Counting

1. Introduction
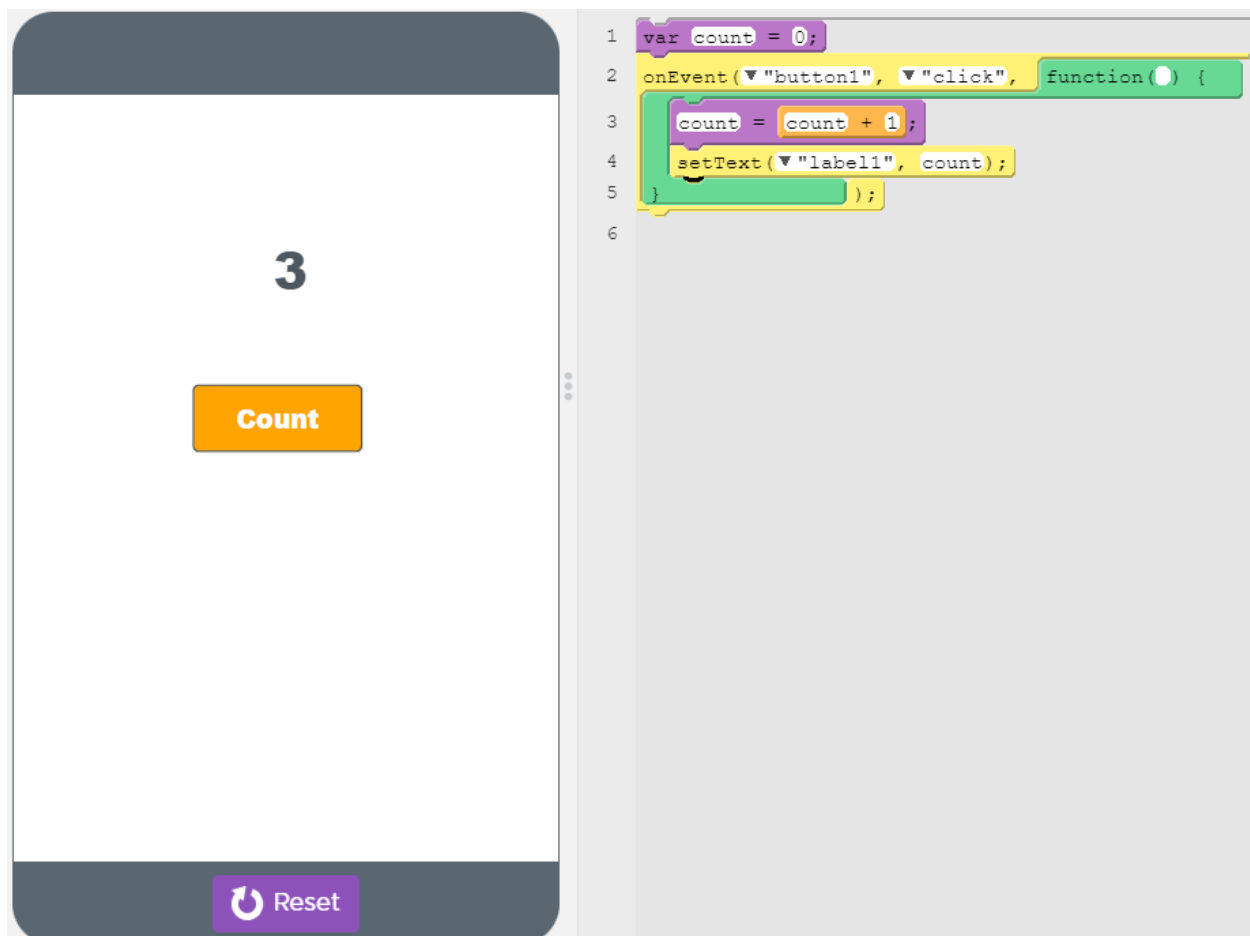
Teaching the computer to count. Three things the computer needs to know:

i)   The starting count.

ii) For each count, how to get from the current number to the next number?

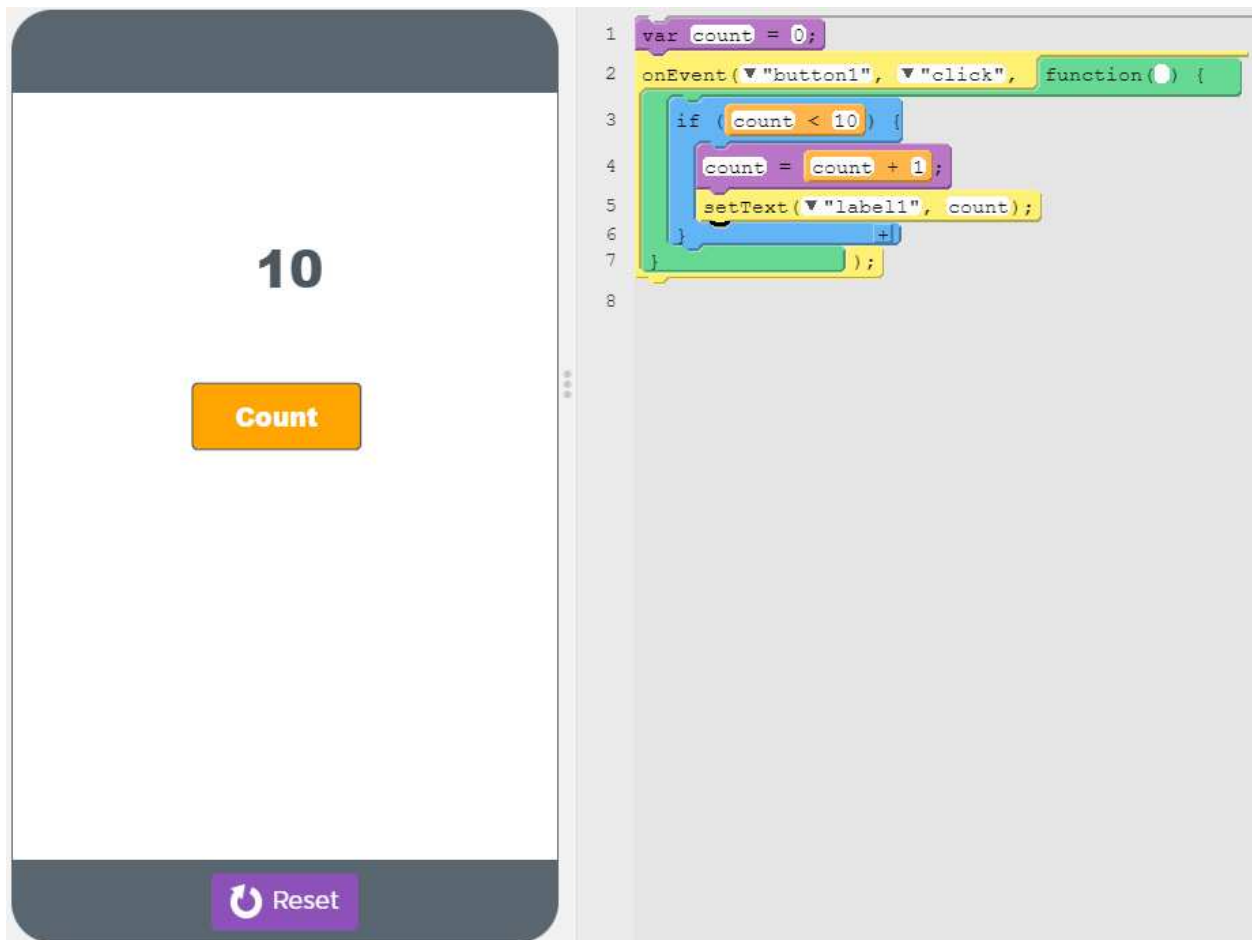iii) (optional) The ending count. When to stop.

Need to save the count in a variable. Initialize this variable with the starting count. To get to the next count, we take the current count and add a one to it. The incremented value becomes our new current count. If we want to stop the count at a certain number then we use an IF command to test whether we have reached the ending count. If we have reached the ending count then don't count anymore.

2. Code

Counting up by 1

```
1  var count = 0;
2  onEvent("button1", "click", function() {
3      count = count + 1;
4      setText("label1", count);
5  });
6
```

Counting up by 1 and stopping at 10.


```
1  var count = 0;
2  onEvent(▼"button1", ▼"click", function() {
3      if (count < 10) {
4          count = count + 1;
5          setText(▼"label1", count);
6      }
7  });
8
```

3. *Problems* (Questions with an * are more difficult)

1) Write a program to count starting from 1. The count is incremented by 1 each time a button is pressed.

2) Write a program to count starting from 23. The count is incremented by 1 each time a button is pressed.

3) Write a program to count starting from 0. The count is incremented by 5 each time a button is pressed.

4) Write a program to count backwards starting from 10. The count is decremented by 1 each time a button is pressed.

5) * Write a program to count starting from 1. The count is incremented by 1 each time a button is pressed. When the count reaches 10, it will stop counting even when the button is pressed. Hint. You need an IF command.

6) * Write a program to count backwards starting from 10. The count is decremented each time a button is pressed. When the count reaches 0, it will display the message "Blast off!"

7) * Simulate the roll of a die each time a button is pressed. Count how many times the number 6 appears.

8) * Simulate the roll of two dice each time a button is pressed. Count how many times a double appears.

9) ** Write a program to display two counting numbers; the first to count forward from 1 to 10 and the second to count backward from 10 down to 1. The count is changed when a button is pressed.

10) ** Write a program with two buttons labeled UP and DOWN, and a label to display the count. The count is initially set to 0. When the UP button is pressed the count will increment by 1, and when the DOWN button is pressed the count will decrement by 1.