The .Beer Language for Arduino

GROUP SW406F15

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Design, definition and implementation of programming languages

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Synopsis:

The goal for this project is to design and implement a language for the Arduino, which is targeted for students and programming beginners. The project group had varying experience with Arduino, hence having different ideas about what features the new language should provide. These were analysed and evaluated by means of some language criteria. This analysis laid the foundation of the .Beer language.

This report describes the process from ideas and theory into the final language, over design, implementation and finally testing of the language.

The compiler has been developed using ANTLR to generate scanner and parser. The compiler is made by implementing multiple listeners and a walker to traverse the abstract syntax tree multiple times.

The .Beer language simplifies some complicated operations when working with data and pins on the Arduino. The details, that complicates these operations, are handled by the compiler.

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