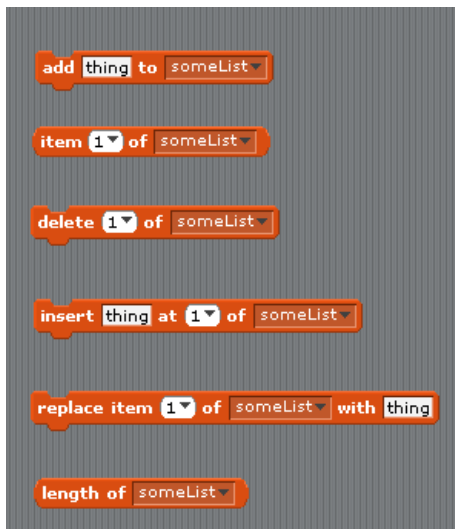**LAB 4** – Using Lists in Sprite

Instructions for Creating and Using Lists

On the left are the fundamental instructions for using lists in Sprite. The add instruction adds an item to the next location of a given list. If the list is empty, then it is added as the first item in the list. BE CAREFUL – a list will contain the items from the last time that the program was executed. Therefore, if you do not erase all the elements in a list at the beginning of your program, the new items will be appended to the previous items in the list.

To erase all the elements in a list use:

The remaining instructions allow one to select a given item from a list, delete a given item, insert an item at a given location (shifting the ones below it down one position), and replace an item. The length command is very useful. For example, when wanting to use a repeat loop that looks at each item in a given list. (Note that not all these instructions are needed for this particular assignment.)

Task

Create a Scratch program that contains sixteen sprites, each with one of four possible costumes. Each sprite should randomly move around the screen, bouncing off the edges. The user will try and "catch" each of the moving items by placing the mouse cursor near an image and clicking the mouse. If the mouse is clicked within a certain distance of the image, the image will have been "caught." As a result the image will disappear.

The program should count how many of each type of sprite have been caught. To do this, create a list called capturedSprites, initialized to contains four 0 values. Each time a certain type of sprite is caught, the number of sprites of that type should be incremented by 1. Each type of sprite should be worth a different number of points. Use a repeat-until loop to have your program continue for a certain period of time. When the program terminates, it should display the total number of points that the player has received. The following Scratch instructions are needed for determining if a sprite has been captured,
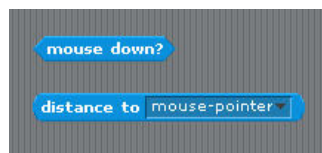
For fun (if you have time), add background music, and certain sounds that occur for each of the four different types of sprites.