

Report about lab1

lab1: create a BareMetal software to send
“learn-in-depth: <Khaled_Farg>” using UART.

1-Sections of app.o:

```
bell@DESKTOP-MIAQ0V4 MINGW64 /d/Courses/Embedded KEROLES/TERM_1/2-Embedded C_Unit
t 3/unit 3_laps/lap_1/lap1-1
$ arm-none-eabi-objdump.exe -h app.o
app.o:          file format elf32-littlearm

Sections:
Idx Name              Size      VMA           LMA           File off  Algn
 0 .text               00000018  00000000  00000000  00000034  2**2
 1 .data               00000064  00000000  00000000  0000004c  2**2
 2 .bss                00000000  00000000  00000000  000000b0  2**0
 3 .rodata             00000064  00000000  00000000  000000b0  2**2
 4 .comment            00000012  00000000  00000000  00000114  2**0
 5 .ARM.attributes     00000032  00000000  00000000  00000126  2**0
CONTENTS, READONLY
```

2-Sections of uart.o:

```
bell@DESKTOP-MIAQ0V4 MINGW64 /d/Courses/Embedded KEROLES/TERM_1/2-Embedded C_Unit
t 3/unit 3_laps/lap_1/lap1-1
$ arm-none-eabi-objdump.exe -h uart.o
uart.o:          file format elf32-littlearm

Sections:
Idx Name              Size      VMA           LMA           File off  Algn
 0 .text               00000058  00000000  00000000  00000034  2**2
 1 .data               00000000  00000000  00000000  0000008c  2**0
 2 .bss                00000000  00000000  00000000  0000008c  2**0
 3 .comment            00000045  00000000  00000000  0000008c  2**0
 4 .ARM.attributes     0000002c  00000000  00000000  000000d1  2**0
CONTENTS, READONLY
```

3-Sections of startup.o:

```
bell@DESKTOP-MIAQ0V4 MINGW64 /d/Courses/Embedded KEROLES/TERM_1/2-Embedded C_Unit
t 3/unit 3_laps/lap_1/lap1-1
$ arm-none-eabi-objdump.exe -h startup.o
startup.o:       file format elf32-littlearm

Sections:
Idx Name              Size      VMA           LMA           File off  Algn
 0 .text               00000010  00000000  00000000  00000034  2**2
 1 .data               00000000  00000000  00000000  00000044  2**0
 2 .bss                00000000  00000000  00000000  00000044  2**0
 3 .ARM.attributes     00000022  00000000  00000000  00000044  2**0
CONTENTS, READONLY
```

4-Sections of learn-in-depth.elf:

```
bell@DESKTOP-MIAQ0V4 MINGW64 /d/Courses/Embedded KEROLES/TERM_1/2-Embedded C_Unit
t 3/unit 3_laps/lap_1/lap1-1
$ arm-none-eabi-objdump.exe -h learn_in_depth.elf
learn_in_depth.elf:  file format elf32-littlearm

Sections:
Idx Name              Size      VMA           LMA           File off  Algn
 0 .startup            00000010  00010000  00010000  00008000  2**2
 1 .data               00000064  000100e4  000100e4  000080e4  2**2
 2 .ARM.attributes     0000002e  00000000  00000000  00008148  2**0
 3 .comment            00000055  00000000  00000000  00008176  2**0
 4 .text               00000070  00010010  00010010  00008010  2**2
 5 .rodata             00000064  00010080  00010080  00008080  2**2
CONTENTS, ALLOC, LOAD, READONLY, DATA
```

5-Symbols of app.o

```
De11@DESKTOP-MIAQ0V4 MINGW64 /d/Courses/Embedded KEROLES/TERM_1/2-Embedded C_Unit 3/unit 3_laps/lap1/lap1-1
$ arm-none-eabi-nm.exe app.o
00000000 T main
00000000 D string_buffer
00000000 R string_buffer2
          U Uart_Send_String
```

6-Symbols of uart.o

```
De11@DESKTOP-MIAQ0V4 MINGW64 /d/Courses/Embedded KEROLES/TERM_1/2-Embedded C_Unit 3/unit 3_laps/lap1/lap1-1
$ arm-none-eabi-nm.exe uart.o
00000000 T Uart_Send_String
```

7-Symbols of startup.o:

```
De11@DESKTOP-MIAQ0V4 MINGW64 /d/Courses/Embedded KEROLES/TERM_1/2-Embedded C_Unit 3/unit 3_laps/lap1/lap1-1
$ arm-none-eabi-nm.exe startup.o
00000000 U main
00000000 T reset
          U stack_top
00000008 t stop
```

8-Symbols of learn-in-depth.elf:

```
De11@DESKTOP-MIAQ0V4 MINGW64 /d/Courses/Embedded KEROLES/TERM_1/2-Embedded C_Unit 3/unit 3_laps/lap1/lap1-1
$ arm-none-eabi-nm.exe learn_in_depth.elf
00010010 T main
00010000 T reset
00020148 D stack_top
00010008 t stop
000100e4 D string_buffer
00010080 R string_buffer2
00010028 T Uart_Send_String
```

9-Simulation of code on qemu:

```
De11@DESKTOP-MIAQ0V4 MINGW64 /d/Courses/Embedded KEROLES/TERM_1/2-Embedded C_Unit 3/unit 3_laps/lap1/lap1-1
$ qemu-system-arm.exe -M versatilepb -m 128M -nographic -kernel learn_in_depth.bin
learn-in-deapth: <Khaled_Farg>
```