University Institute of Engineering

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Bachelor of Engineering

Subject Name: System Programming

Subject Code: CST-315

Compilers

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Chapter-1.2
Macro

- Nested Macro Calls

- Advanced Macro Facilities

- Design Of a Macro Preprocessor

Nested Macro Calls

Nested Macro Definitions

A macro body may also contain further macro definitions. However, these nested macro definitions aren't valid until the enclosing macro has been expanded! That means, the enclosing macro must have been called, before the nested macros can be called.

Example 1:

- A macro, which can be used to define macros with arbitrary names, may look as follows:

DEFINE MACRO MACNAME

MACNAME MACRO

DB 'I am the macro &MACNAME.'

  ENDM

ENDM

Nested Macro Calls

In order not to overload the example with "knowhow", the nested macro only introduces itself kindly with a suitable character string in ROM.

The call DEFINE Obiwan

would define the macro

Obiwan MACRO

DB 'I am the macro Obiwan.'

ENDM

and the call DEFINE Skywalker would define the following macro:

Skywalker MACRO

DB 'I am the macro Skywalker.'

 ENDM

Nested Macro Calls

Example 2:

- A macro is to insert a variable number of NOPs into the program. For this, a macro with a nested REPT block seems to be best-suited: REPEAT MACRO NOPS

REPT NOPS

NOP

ENDM

ENDM

The macro call REPEAT 4 results in something like that:

- Line I Addr Code Source 9+ 1 N 0004 REPT 4

- 10+ 1 NOP

- 11+ 1 ENDM

- 12+ 2 0000 00 NOP

- 13+ 2 0001 00 NOP

- 14+ 2 0002 00 NOP

- 15+ 2 0003 00 NOP

References

- John J Donovan Systems Programming Ebook Wordpress (pdflife.one)

- [PDF] Systems Programming and Operating Systems by Dhamdhere - Free Download PDF   (dlscrib.com)

THANK YOU