

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.

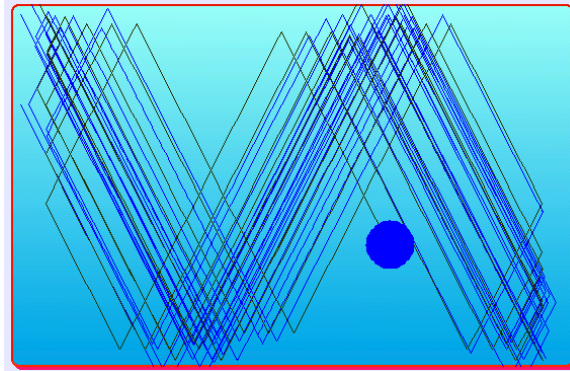
Section II

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.

www.Squeakcmi.org

The Office for Mathematics, Science, and Technology Education
University of Illinois Urbana-Champaign





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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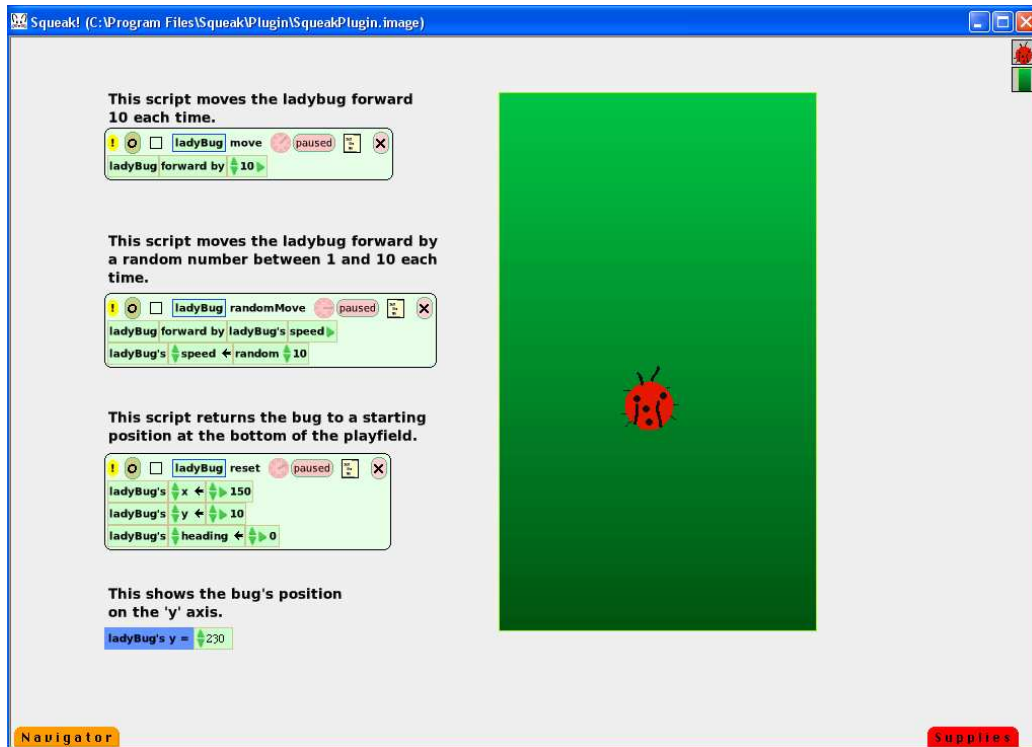
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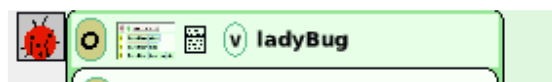


Variable: bugSpeednb

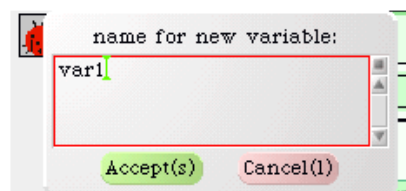
This project shows how to create a random variable speed for the ladybug.



Draw a ladybug and keep it, get the halo of handles and open a script viewer for it. In the very top line of the script tiles is a small v.

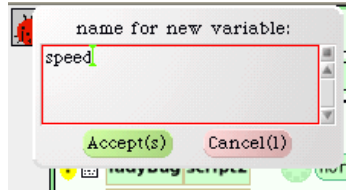


Click on the v and a box will appear. Name the variable for what it will do.

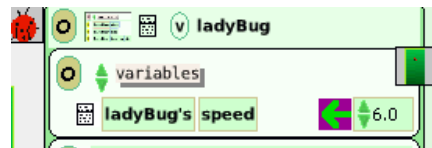


This example calls the new variable speed.

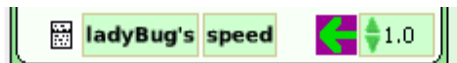




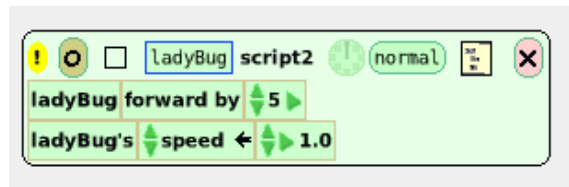
After you click accept you will find a new category of scripts in the script pane. The new category is called variables. The variable you just created is now on a tile you can use in a script.



Make a script for the ladybug that uses the ladyBug's entire speed tile.



Drag it using the bright green arrow and drop it into the script box below the script tile ladyBug forward by 5.

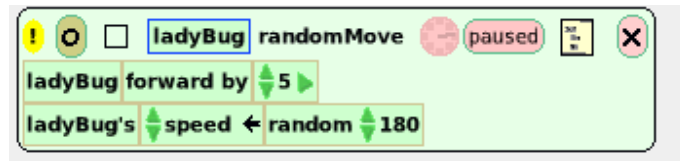


We want the bug to move by a random amount each time so open Supplies and drag out a tile called random 180.

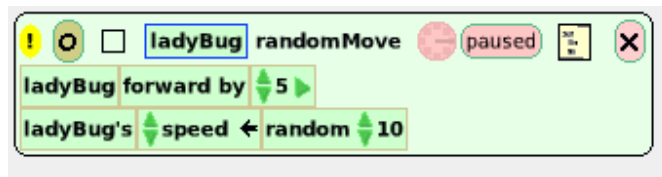


Drop this tile on top of the number at the end of the ladyBug's speed tile in the script.





This tile means the speed will vary between 1 and 180 but that number can be changed to any value. The number 180 is just there as an example. This project will use smaller random numbers and the new limit is set at 10.



The last step is to change the tile ladyBug forward by 5 so it will go forward by the ladyBug's random speed. The script tile that will do this is the first part of the whole tile.

This tile replaces the 5 in the script ladyBug forward by 5. Drag the tile to the 5 and drop it in the bright green highlight area that appears.

