ETHIOPIAN INSTITUTE OF ARCHITECTURE, BUILDING CONSTRUCTION AND CITY DEVELOPMENT, EiABC

MID EXAM: COMPUTER PROGRAMMING (COTM 5284)

September 13, 2021

Create graphics user interface (GUI), prepare .exe and .py files:

After you complete the tasks, show your work to your instructor and submit the .py and the .exe files of each task to your instructor.

Students can use their own choices of fg (foreground colors), bg (back ground colors), fonts and font sizes as long as the interface is readable.

Files should be named: full name of student_name of task. Example: abebekebede_quadratic.exe, abebekebede_quadratic.py, abebekebede_trapezium.exe and abebekebede_trapezium.py

1. By making use of the following information create a graphics user interface (GUI) that has (1) input boxes and labels for a,b,c, (2) that has an evaluate button and (3) output labels for x1 and x2.

For the quadratic equation $y=ax^2 + bx + c$, the solution of x becomes $x = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$. In such a way if $(b^2-4ac) \geq 0$ the value of x1 becomes $x1 = \frac{-b+\sqrt{b^2-4ac}}{2a}$ and the value of x2 becomes $x2 = \frac{-b-\sqrt{b^2-4ac}}{2a}$. If $(b^2-4ac)<0$ the values of both x1 and x2 will be "null".

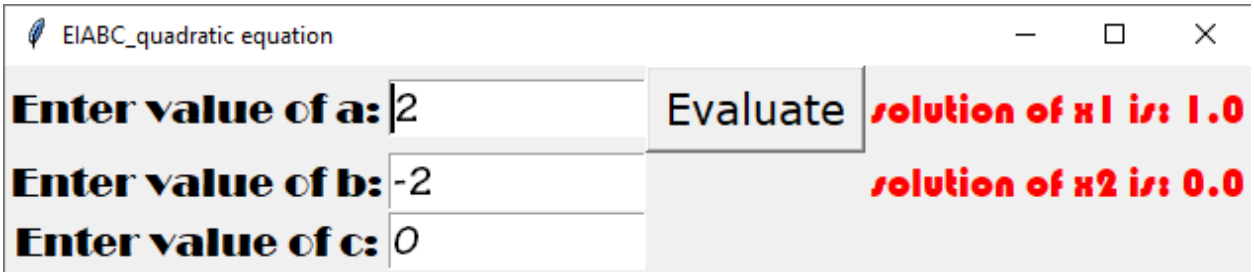

Figure 1; GUI Quadratic equation

2. Create a graphics user interface (GUI) to compute area of a trapezium A= (1/2) (b1+b2) h. the GUI should have (1) input boxes and labels for b1, b2 and h, (2) evaluate button and (3) output label for Area, A.

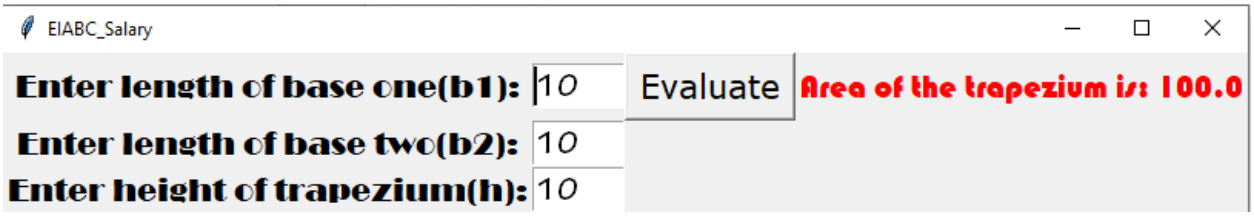

Figure 2; GUI area of trapezium