

Scratch Programming: 6. Lists

Programming concept: Lists

Task: Create two lists and find the values that are in both

Lesson Objectives:

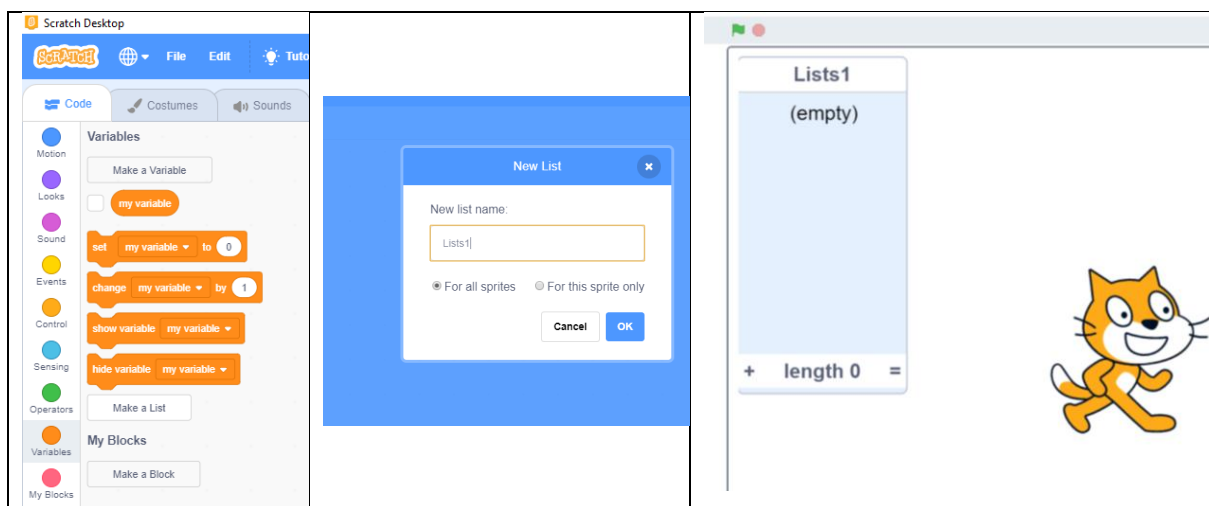
To learn how to use lists, and how to use lists, loops and conditional if statements together.

What do you need to do?

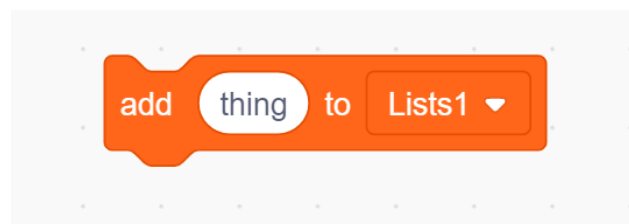
Follow the instructions below. Always remember to save your work (Save as) in a place you can remember and test your program. Regular saving of your programs will help you if you make mistakes or if there is problem and you lose your work.

Instructions

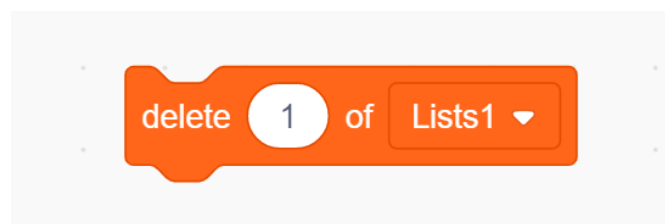
Create a list and name it Lists1



We can add items to the list using the add (thing) to Lists block. Change the word “thing” to your name. Then click on the block and notice how the list changed. Also notice it has a number 1 by your name.



We can also delete items from the list using the delete (1) of Lists1.



Again notice that the number, called the index, is used to delete the item. A list is a collection of values starting at the position 1, then 2, then 3 and so on.

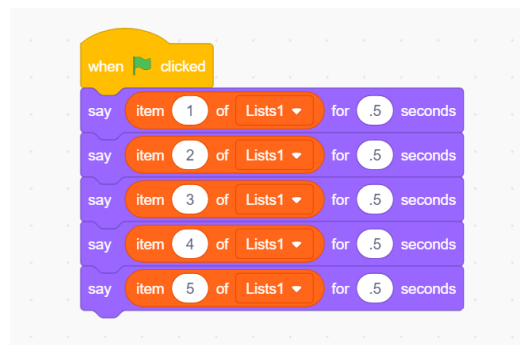
We could have a list with a collection of numbers or names or dates or a mixture of different types, some of which could be repeated (duplicated).

To access an item in a list we can use the index. So to delete your name we use “delete 1 of Lists1” as your name is in the first position and therefore has an index of 1.

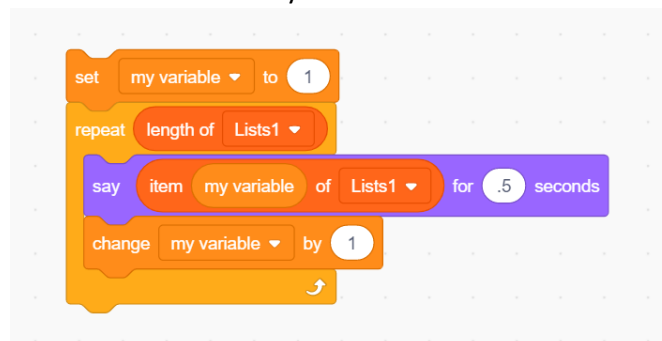
Now add some random numbers that you can choose yourself. Finish with at least five numbers.



Now we wish to show these numbers.



What would you do if there were a million numbers in the list? We can use a repeat loop and a variable to say where in the list we want to say the value.



We start the variable (e.g. myvariable) at 1 and loop through the list adding 1 to the variable at the end of, but inside, the repeat loop. Finally we can change the number 5 to the length of the list so now we can loop through a list of any size.

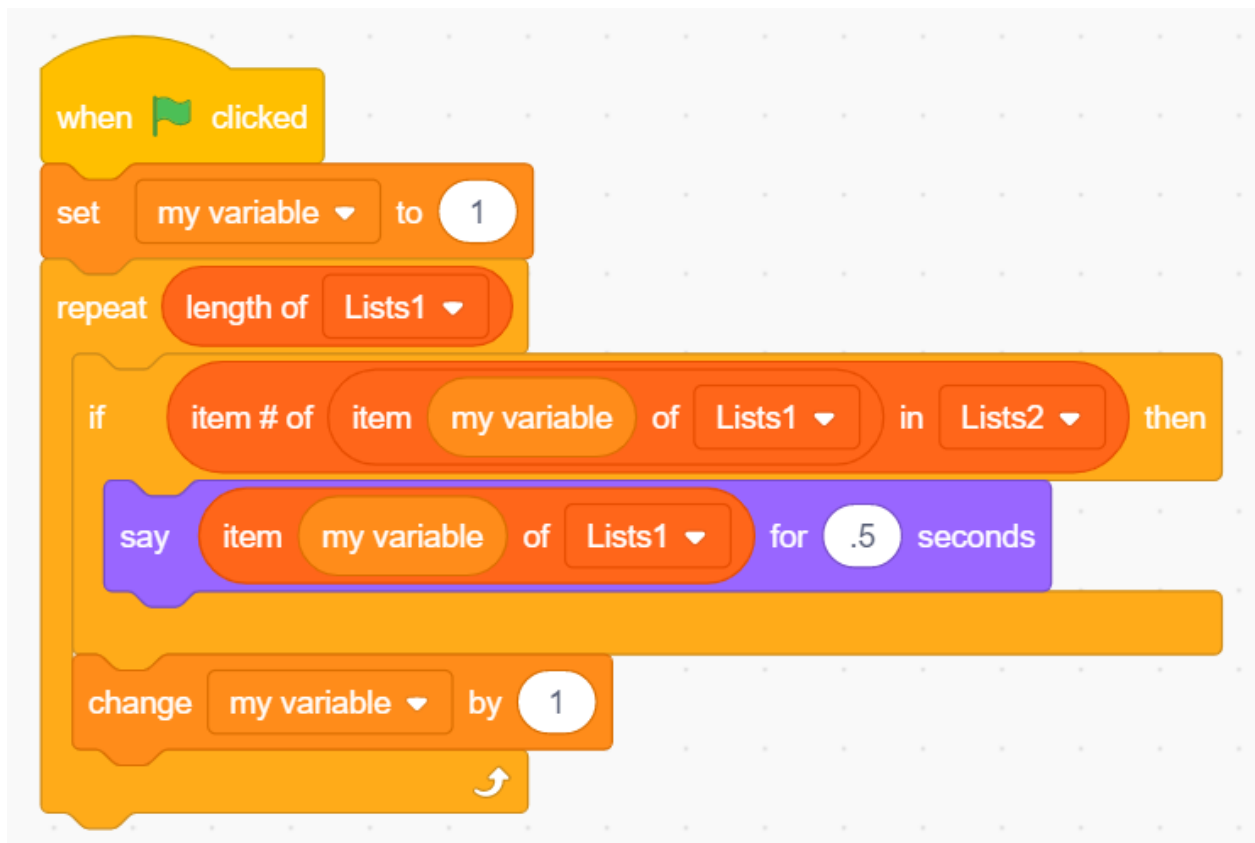
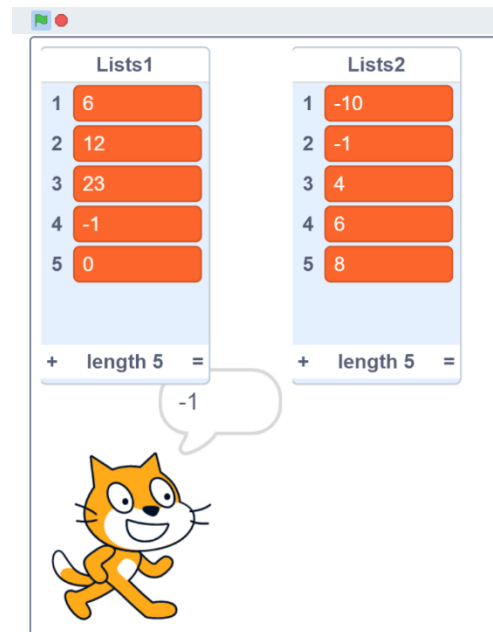
Task: Create two lists and find the values that are in both

Now to complete our task, we need to:

- create a second list called Lists2
- fill it with numbers, some of which are in the first list and some that are not.
- use an if statement to see if the value in list 1 is in list 2
- say the value if it is in list 1 and list 2

Try to do this yourself first. If it does not work then it is good practice to slowly go through your code to find any errors. Maybe you can use 'say' blocks to help you to 'debug'.

You should finish with something like the code below.



Well done you have completed Task 6