day53 Scratch listMania
Due: Thursday 1/13 (6th period)
          Friday 1/14 (7th period)

Today we're going to play with lists. List variables in Scratch are similar to Python lists in that you can add and delete items to keep track of a bunch of stuff. You create lists in the Variables script group.

Today I want you to make a program that creates a list, and then prompts the user to add items to the list. Use a sprite and text dialogs to give instructions. It should work like this: Each time the user clicks on the sprite it asks you to enter another item for the list. If the item is not already in the list, add it. If it is already in the list, say that, and don't add it again. In between, the sprite just sits there. To end everything the user hits the space bar (after at least 3 items have been added to the list) causing the sprite to bounce to random places in the window saying the items in the list one at a time as it deletes them from the list. If the user has less than 3 items in the list when they type the space bar, they get an alert explaining that they need at least 3 items before they can be finished. When the whole thing is done the list variable is hidden, the sprite is hidden.

Here are all of the commands you can use with a list under the Variables block:

Also, you'll need to ask the user for information. We did this last week using the Ask and answer blocks under Sensing.

You can then check if your list already contains **answer** as shown below using an if/else block from Control:
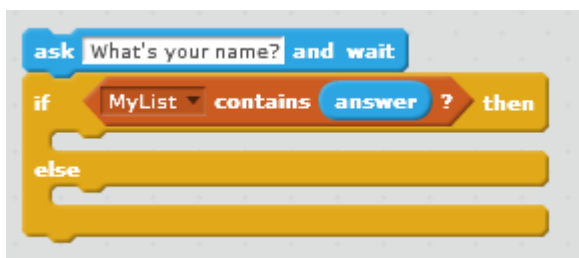
The above example is asking for your name, but your program would ask for one of whatever you were building a list of, obviously. You can do a shopping list, a list of classes you have taken or might take at Analy, or any other type of list you can think of. You can't make your list a list of fruits, because that is the example I showed in class.

You can put two things together in an alert using the Join block. The following could be used in a Say block to say "Thanks, I like apples", if the variable answer contained the word "apples":
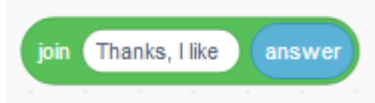
When you are done, your program will meet the following criteria:

- When you click the green flag the list is emptied if it had anything in it, the sprite appears and explains that we're going to make a list of things (say what type of things) and explains that to add to the list you click on the sprite.

- The list variable appears when you press the green flag.

- Each time you click on the sprite it asks you to enter something to add to the list.

- If the user tries to enter an item that is already on the list, they are told that the value is already in the list and to try again.

- The sprite acknowledges each entry with a message of some kind before asking for the next entry. For example by saying something like "Nice choice, apples" (that would be if the user entered "apples" into the list)

- If there are less than 3 items in the list and the user presses the space bar, the sprite tells the user that before we can stop we need at least 3 items in the list.

- If there are 3 items or more in the list and the user presses the space bar, the sprite jumps around the window to random locations announcing one item from the list at each location as it clears the list, one item at a time.

- When done, the window is clear, the list is empty and hidden, and the sprite is not visible.

- The dialogs/alerts have proper spelling and spacing. If your message says "Nice choice:apples" without a space before apples then I will not give you full credit.

Get me to check you off in person when you are done. Use the above bullet points to test your program before you call me over.

Extra credit options: Make the acknowledgement after each entry be a random message from your own hidden list. So you might say "Nice choice, apples!", then "Whoa, carrots, I did not see that coming.", or "I will allow it, but really, broccoli?", randomly. If you get the main assignment done and can think of something else totally cool you'd like to add, check with me and I will tell you if it's worth some extra credit.