LEBANESE AMERICAN UNIVERSITY
DEPARTMENT OF COMPUTER SCIENCE AND MATHEMATICS

Spring 2021

CSC/BIF 243

Introduction to Object Oriented Programming

Course Instructor: Joe Khalife

LAB01 Report

Quadratic equation Solver

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1- A list of errors that you encountered before being able to run the program:

Fortunately, no errors have been encountered before running the program, syntax errors were thrown while typing the code but fixed as they show up.

2- The table showing the expected results and the observed results:

			Expected	Expected Results	Observed Results
a	b	c	delta	Roots	
-1	1	-1	-3	No roots	This equation has no roots
1	2	1	0	x1 = x2 =-1	Double Roots: X1 = X2 = -1.0
2	-10	12	4	x1 = 2, x2 = 3	Two Roots: X = 3.0, X2 = 2.0
0	3	-2	9	Not a quadratic equation But we can solve X = 1.5	ZeroDivisionError: float division by zero
1	-6	9	0	x1 = x2 = 3	Double Roots: X1 = X2 = 3.0
1	4	3	4	x1 = -3, x2 = -1	Two Roots: X =-1.0, X2=-3.0
3	0	0	0	x1 = x2 = 0	Double Roots: X1 = X2 = 0.0

3- Analysis and observations when comparing the expected and the observed results:

As the table in part 2 shows, expected results and the observed results are merely identical, the only difference is in case 4 (**a = 0, b = 3, c = -2**)

In the expected result we were able to calculate the root of the equation even though it is not a quadratic equation however in the observed results we can see that the program throwed a ZeroDivisionError because we were dividing by zero (a = 0) hence the program only expected input to be corelated with the general quadratic equation formula (ax^2+bx+c).

4- Write your Recommendations to improve the program and do a design (flowchart or pseudocode, not a program), that includes your recommendations:

Recommendations to improve the program are included in the below flowchart (*Next page*) representing the ***improved design*** of the Quadratic Equation Solver.

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