

Implementační dokumentace k projektu do IPP 2017/2018

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### **Aim of the project:**

The role of this programs was to perform a lexical and syntax analyzation continuing with interpreting program. After this lexical and syntax check program created the xml output just like midst-code. Duty of this program was to exit with specific return value, after it has found a mistake at the input.

### **The scheme of the project:**

The scheme for implementation was firstly planned after clarification of the requirements. There was choosed, what's the best way to optimalizate program and to be easy for modification. The result is shown in the next page like finite-state automata of parser and interpreter.

### **Process of implementation:**

At the beginning program (parser) loads an arguments from the command line, evaluates them and loads the input source from standard input. It reads line by line and sends data to specific function to make lexical and syntax check. Program during that creates xml instructions ready to write into standard output. Every line should contains one keyword and the beginning. If there's keyword at the other place script evaluates it just like mistake. The next word are sends to the next function to sort them by main instruction.

Every instruction has got, how many argument can contains. That's solved by the switch, which is sort them. When argument is variable with range, it's automatically written into the global array. Script contains three global arrays for variables sorted by their range. That's used before the same variable is at the another line to check, if exists. The next program (interpreter) loads xml input generated by parser, call function to sort xml instructions and create object of instructions containing arguments. That's continue to functions (switch) interpreting every instruction.

### **Result of the project:**

Final result of programs is to send result to standard output. That provides data loaded from the input checked by functions realizing lexical and syntax analyzation, continuing into the interpreting sections.

Power of xml output is in a hierarchically structure containing elements and argument. Every instruction, arguments and their values are organized into the elements and argument to be easily read by interpret. For interpret that're data checked by syntax and lexical analyzation intended for realization.

