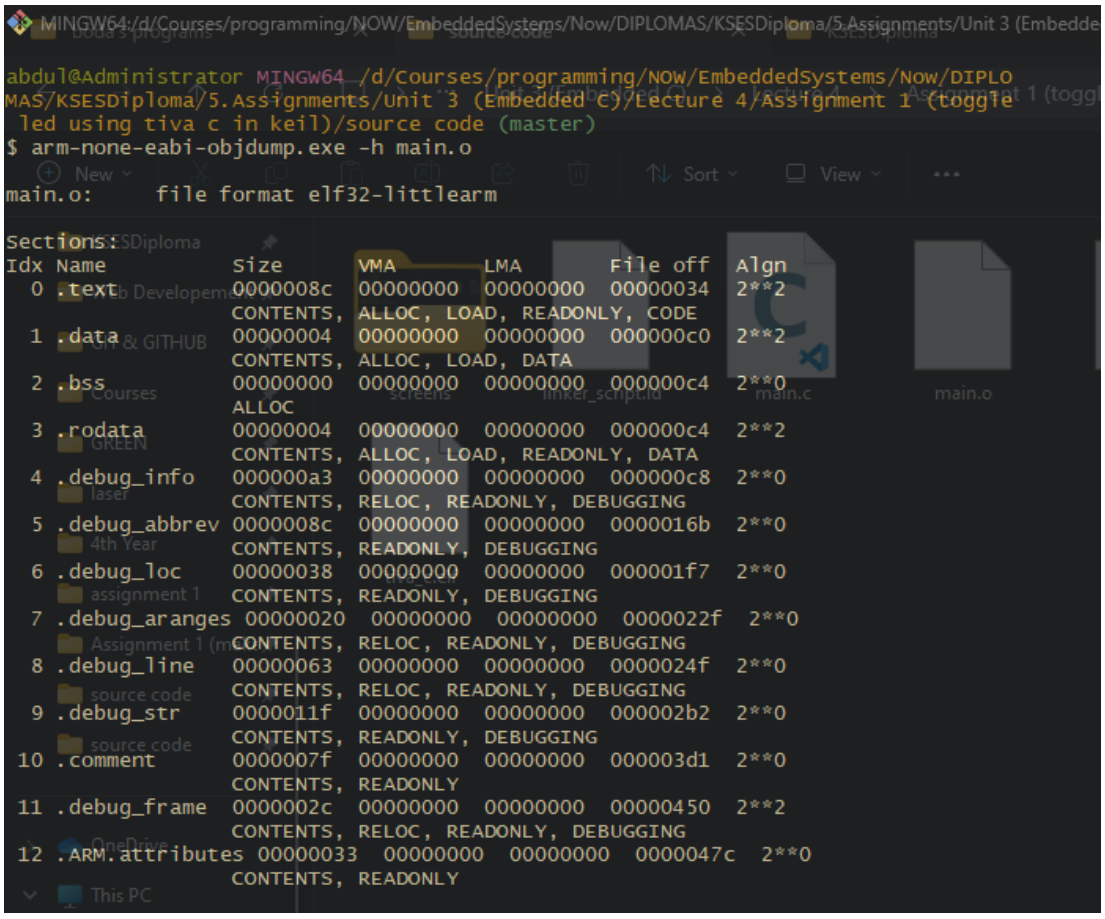
- **Main.o sections**



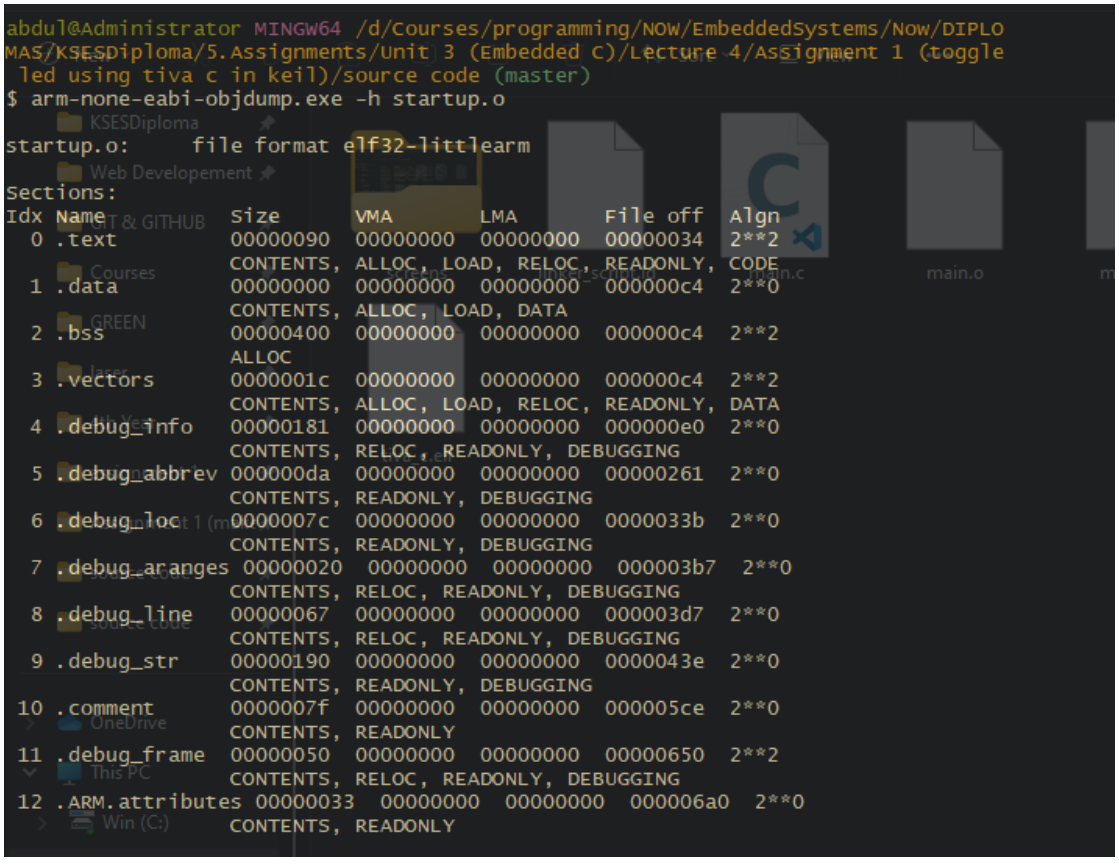
```
MINGW64:/d/Courses/programming/NOW/EmbeddedSystems/Now/DIPLOMAS/KSESDiploma/5.Assignments/Unit 3 (Embedde

abdul@Administrator MINGW64 /d/Courses/programming/NOW/EmbeddedSystems/Now/DIPLO
MAS/KSESDiploma/5.Assignments/Unit 3 (Embedded C)/Lecture 4/Assignment 1 (toggle
 led using tiva c in keil)/source code (master)
$ arm-none-eabi-objdump.exe -h main.o

main.o:     file format elf32-littlearm

Sections:
Idx Name          Size      VMA       LMA       File off  Algn
  0 .text         0000008c  00000000  00000000  00000034  2**2
                  CONTENTS, ALLOC, LOAD, READONLY, CODE
  1 .data         00000004  00000000  00000000  000000c0  2**2
                  CONTENTS, ALLOC, LOAD, DATA
  2 .bss          00000000  00000000  00000000  000000c4  2**0
                  ALLOC
  3 .rodata       00000004  00000000  00000000  000000c4  2**2
                  CONTENTS, ALLOC, LOAD, READONLY, DATA
  4 .debug_info   000000a3  00000000  00000000  000000c8  2**0
                  CONTENTS, RELOC, READONLY, DEBUGGING
  5 .debug_abbrev 0000008c  00000000  00000000  0000016b  2**0
                  CONTENTS, READONLY, DEBUGGING
  6 .debug_loc    00000038  00000000  00000000  000001f7  2**0
                  CONTENTS, READONLY, DEBUGGING
  7 .debug_aranges 00000020  00000000  00000000  0000022f  2**0
                  CONTENTS, RELOC, READONLY, DEBUGGING
  8 .debug_line   00000063  00000000  00000000  0000024f  2**0
                  CONTENTS, RELOC, READONLY, DEBUGGING
  9 .debug_str    0000011f  00000000  00000000  000002b2  2**0
                  CONTENTS, READONLY, DEBUGGING
 10 .comment      0000007f  00000000  00000000  000003d1  2**0
                  CONTENTS, READONLY
 11 .debug_frame  0000002c  00000000  00000000  00000450  2**2
                  CONTENTS, RELOC, READONLY, DEBUGGING
 12 .ARM.attributes 00000033  00000000  00000000  0000047c  2**0
                  CONTENTS, READONLY
```

- **Startup.o sections**

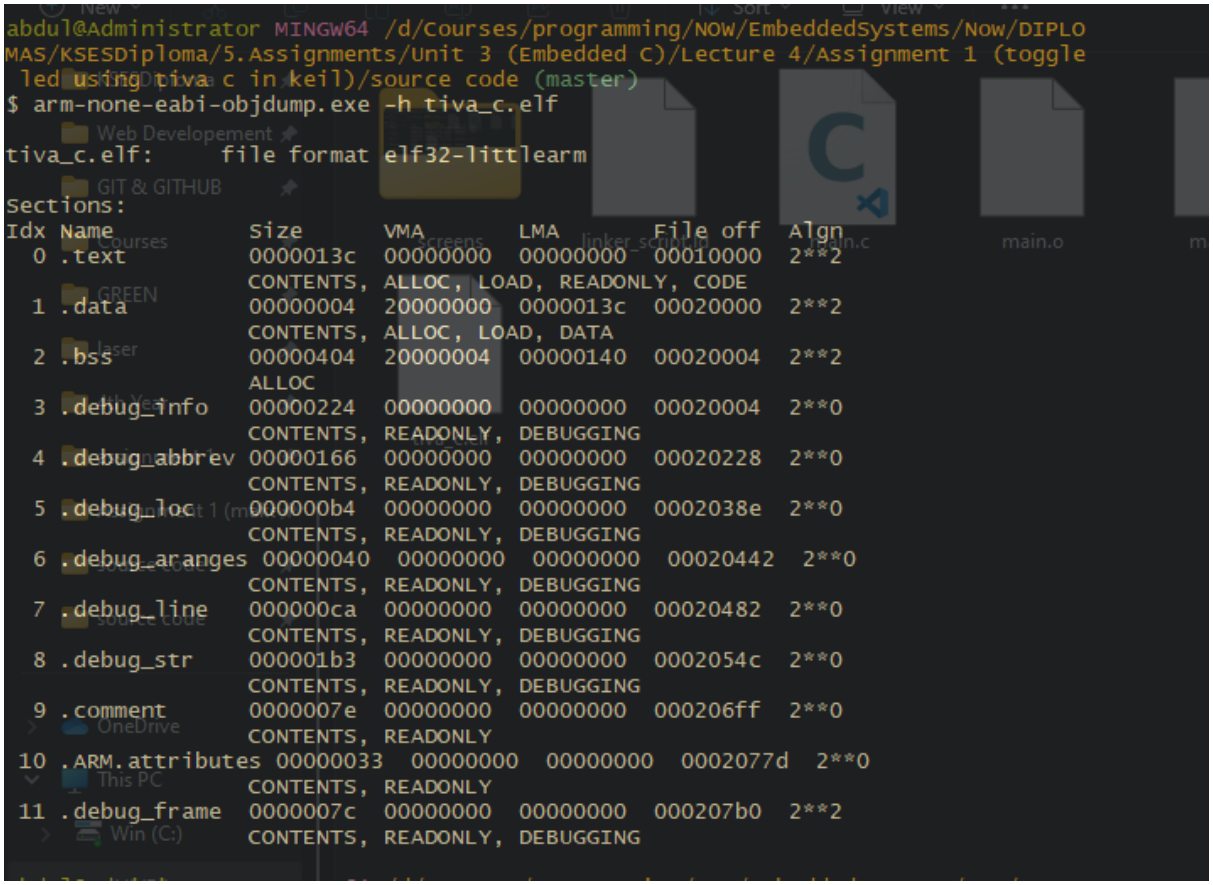


```
abdul@Administrator MINGW64 /d/Courses/programming/NOW/EmbeddedSystems/Now/DIPLO
MAS/KSESDiploma/5.Assignments/Unit 3 (Embedded C)/Lecture 4/Assignment 1 (toggle
 led using tiva c in keil)/source code (master)
$ arm-none-eabi-objdump.exe -h startup.o

startup.o:     file format elf32-littlearm

Sections:
Idx Name          Size      VMA       LMA       File off  Algn
  0 .text         00000090  00000000  00000000  00000034  2**2
                  CONTENTS, ALLOC, LOAD, RELOC, READONLY, CODE
  1 .data         00000000  00000000  00000000  000000c4  2**0
                  CONTENTS, ALLOC, LOAD, DATA
  2 .bss          00000400  00000000  00000000  000000c4  2**2
                  ALLOC
  3 .vectors      0000001c  00000000  00000000  000000c4  2**2
                  CONTENTS, ALLOC, LOAD, RELOC, READONLY, DATA
  4 .debug_info   00000181  00000000  00000000  000000e0  2**0
                  CONTENTS, RELOC, READONLY, DEBUGGING
  5 .debug_abbrev 000000da  00000000  00000000  00000261  2**0
                  CONTENTS, READONLY, DEBUGGING
  6 .debug_loc    0000007c  00000000  00000000  0000033b  2**0
                  CONTENTS, READONLY, DEBUGGING
  7 .debug_aranges 00000020  00000000  00000000  000003b7  2**0
                  CONTENTS, RELOC, READONLY, DEBUGGING
  8 .debug_line   00000067  00000000  00000000  000003d7  2**0
                  CONTENTS, RELOC, READONLY, DEBUGGING
  9 .debug_str    00000190  00000000  00000000  0000043e  2**0
                  CONTENTS, READONLY, DEBUGGING
 10 .comment      0000007f  00000000  00000000  000005ce  2**0
                  CONTENTS, READONLY
 11 .debug_frame  00000050  00000000  00000000  00000650  2**2
                  CONTENTS, RELOC, READONLY, DEBUGGING
 12 .ARM.attributes 00000033  00000000  00000000  000006a0  2**0
                  CONTENTS, READONLY
```

- Tiva_c.elf sections



```
abdul@Administrator MINGW64 /d/Courses/programming/NOW/EmbeddedSystems/Now/DIPLO
MAS/KSESDiploma/5.Assignments/Unit 3 (Embedded C)/Lecture 4/Assignment 1 (toggle
 led using tiva c in keil)/source code (master)
$ arm-none-eabi-objdump.exe -h tiva_c.elf

tiva_c.elf:     file format elf32-littlearm

Sections:
Idx Name          Size      VMA       LMA       File off  Algn
  0 .text         0000013c  00000000  00000000  00010000  2**2
                  CONTENTS, ALLOC, LOAD, READONLY, CODE
  1 .data         00000004  20000000  0000013c  00020000  2**2
                  CONTENTS, ALLOC, LOAD, DATA
  2 .bss          00000404  20000004  00000140  00020004  2**2
                  ALLOC
  3 .debug_info   00000224  00000000  00000000  00020004  2**0
                  CONTENTS, READONLY, DEBUGGING
  4 .debug_abbrev 00000166  00000000  00000000  00020228  2**0
                  CONTENTS, READONLY, DEBUGGING
  5 .debug_loc    000000b4  00000000  00000000  0002038e  2**0
                  CONTENTS, READONLY, DEBUGGING
  6 .debug_aranges 00000040  00000000  00000000  00020442  2**0
                  CONTENTS, READONLY, DEBUGGING
  7 .debug_line   000000ca  00000000  00000000  00020482  2**0
                  CONTENTS, READONLY, DEBUGGING
  8 .debug_str    000001b3  00000000  00000000  0002054c  2**0
                  CONTENTS, READONLY, DEBUGGING
  9 .comment      0000007e  00000000  00000000  000206ff  2**0
                  CONTENTS, READONLY
 10 .ARM.attributes 00000033  00000000  00000000  0002077d  2**0
                  CONTENTS, READONLY
 11 .debug_frame  0000007c  00000000  00000000  000207b0  2**2
                  CONTENTS, READONLY, DEBUGGING
```

- Main and Startup symbols

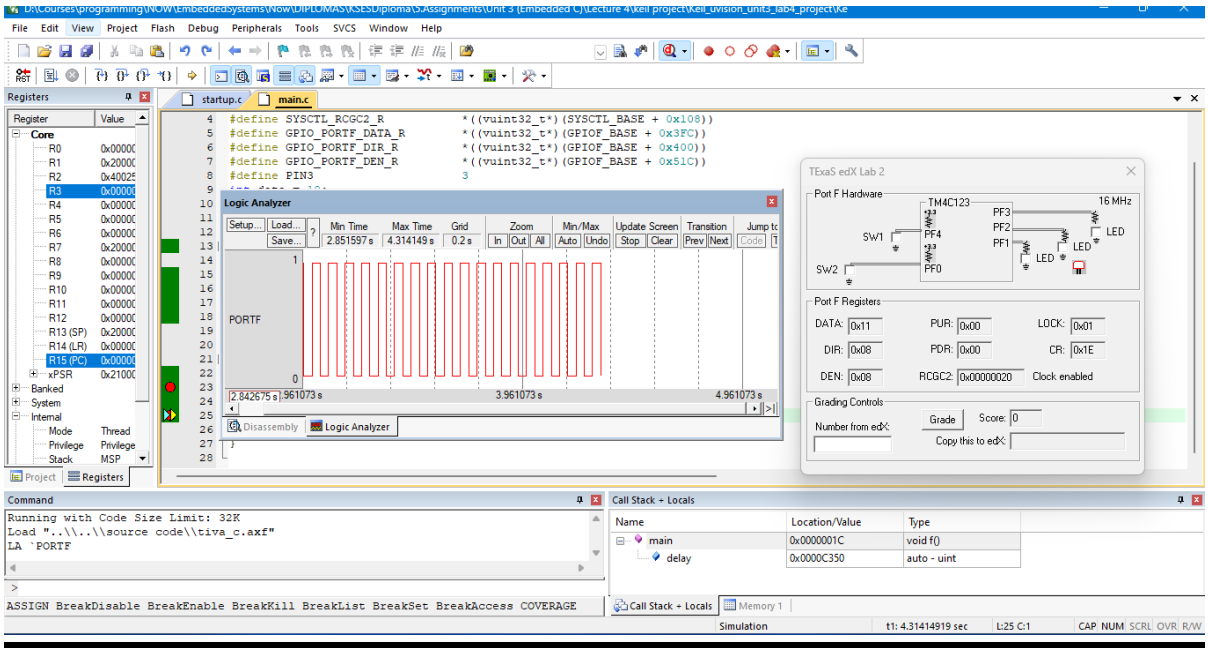
```
abdul@Administrator MINGW64 /d/Courses/programming/NOW/EmbeddedSystems/Now/DIPLO
MAS/KSESDiploma/5.Assignments/Unit 3 (Embedded C)/Lecture 4/Assignment 1 (toggle
 led using tiva c in keil)/source code (master)
$ arm-none-eabi-nm.exe main.o
00000004 C bss
00000000 D data
00000000 T main
00000000 R rodata

abdul@Administrator MINGW64 /d/Courses/programming/NOW/EmbeddedSystems/Now/DIPLO
MAS/KSESDiploma/5.Assignments/Unit 3 (Embedded C)/Lecture 4/Assignment 1 (toggle
 led using tiva c in keil)/source code (master)
$ arm-none-eabi-nm.exe startup.o
00000084 W Bus_Fault_Handler
00000084 T Default_Handler
         U Ebss
         U Edata
         U Etext
00000000 R g_p_fn_vectors
00000084 W Hard_Fault_Handler
         U main
00000084 W MM_Fault_Handler
00000084 W NMI_Handler
00000000 T Reset_Handler
         U Sbss
         U Sdata
00000000 b Stack_Pointer
00000084 W Usage_Fault_Handler
```

- Tiva_c symbols

```
abdul@Administrator MINGW64 /d/Courses/programming/NOW/EmbeddedSystems/Now/DIPLO
MAS/KSESDiploma/5.Assignments/Unit 3 (Embedded C)/Lecture 4/Assignment 1 (toggle
 led using tiva c in keil)/source code (master)
$ arm-none-eabi-nm.exe  tiva_c.elf
20000404 B bss
0000012c W Bus_Fault_Handler
20000000 D data
0000012c T Default_Handler
20000404 B Ebss
20000004 D Edata
0000013c T Etext
00000000 T g_p_fn_vectors
0000012c W Hard_Fault_Handler
0000001c T main
0000012c W MM_Fault_Handler
0000012c W NMI_Handler
000000a8 T Reset_Handler
00000138 T rodata
20000004 B Sbss
20000000 D Sdata
20000004 b Stack_Pointer
0000012c W Usage_Fault_Handler
```

- keil screenshot off



- **keil screenshot on**