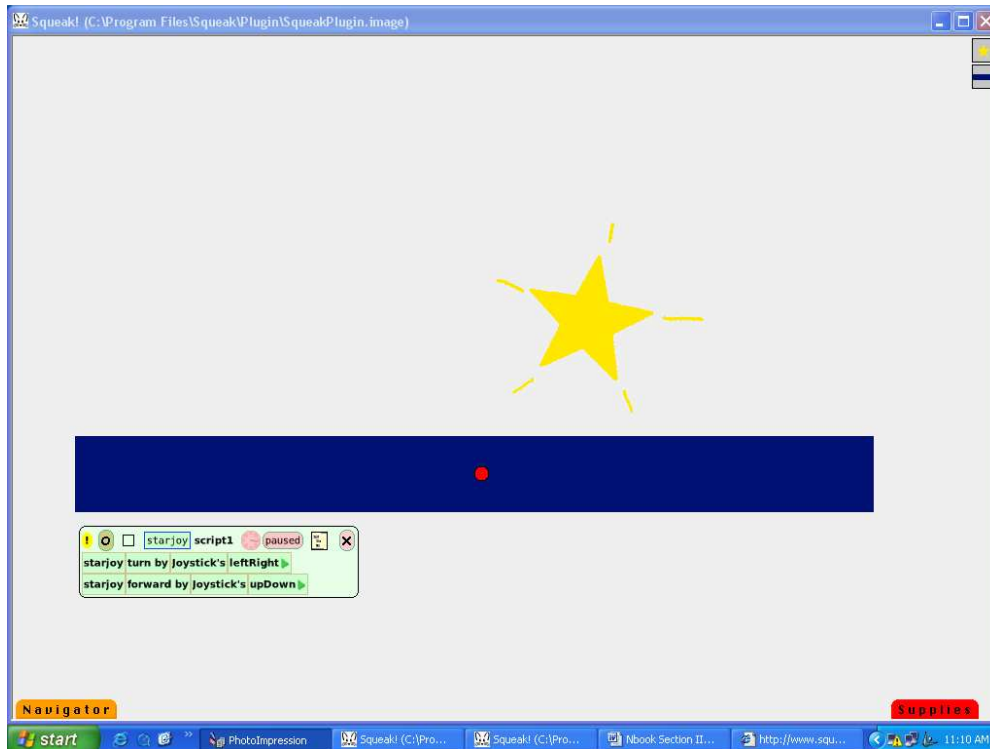squeakcmi@uiuc.edu

Joystick: joystickdemonb

A joystick is used in this project to control the motion of the star.

Draw a shape using the paint brush in the Navigator flap and keep it.

Make a script for it using the cyan eye in the halo and opening a viewer panel of script tiles.

Name the object and then drag and drop the tiles forward by 5 and turn by 5 onto the screen into one script box.

Drag out a copy of the joystick and drop it on the screen.

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Here is what the joystick looks like when you open the Supplies.
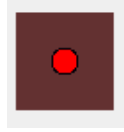
The joystick's color and size were changed. Get the halo for the joystick and click on the paint brush handle in the halo.
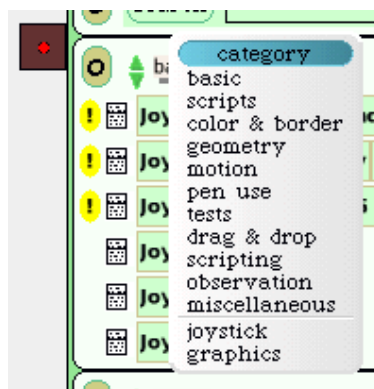
Click on the color you want the box to become and use the paint bucket to pour it into the brown box. Keep it.

Change the shape by clicking on the yellow halo handle. The center ellipse's color can be changed too. Put the cursor point on the red color and click until you see the halo for it. Select the paint brush tool and change the color with the paint palette that opens for the ellipse.
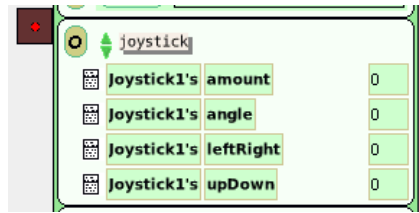
The joystick controls the other object by adding script tiles for the joystick to the script tiles to it.

Get the halo of handles for the joystick, click on the cyan eye to open a viewer of script panels.

The joystick comes with a special category of script tiles. Click on the word 'basic' near the top of the script viewer to open a menu that looks like this.

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Click on joystick to open the new category of tiles.

Click on joystick1's left/Right and drop it into the script for the star.

You decide if you want left/right to be associated with a turn or with a forward movement. This script added up/Down to the forward tile and left/Right to the turn tile.

Start the star's script ticking and then click on the center ellipse of the joystick to control the movement of the star. If the star's script is paused the joystick does not work.

The joystick tiles left/Right and up/Down do not both have to be used as a pair in scripts.

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