

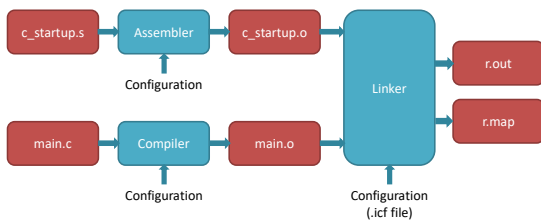
Integrated Development Environment (IDE)

Prof. Hugo Vieira Neto
2020/1

Compilation/Linking Process

- Editor
- Compiler
 - Translates high-level language (C or C++) to object-code
- Assembler
 - Translates Assembly language to object-code
- Linker
 - Assigns addresses to the object-code according to the memory map of the device, generating executable code
- Debugger

Compilation/Linking Process (IAR)



Compiler Configuration

- Preprocessor
 - Additional include directories (header files)
 - Defined symbols (global)
- Optimizations
 - Size vs Speed
- Code
 - Stack protection

Linker Configuration

- Configuration (.icf file)
 - Interrupt vector table start
 - ROM and RAM memory regions
 - Sizes for CSTACK and HEAP
- List
 - Generate linker map file

Memory Map

- Labels for each memory section (IAR):
 - .text → code
 - .rodata → constants
 - .data → global variables with specific values
 - .bss → global variables with no specific values (set to zero, according to C language standard)
 - .noinit → non initialized global variables
 - CSTACK → local variables, function parameters
 - HEAP → dynamic allocation (malloc/free)

