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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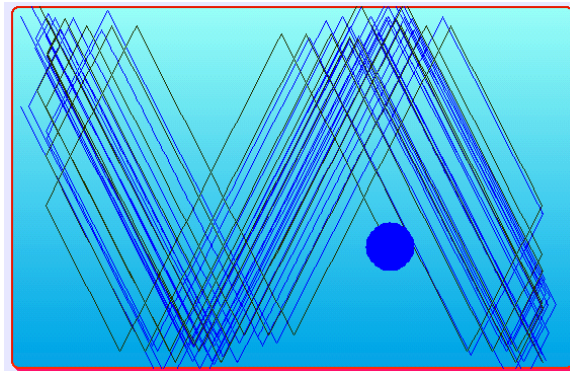
www.SqueakCMI.org

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

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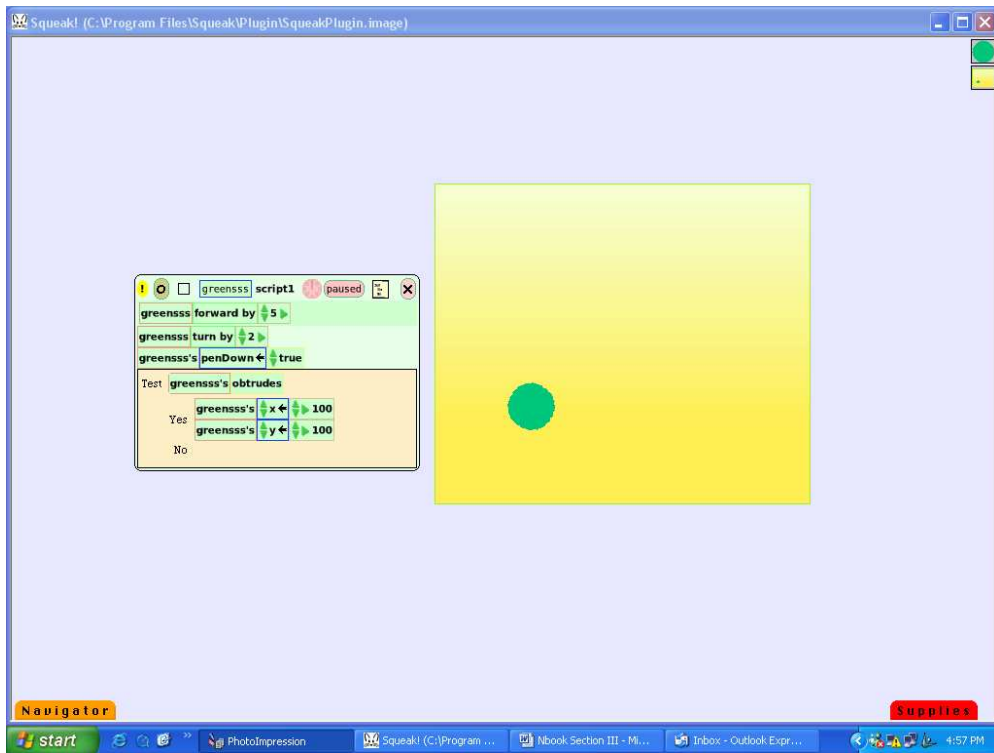www.Squeakcmi.org   2
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Obtrudes: obtrudesnb

Obtrude means to push out of a boundary. This project includes a test that says, if the green ball obtrudes then, the ball will return to a starting place that is specified with x and y coordinates.


Drag a playfield out of Supplies and drop it on the screen. Change the color and border using the cyan eye of the playfield's halo.

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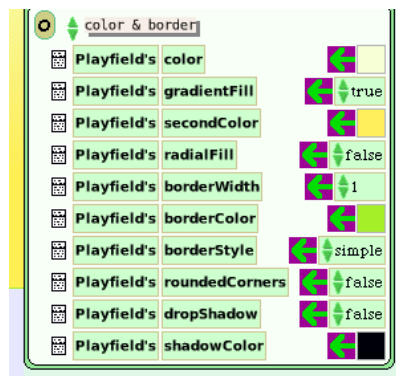
Then draw a sphere in a blank part of the screen, keep it, and then drop it into the Playfield. Do not draw the sphere on top of the Playfield because this sometimes causes errors.

Open a viewer panel of scripts by clicking on the cyan eye of the halo for the object. Drag out the tile forward by 5 and drop it on the screen. Do not drop the tile in the Playfield. After the script box forms then add the tile turn by 5 to the same script box on the screen.
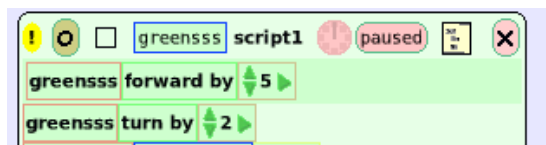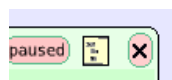

It helps you see what is going on if you add a pen trail to the project. Click on basic in the viewer panel and hold down until a menu opens. Choose pen use from this menu.
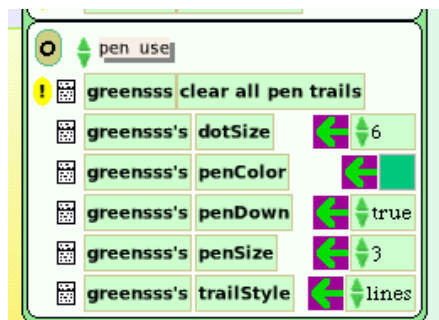
Choose a penColor by clicking in the blue box to the right and use the color chooser that appears. Here green was chosen.

Use the tiny green up/down arrow by the word false and change it to true. These tiles do not need to be moved into the script box for the green ball to take effect. Leave them where they are.

Now, click on the small tan rectangle in the top line of the script box to get a test form that will be added to the script box.

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Drop the test form into the forward and turn script box.

Click on basic in the viewer panel and open the category called motion.
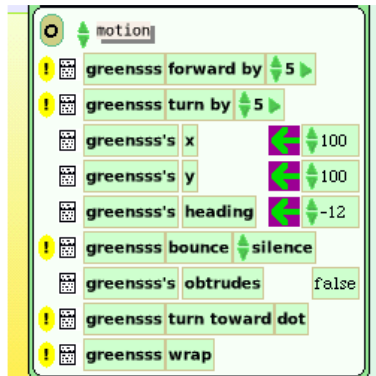
Get a copy of the phrase tile greensss's obtrudes and drop it in the top line of the test form.

Then decide what you want to have happen when the ball does obtrude at the edge of the Playfield. This project has the ball return to the same x and y position every time it obtrudes. It does not always have the same heading or position when it does obtrude so it leaves an interesting trail pattern.

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