Session 2: Practice Problems

Concept Questions

1. Explain generalization. Use both a real-world example and an IT specific example.

2. How is abstraction and generalization similar? How are they different?

3. How is generalization used with data? How is it used with actions or behavior?

4. When looking at a function, what things might indicate that isn't very good and that it should be improved?

5. What is composition? Give an example of how it might be used in both a real-world and IT example.

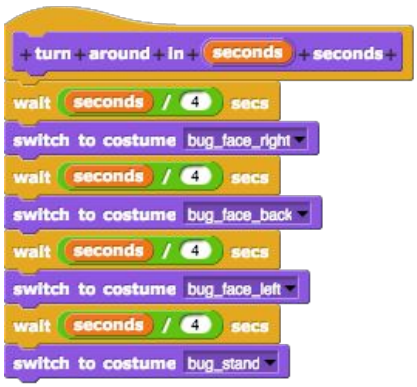
Programming Assignments

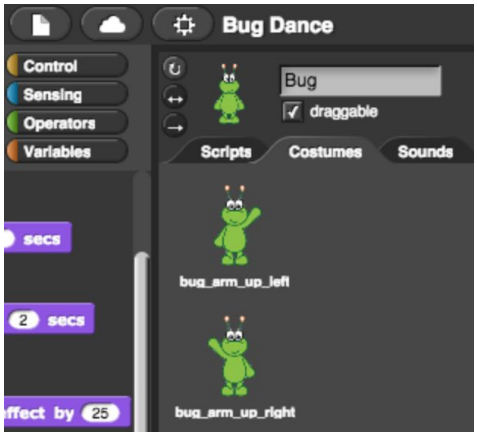
Make a Bug Dance!

Load this starter BUG DANCE SNAP PROJECT, or this smaller one (same thing without the big sound file).

Go to the Looks palette and locate the custom blocks that have been added to create some starter "bug moves". Right-click and edit them to see how the blocks were made. For example:

Also note that the bug has multiple costumes (view them from the Costumes tab) and that you can change his appearance by switching between the costumes.





For this assignment:

1. Make at least three new custom blocks for simple bug dance steps like the jump shown above.
2. Make at least five new custom blocks that use composition to assemble the simple steps into more complex moves or sequences (like a slide, jump, turn). Use dance moves you know, or make them up.
3. Assemble the complex moves into at least two repeatable dance sequences.
4. Tie it all together with music or sounds. You can add your own music, but be careful with the file size. Larger files can cause it to slow down when running and that'll probably ruin your dance experience.

Bonus: Add a second script (perhaps that starts when the space bar or another key is pressed) to have the bug give a dance lesson while explaining how computing concepts are used to make him dance.

Field of flowers

Draw a field of flowers, and give each flower a different color, size, shape, position, and so forth. Use some of the simple custom blocks you've already written, and write new custom blocks that make use of those simpler blocks to do complicated things.

Use 

to draw lots of flowers, flowers with lots of petals, and so forth.

Use 

as much as you can to make the flowers interesting and different.

Here is a custom block (from someone who went crazy) to give you some ideas:

And, you could use this starter project, which contains a few fun backgrounds. To use them, click on the Stage sprite at the lower right of the Snap window, select the Costumes tab at the top of the scripting area, and select the background that you want for your program.