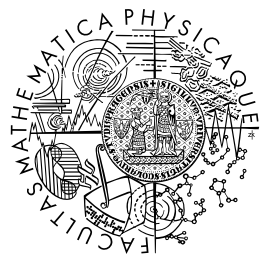

FACULTY
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High Level Assembler Plugin

Detailed Specification

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Contents

Introduction

Related Work

1. IBM High Level Assembler Language overview

In general, high-level assemblers provide for their assembly languages features that are commonly found in high-level programming languages. Hence, in addition to ordinary machine instructions they also contain control statements similar to *if, while, for* as well as custom callable macros.

IBM High Level Assembler (HLASM) comforts this definition and adds other features which will be described in this chapter.

1.1 Syntax

HLASM has somehow complicated syntax.

1.1.1 Statement

HLASM program is sequence of *statements*. Statement consists of four fields. Those are:

- **Name field** — Serves as place for named constants that are to be used in code.
- **Operation field** — Instruction that is executed.
- **Operands field** — Field for instruction operands separated by comma.
- **Remark field** — Serves as line commentary.

```
 label    instruction     operands             remarks
.NOMOV        AGO      (&WH).L1,.L2,.L3     SEQUENTIAL BRANCH
```

1.1.2 Continuation

One line in HLASM source code can contain only up to 80 characters. However, sometimes statement is too long to be written in one line. Therefore, special handling is introduced called **continuation**.

For indication that statement continues on the next line a character other than space is placed in **continuation column** (default is 72). Then the remainder of the statement must start on **continue column** (default is 15) to finally create a well formed statement (see 1.1).

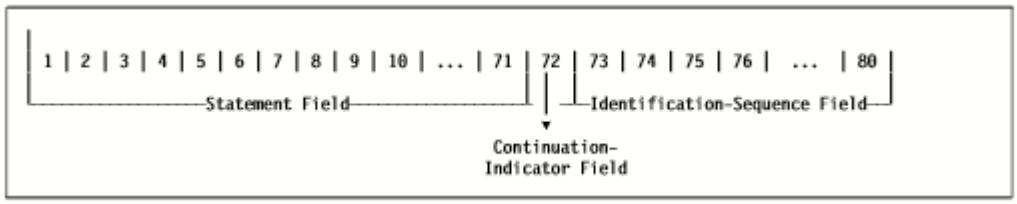

Figure 1.1: Description of line columns.

1.2 Semantics

1.2.1 Conditional assembly

1.2.2 Ordinary assembly

2. Features

-cela tato sekcia uz je popisana niekde na CA wiki, mozno dobry zaklad

2.1 Language features

-zoznam veci jazyka co podporujeme

2.2 LSP features

-working plugin for vs code

- Go to definition for all symbols, macro definitions and copy members.
- Find all references
- Completion for instructions, defined symbols and macros
- Highlighting
- Hover

-non functional requirement - api kniznice??

3. Architecture

-JNI? asi by som nespominal
mirko:
a je fajn rozepsat vsechny API a takovy veci co sou po ceste

3.1 Parser library

3.1.1 Workspace manager

3.1.2 Analyzer

Parser

Processing

Checking

3.1.3 Debugger

3.2 Language server

3.3 VS code client

4. Technologies

mirko: soupis konkretnich technologii a verzi

5. Project execution

mirko:
milestony
gantt
prirazeni lidi k projektum
udelejte si cas na psani dokumentace
je fajn mit contingency plan, co delat kdyz se to dojebe nebo ltery ficury jsou jak prioritni

Conclusion

Future work