Compiladores - First part of the Course Work

DCC-FCUP

October 2024

1 Work Groups

Groups of **two (2) students** enrolled in the **same practical class**. Exceptionally, and only if necessary, a group of three per class may be accepted. The groups are chosen in the activity available for this purpose on Moodle. Groups are already created, named $Txx_{-}Gyy$, where Txx represents the practical class (T01 to T02), and Gyy represents the group within the class (from group G01 to G15). Groups from each practical class should organize themselves into these groups. Registration is mandatory for all students taking the assignment.

2 Deadlines

The work must be submitted by **20:00 of the 10th of November**, 2024, in the activity to be made available for this purpose on Moodle, with demonstrations carried out in the practical class of the week of November 11th, 2024.

3 Submission guidelines

Each group must deliver a .zip file with the whole source code, and a .pdf file with a brief README of the project, called **README.pdf**. The submitted file must be zipped as a .zip file (not another archive format). The file name must be:

COMP_TP1_Txx_Gyy.zip

where Txx_Gyy is the name of the group (example: COMP_TP1_T01_G02.zip).

4 Assignment description

Implement a scanner (for the lexical analysis phase) and a parser (for the syntactic analysis phase) for a simple subset of the Kotlin programming language:

https://kotlinlang.org/docs/basic-syntax.html

The parser should return the abstract syntax tree (AST) representing the Kotlin program given as input.

The subset of Kotlin considered in this first coursework consists of one function main and the following expressions and commands:

• Expressions:

- 1. arithmetic expressions;
- 2. boolean expressions;
- 3. the print function;
- 4. the readln fuction;

• Commands:

- 1. variable declarations and assignments;
- conditional expressions (if then else);
- 3. while loops;