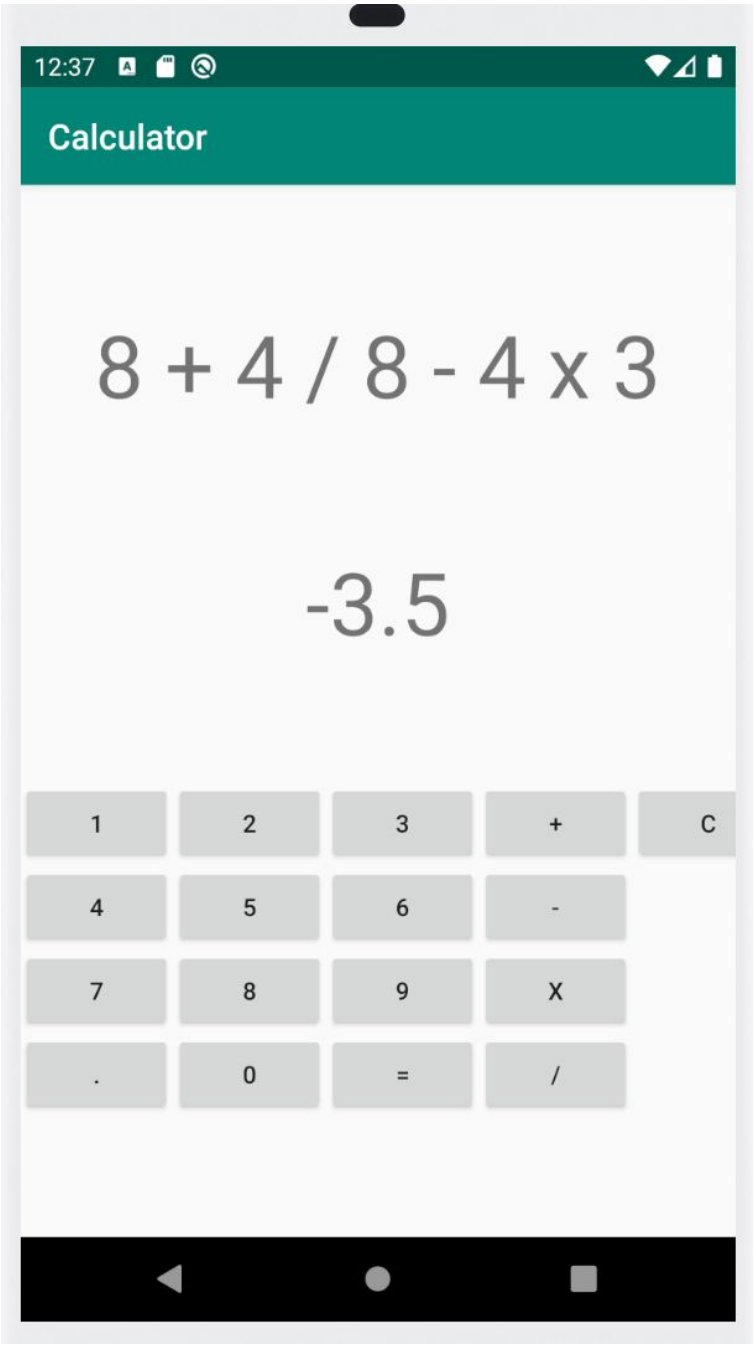
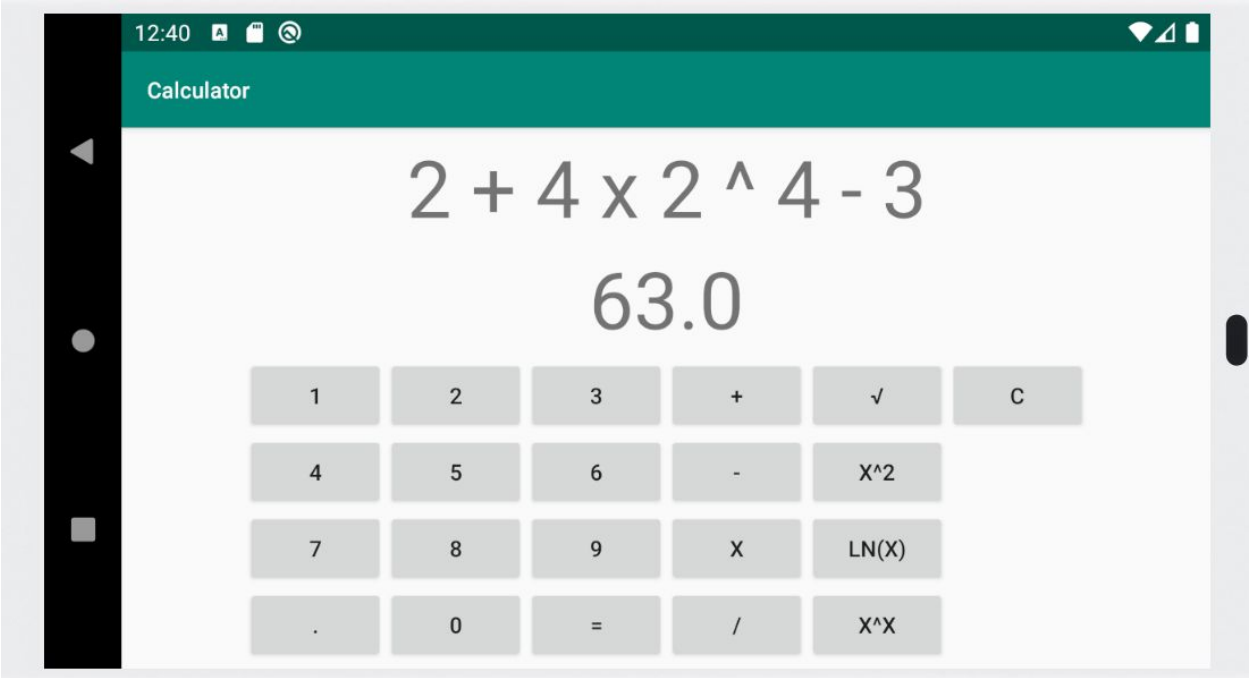
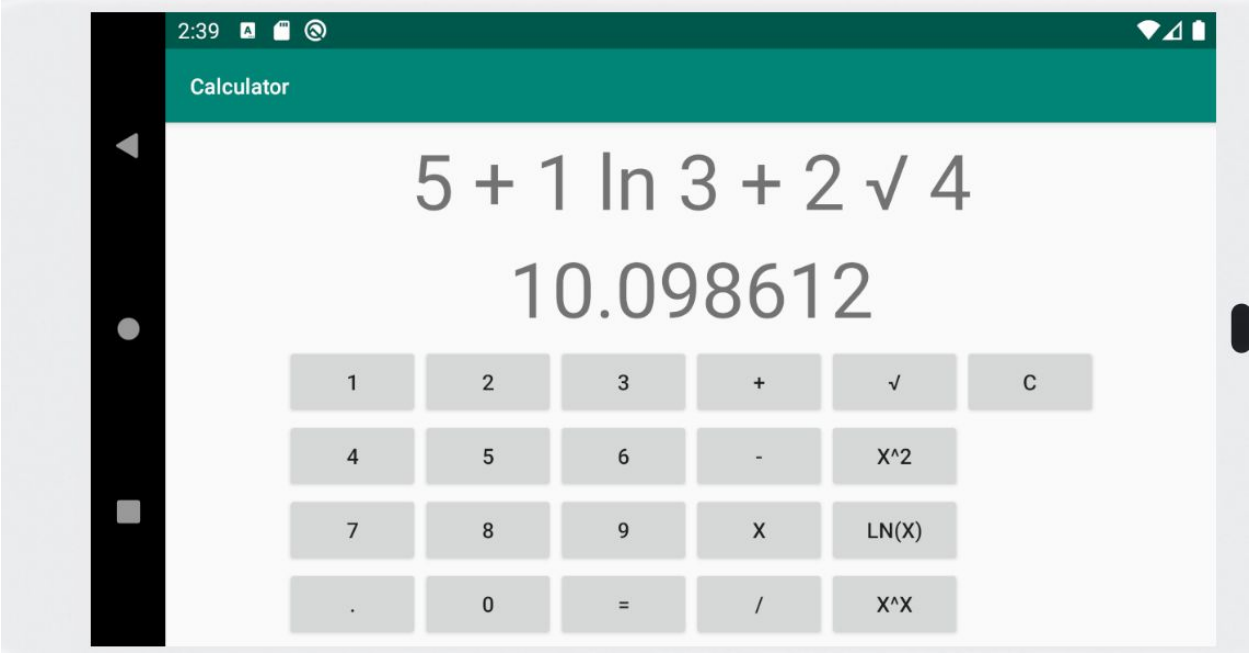
The calculator uses a constrained layout that holds two text views and a grid layout for the calculator buttons. Each number button calls a function that adds the number to a string. When you press an operation button it takes what's in that string into a list of strings. It also adds the operator into another list of strings. Then the input string that was holding the number is cleared. When the user presses the equals button it adds the final number in the string list and then does the calculation. The calculation checks to see if the operation list contains each operation in order of PEMDAS and then takes the string in the number list at the same index and the next index that matches the operation list and does that operation to them. It removes the operation from the operation list and both numbers from the numbers list and adds in the new number into the number list at the same index. Once it does this operator calculation it will reset the iterator to zero so it traverses through the list again looking for the operator. Once one operator is no longer in the string it moves to the next operator. Pressing the clear button empties the lists and sets all iterators to 0 as well as clearing the text views.

With the scientific operations like ln() and squared I had to check to see if it is the only operation in the list so it doesn't try and grab two numbers. I also needed to add a multiplication operator if input a number a ln() and then another number so that it only does the ln() to the number in front of it and multiplies the number behind it.


12:37
Calculator
8 + 4 / 8 - 4 x 3
-3.5
1
2
3
+
C
4
5
6
-
7
8
9
X
.
0
=
/


12:40
Calculator
2 + 4 x 2 ^ 4 - 3
63.0
1
2
3
+
√
C
4
5
6
-
X^2
7
8
9
X
LN(X)
.
0
=
/
X^X


2:39
Calculator
5 + 1 ln 3 + 2 √ 4
10.098612
1
2
3
+
√
C
4
5
6
-
X^2
7
8
9
X
LN(X)
.
0
=
/
X^X