
HCL Compiled Language



DESIGN AND IMPLEMENTATION OF A
PROGRAMMING LANGUAGE

AALBORG UNIVERSITY

Group SW407F18

Title:

Software 4: "HCL Compiled Language"

Group SW407F18

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Semester:

4

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Developing Applications - from users
to Data, Algorithms and Tests - and
back again

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15

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STUDENT REPORT

Abstract:

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Preface

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Terms and abbreviations used in the report:

WW : Whole Word

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Introduction

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In recent years, technology and programming have become a more widespread topic within the danish school system. More students are being introduced to programming and programming languages during their duration at the danish gymnasiums. With this introduction students might amass an interest or gain a motivation for studying programming in their future education.

As programming languages are ever evolving and new languages are constantly designed it proves relevant that students, who might be interested in studying programming, are introduced to the field in a way that teaches them the fundamentals of programming.

One of the most common tools for learning programming and electrical engineering in danish gymnasiums is the Arduino development board. The Arduino platform is consistent of its own dedicated IDE and language. The Arduino programming language is based on C/C++ and designed to both be easy to use, as well as being more hardware-oriented (<https://www.arduino.cc/en/Main/FAQtoc2>). The Arduino platform maintains its simplicity by oftentimes shielding away a lot of complexity by ways that are non-present in most programming languages. Although this is an advantage for simplicity, it might halter the student when learning other programming languages.

This project aims to create a new language for the Arduino platform that promotes simplicity and strives to teach student the fundamentals of programming.

From this the following initial problem statement is drafted:

How can a programming language for Arduino be optimized for learning without losing the functionality of high-level languages

1.1 Preliminary interviews with the client

Analysis 2

Theory 3

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5.1 Discussion

5.2 Conclusion

5.3 Future work

Bibliography

Part I

Appendix