**ТЕХНИЧЕСКИ УНИВЕРСИТЕТ - СОФИЯ**

**Курсов проект**

**по**

**ФЕЕП**

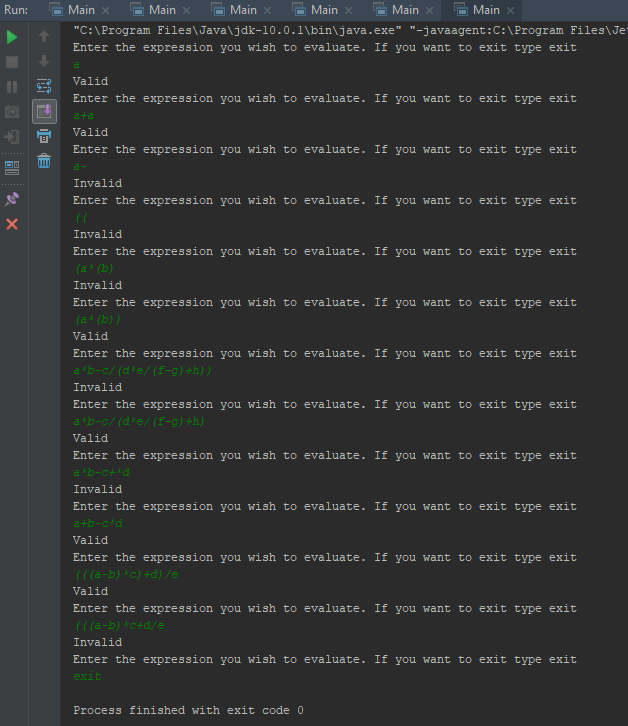
**LL(1) Parser на математически изрази**

Изготвен от:

-Денис Евгениев Павлов, група 38, фак. № 121215140

Github: https://github.com/troqta/FEEPKursova

**Код:**package FEEP;  
  
import java.util.\*;  
  
public class Main {  
  
 static final List<Character> *signs* = Arrays.*asList*('+', '-', '\*', '/');  
  
 public static void main(String[] args) {  
 Scanner in = new Scanner(System.*in*);  
 String input;  
 while (true) {  
 System.*out*.println("Enter the expression you wish to evaluate. If you want to exit type exit");  
 input = in.nextLine();  
  
 if (input.equals("exit")) {  
 return;  
 }  
  
 System.*out*.println(*isValidExpression2*(input) ? "Valid" : "Invalid");  
  
 //System.out.println(Pattern.matches("[a-zA-Z0-9\\+\\-\\\*/\\(\\)]\*", input) ? "Valid" : "Invalid");  
 }  
 }  
  
  
  
 public static boolean isAnOperator(char c) {  
 switch (c) {  
 case '\*':  
 case '/':  
 case '+':  
 case '-':  
 case '%':  
 return true;  
 default:  
 return false;  
 }  
 }  
 public static boolean isALetter(char c){  
 return Character.*isLetter*(c);  
 }  
  
 public static boolean isValidExpression2(String expression) {  
 // TEST 1  
 if (*isAnOperator*(expression.charAt(0)) || *isAnOperator*(expression.charAt(expression.length() - 1))) {  
 return false;  
 }  
  
 int openParenthCount = 0;  
 boolean lastWasOp = false;  
 boolean lastWasOpen = false;  
  
 for (char c : expression.toCharArray()) {  
 if(c == ' ') continue;  
 if (c == '(') {  
 openParenthCount++;  
 lastWasOpen = true;  
 continue;  
 } else if (c == ')') {  
 if (openParenthCount <= 0 || lastWasOp) {  
 return false;  
 }  
 openParenthCount--;  
 }else if (*isAnOperator*(c)){  
 if (lastWasOp || lastWasOpen) return false;  
 lastWasOp = true;  
 continue;  
 }else if(!*isALetter*(c)){  
 return false;  
 }  
 lastWasOp = false;  
 lastWasOpen = false;  
 }  
 if(openParenthCount != 0) return false;  
 if(lastWasOp || lastWasOpen) return false;  
 return true;  
 }  
  
  
}

**Резултат от конзолата:   
  
**