

Lab Goal: This lab was designed for you to practice using an ArrayList.

Lab Description: Take an expression and solve it. For instance, if you were given $3 + 4 * 5$, you should come to the answer of 23. This would require you to handle the multiplication before the addition.

Hint: Place each piece of the expression in a different position in the ArrayList. Search the array list for the operators that you will need to handle first. Access the operator and the first operand (before) and the second operand (after). Remove the first operand and the operator. Replace the 2nd operand with your result. Repeat this process with the next set of operators.

File Needed: ExpressionSolver.java
ExpressionSolverRunner.java

Sample Data:

$3 + 5$

$3 * 5$

$3 - 5$

$3 / 5$

$5 / 5 * 2 + 8 / 2 + 5$

$5 * 5 + 2 / 2 - 8 + 5 * 5 - 2$

Sample Output:

$3 + 5 = 8$

$3 * 5 = 15$

$3 - 5 = -2$

$3 / 5 = 0$

$5 / 5 * 2 + 8 / 2 + 5 = 11$

$5 * 5 + 2 / 2 - 8 + 5 * 5 - 2 = 41$

Things To Turn In: 1.Expression Solver.java

In Order to Get Full Credit:

1. Go through the string and place each character in an ArrayList
2. Search through the ArrayList looking for operators in the appropriate order
3. When an operator is found, look at the operand in front and behind it. Calculate the result.
4. Remove two of the three values and replace the third one with the result.
5. Continue until your list has one item in it.

Lab 15b: ArrayList - Expression Solver
Possible Points: 50