

```
#include "uart.h"
#define UARTODR *((volatile unsigned int*)((unsigned int*)(0x101f1000)))
void uart_send_string(unsigned char* p_tx_string)
{
    while(*p_tx_string != '\0')
    {
        UARTODR = (unsigned int) *p_tx_string ;
        p_tx_string++;
    }
}
```

```
WIN 10@DESKTOP-BHGVA79 MINGW32 /d/Embedded/Learn_in_Depth/Embedded_Online_Diploma_Assignments/Unit3/Embedded_C_lesson2/Lab1 (master)
$ arm-none-eabi-nm.exe uart.o
00000000 T uart_send_string
```

1) uart.o symbols:

uart_send_string → text section

```
#include "uart.h"
unsigned char x[100] = "learn_in_depth: <Farha Emad>";
void main(void) {
    uart_send_string(x);
}
```

```
WIN 10@DESKTOP-BHGVA79 MINGW32 /d/Embedded/Learn_in_Depth/Embedded_Online_Diploma_Assignments/Unit3/Embedded_C_lesson2/Lab1 (master)
$ arm-none-eabi-nm.exe app.o
00000000 T main
00000000 U uart_send_string
00000000 D x
```

2) app.o symbols:

main → text section

uart_send_string → unresolved

x → data section

```
edded\Learn_in_Depth\Unit3\EmbeddedC_lesson2\Lab1\startup.s - Notepad++
Search View Encoding Language Settings Tools Macro Run Plugins Window ?
main.c fasha.c head.h main.c hrank.c app.c uart.c uarth startup.s linker_script.ld

.global reset
reset:
    ldr sp, = stack_top
    bl main
stop: b stop

MINGW32/d/Embedded/Learn_in_Depth/Embedded_Online_Diploma_Assignments...
WIN 10@DESKTOP-BHGVA79 MINGW32 /d/Embedded/Learn_in_Depth/Embedded_Online_Diploma_Assignments/Unit3/Embedded_C_lesson2/Lab1 (master)
$ arm-none-eabi-nm.exe startup.o
                 U main
00000000 T reset
                 U stack_top
00000008 t stop

WIN 10@DESKTOP-BHGVA79 MINGW32 /d/Embedded/Learn_in_Depth/Embedded_Online_Diploma_Assignments/Unit3/Embedded_C_lesson2/Lab1 (master)
$ |
```

3) startup.o symbols:

main → unresolved

reset → text section

stack_top → unresolved

stop → text section

```
MINGW32:/d/Embedded/Learn_in_Depth/Embedded_Online_Diploma_Assignments...
n_Depth/Embedded_Online_Diploma_Assignments/Unit3/
Embedded_C_lesson2/Lab1 (master)
$ arm-none-eabi-nm.exe learn_in_depth.elf
00010010 T main
00010000 T reset
000110e4 D stack_top
00010008 t stop
0001002c T uart_send_string
00010080 D x

WIN 10@DESKTOP-BHGVA79 MINGW32 /d/Embedded/Learn_i
n_Depth/Embedded_Online_Diploma_Assignments/Unit3/
Embedded_C_lesson2/Lab1 (master)
```

4) The executable file (learn_in_depth.elf) symbols:

main → text section

reset → text section

stack_top → data section

stop → text section

uart_send_string → text section

x → data section