

day61 Scratch calculator

Due Tue 1/31/2023 (6th period), Wed 2/1/23 (7th period)

Today's task is to make a calculator. Not a regular calculator like you might have in your backpack, but a special one that does six functions.

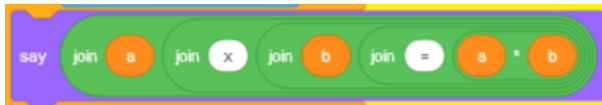
Create two sprites to represent two variables. I used A and B. When the user clicks on them they are asked what numbers to put into them. Store the values in variables with the same names. Make the values show on the screen as shown to the right.



Then, when you mouse over any of six or more buttons, have Scratch announce the result that is appropriate for that button. For example, if you move the mouse over the "A times B" button, show in a single "say" command " $5 \times 8 = 40$ " if a was 5 and b was 8.

The answer for a button shows when you just move the mouse over that button and then disappears when you move the mouse away. You can do this with a forever loop and an if/else block (if touching mouse pointer, say something, else say nothing). Don't use a "say XXX for 2 seconds" block; I want the result to show instantly if you mouse over and then disappear immediately if you move the mouse away.

Remember, you make a bunch of things show up in a single "say" block using the join command, often multiple join blocks linked together. To get the above answer I used the following 4 join blocks together:



This would say " $5 \times 8 = 40$ " when $A = 5$ and $B = 8$.

Requirements:

- Your calculator has a fun background.
- Set up your A and B variables. When you click on them, they ask you to enter a value. The value shows nearby.
- Get one calculation button working perfectly, then copy all of the code to the other buttons (or just duplicate the sprite). Then you can make simple changes on the copies to get them to do what they are supposed to do.
- There are six buttons as follows:
 - Three may be your choice of multiplication, division, addition, or subtraction, your choice
 - Two should be functions in the **abs block** (this block has more than 10 different math functions) or the modulo function, please only use functions that you understand. I used modulo for one of mine. (Remember, $5 \% 2 = 1$, we learned this in Python.)
 - The sixth is your choice.
- The buttons say what they do as in my example and use join blocks to make things pretty. I made the buttons say what they did by writing the text as part of the button costume.
- Extra credit option: add an "a to the b power" button. This function needs a loop to calculate the result.

Call me over to see your work before you turn it in.