import java.util.Stack;

public class Main {

public static int eval(String exp) {

Stack<Integer> opd = new Stack<>();

Stack<Character> opr = new Stack<>();

int i = 0;

while (i < exp.length()) {

char ch = exp.charAt(i);

if (Character.isWhitespace(ch)) {

i++;

continue;

}

if (Character.isDigit(ch)) {

int num = 0;

while (i < exp.length() && Character.isDigit(exp.charAt(i))) {

num = num \* 10 + (exp.charAt(i) - '0');

i++;

}

opd.push(num);

}

else if (isOperator(ch)) {

while (!opr.isEmpty() && precedence(ch) <= precedence(opr.peek())) {

opd.push(applyOperation(opr.pop(), opd.pop(), opd.pop()));

}

opr.push(ch);

i++;

} else {

System.out.println("Invalid character encountered: " + ch);

}

}

while (!opr.isEmpty()) {

opd.push(applyOperation(opr.pop(), opd.pop(), opd.pop()));

}

return opd.pop();

}

private static boolean isOperator(char ch) {

return ch == '+' || ch == '-' || ch == '\*' || ch == '/';

}

private static int precedence(char opr) {

switch (opr) {

case '+':

case '-':

return 1;

case '\*':

case '/':

return 2;

}

return -1;

}

private static int applyOperation(char opr, int b, int a) {

switch (opr) {

case '+':

return a + b;

case '-':

return a - b;

case '\*':

return a \* b;

case '/':

if (b == 0) {

System.out.println("0");

}

return a / b;

}

return 0;

}

public static void main(String[] args) {

String exp = "10 / 5 + 3 \* 2";

int res = eval(exp);

System.out.println("Result is: " + res);

}

}