

SUPRALGOL²⁰¹⁶

Introduction to language theory and compiling

Project – Part 3

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No proper program contains an indication which as an operator-applied occurrence identifies an operator-defining occurrence which as an indication-applied occurrence identifies an indication-defining occurrence different from the one identified by the given indication as an indication-applied occurrence.

ALGOL 68 Report

For this third and last part of the project, we ask you to augment the recursive-descent LL(1) parser you have written during the first part to let it *generate code* that corresponds to the semantics of the SUPRALGOL²⁰¹⁶ program that is being compiled. The output code must be LLVM intermediary language, as you have done during practical number 9. The LLVM code generated by your compiler must be accepted by the `llvm-as` tool, so that we can convert it to machine code.

When generating the code for expressions, pay extra attention to the associativity and priority of the operators: the modification of the grammar you have done during part 2 should help you in that respect.

You must hand in:

- A PDF report containing the necessary justifications, choices and hypothesis;
- The source code of your compiler;
- The SUPRALGOL²⁰¹⁶ example files you have used to test your analyser;
- All required files to evaluate your work.

You must structure your files in four folders:

- `doc` contains the JAVADOC and the PDF report;
- `test` contains all your example files;
- `dist` contains an executable JAR **that must be called `part3.jar`**;
- `more` contains all other files.

Your implementation must contain:

1. your scanner (from the first part of the project);
2. your parser;
3. an executable public class `Main` that reads the file given as argument and writes on the standard output stream the LLVM intermediary code.

The command for running your executable must be:

```
java -jar part3.jar inputFile
```

You will compress your folder (in the *zip* format—no *rar* or other format), **which is called:**

```
Part3_Surname1_Surname2.zip
```

where Surname1 and Surname2 are the (family) names of the students of the group (in alphabetical order), and you will submit it on the Université Virtuelle before **December, 17th**. A printed copy of your report only will be handed in to the Secrétariat étudiants (Mrs. Maryka Peetroons, NO8.104) for the same date. You are allowed to work in group of maximum two students.