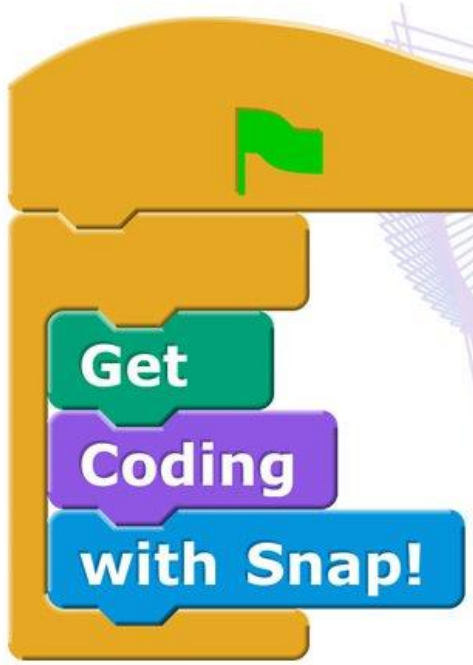
openSAP Get Coding with Snap!

Exercises Week 1 Unit 1

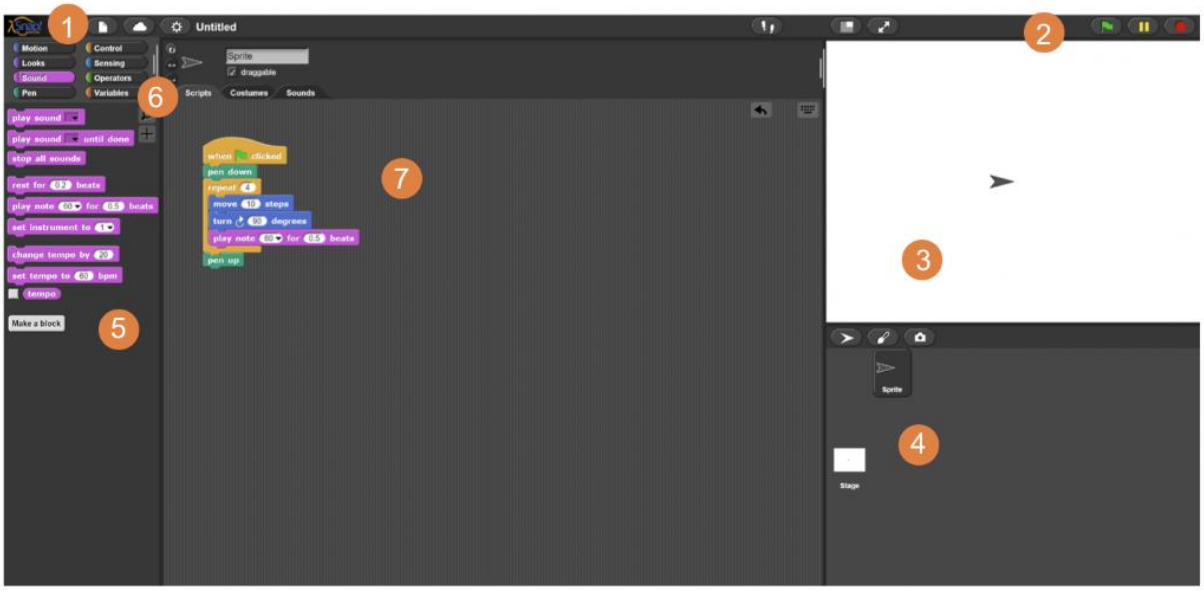


PUBLIC

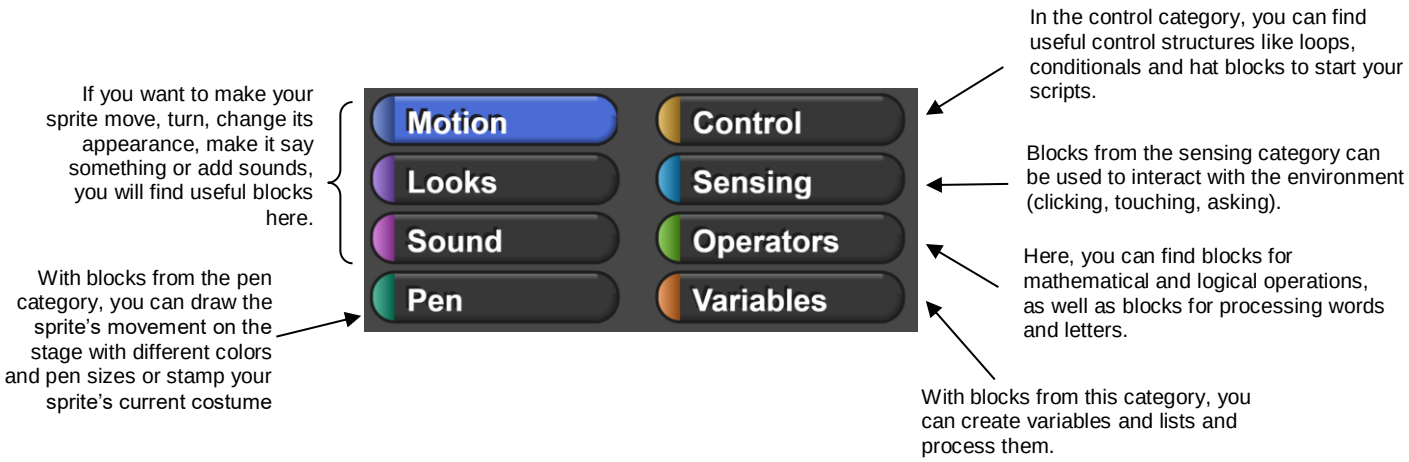
WHAT YOU HAVE LEARNED THIS WEEK

The Snap! Development Environment

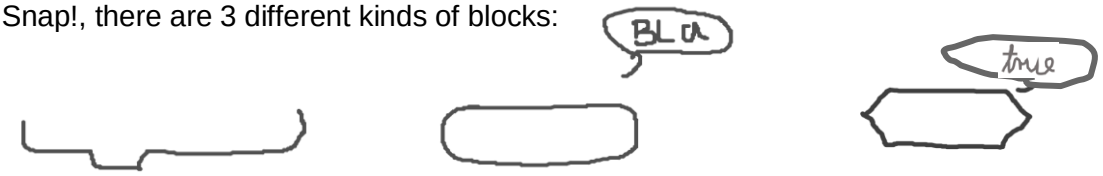
You can access the Snap! programming environment in the browser from snap.berkeley.edu -> “Run Snap! now" or you can use the direct link snap.berkeley.edu/run. If you don’t have a permanent internet connection available, you can download the Snap! sources from the Snap! site and run the snap.html file locally in your browser.



Snap! is a blocks-based programming language, which means that you program by dragging and dropping chunks of code – the blocks – together to so-called scripts in the scripting (7) area. You can find the blocks in the palette (5) sorted into different categories (6).



In Snap!, there are 3 different kinds of blocks:



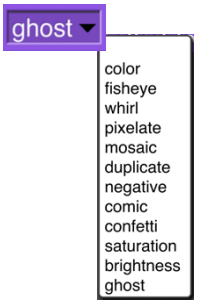
Commands look like jigsaw pieces and do something	Reporters have an oval shape and report values. They can be used as input to other blocks	Predicates are a special kind of reporter that can only report “true” or “false”

Some of the blocks in Snap! have inputs, which means that you can specify what the block is doing exactly.

Some of the input slots have a white background, in which you can type your inputs. Some of the input slots have the same color as the block. Here, you can pick from a dropdown menu of input options or drag in other blocks.

You can pick your desired input from the input options menu when you click the black arrow.

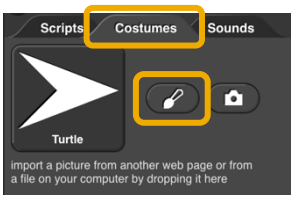
You can type numbers into this input slot

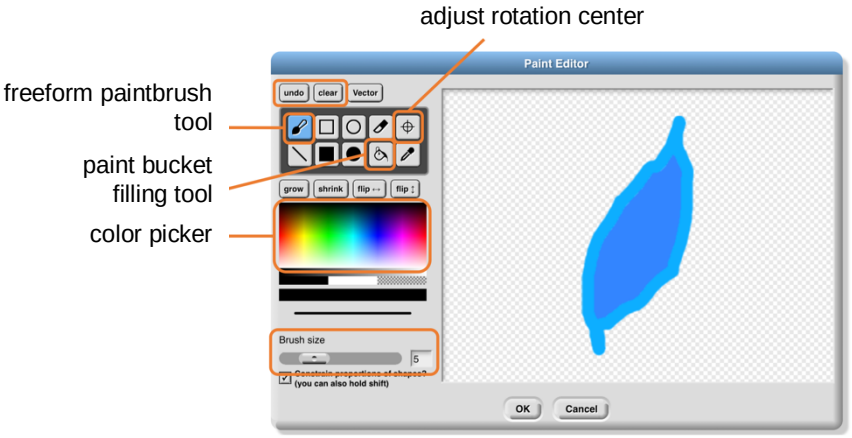


Your scripts might trigger reactions of your sprite, the object you program, on the stage (3). The sprite corral gives you an overview of all your sprites and provides features to add more sprites. By default, your sprite looks like an arrow, the so-called turtle.

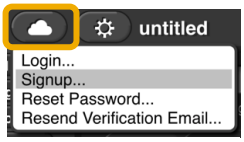
However, you can create individual looks for your sprite by letting it “wear” a costume.

You can create costumes in Snap! in different ways, e.g. with the Paint Editor which you find in the "Costumes" tab of your sprite. The paint editor provides different tools to draw your costume. Use the paintbrush tool to draw a freeform costume or pick one of the pre-built shapes. Adjust the brush size with the slider and choose your favorite color in the color picker. You can fill your drawn shape with the paint bucket tool. If you don't like what you have drawn, you can either click "undo" to remove the last action or "clear" to start over.

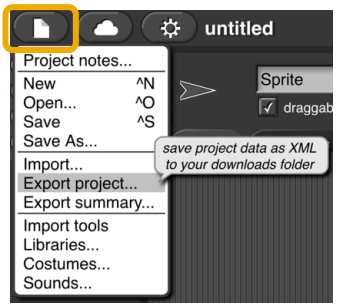




If you like your project, you can save it in the menu area (1). You can either register for a cloud account or save your projects locally by exporting them as *.xml files to the downloads folder of your browser.

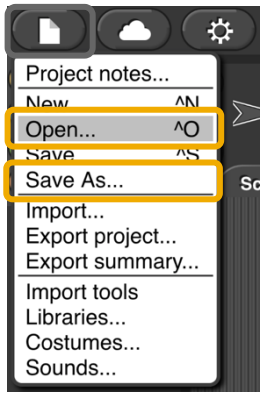


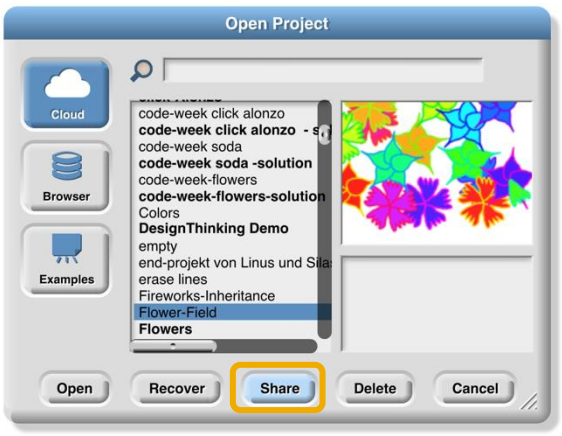
register for a cloud account



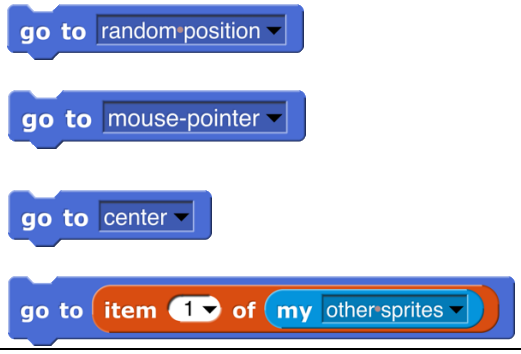
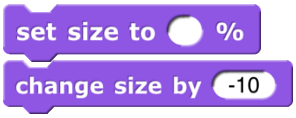
export project as *.xml file to the downloads folder of your

If you like your project and want to share it with others, you can create a shareable link. Go to the file menu and pick "Open…" or "Save As…" and search for your project. Click on "Share" to get a unique URL for that project which you can share with others. This only works with projects that are stored in the Snap!-cloud. If you want to share locally saved projects, you can send the file to others.





Useful Blocks

Moves your sprite to a random position, the mouse pointer, the center of the stage or e.g. another object	
Adjust the size of your blocks	
Applies the graphic effect selected in the first input slot on your sprite. The “set” block does that with absolute values, the “change” block uses the current effect values as reference.	
Puts on the next costume of a sprite. Cycles through all the costumes but leaves out the turtle	
Stamps your sprite’s current costume on the stage	
Clears everything that is drawn or stamped on the stage	
Loop, that repeats the script inside its c-shaped slot as many times as indicated in the input slot at the top of the block	

YOUR TURN

- Draw a costume for your sprite with the costume editor and try out the graphic effects blocks from the looks category. Experiment with different effects and different input values

- Extend the script in your flower field project, so it draws additional flowers that are smaller and only have 5 petals.

- Try to make an interactive flower garden. Use the following blocks to write a script, that draws a flower at the position of the mouse pointer, whenever the mouse is clicked.

- Feel free to experiment and tinker with other blocks ☺

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THIS IS A LEGAL STATEMENT.

Coding Samples
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