Journal Report 10
11/18/19-11/21/19
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Daily Log

Monday November 18

Researched how to change button's color and discovered that activebackground would enable color change whenever mouse hovered over the button.

Tuesday November 19

Added more buttons such as backspace, parentheses, and decimal point to calculator GUI. Checked previous journal sample outputs to ensure that GUI correctly outputs answer based on button clicks. With import sympy present, log returns error on some inputs. Had "import math" before "from math import *" and instead of "log(", had "math.log(" to resolve issue.

Thursday November 21

Added graph button to calculator GUI so that graphing basic functions works. For example, text box would show "graph(x**2)", press "=", and then graph pops up. While implementing integrate to GUI, realized that previously written integration function had a bug, so fixed it. Also added definite integral, derivative, and intersection to GUI. After creating GUI with 40 buttons, decided to work on converting from text to answer on GUI using a text file as an intermediate. Program able to read words from text file, convert to an expression displayed on the screen, and after pushing equals button, answer appears on the screen

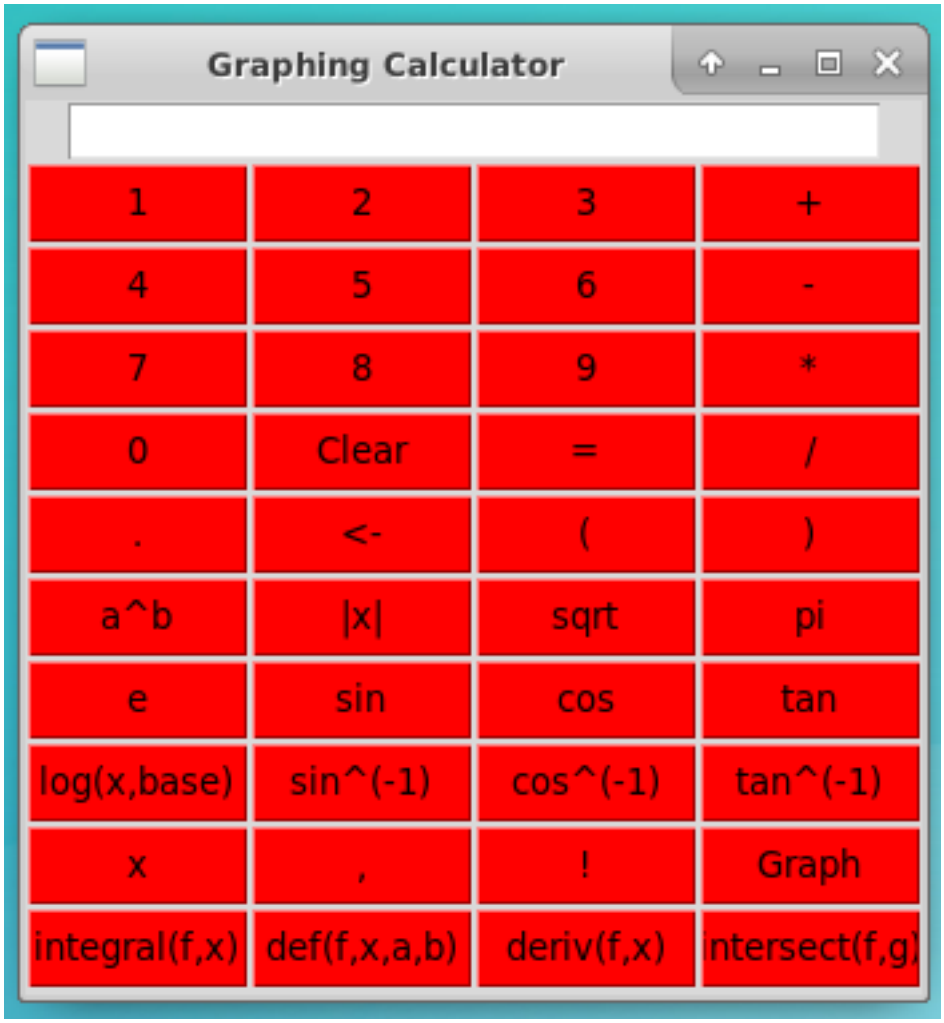
Timeline

Date	Goal	Met
Oct 28	Add more functionalities to program	Program can generate random numbers n times, convert most decimals to fractions, evaluate functions, graph many equations, find intersection of two functions, and find a zero of a function.
Nov 11	Begin creating GUI for calculator	Researched layout for calculator buttons and began creating dictionary of buttons to enable changing their colors.
Nov 18	Add all calculator-recognized buttons to a dictionary and correctly format on calculator.	Calculator contains 40 of the most essential buttons and is formatted nicely.
Nov 25	Effectively take user input of word expression and convert to correct answer in words on the GUI	
Winter goal	Create GUI for calculator and if possible, use SpeechRecognition to ensure program will recognize user's voice and correctly transcribe sound to text.	Except in combination with each other, the 40 buttons on the GUI work as intended.

Reflection

My calculator GUI is like the old colorless TI-84s. For instance, when you integrate, the special symbol integral symbol doesn't pop up on the screen; you need to follow the integrate(f,x) format. Due to the large number of possible functions, I plan to create a "special button" for functions such as integrals, derivatives, and factorials. When you press this button, a list of these functions will pop up, and you will have the option to select which one you intend to use. Unfortunately, the graph function is incompatible with math library functions. Next week, I will look into this problem and try to resolve it so that I can graph trignometric and square root functions.

Screenshot of current calculator gui:


Graphing Calculator
1
2
3
+
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6
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7
8
9
*
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Clear
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a^b
|x|
sqrt
pi
e
sin
cos
tan
log(x,base)
sin^(-1)
cos^(-1)
tan^(-1)
x
,
!
Graph
integral(f,x)
def(f,x,a,b)
deriv(f,x)
ntersect(f,g)