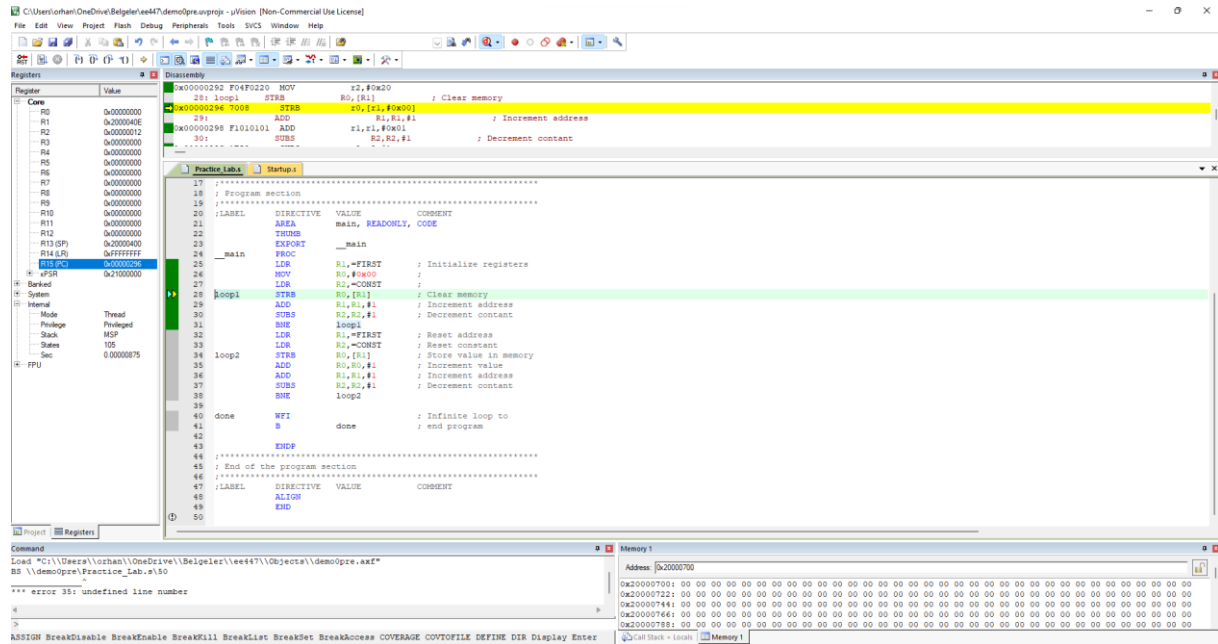


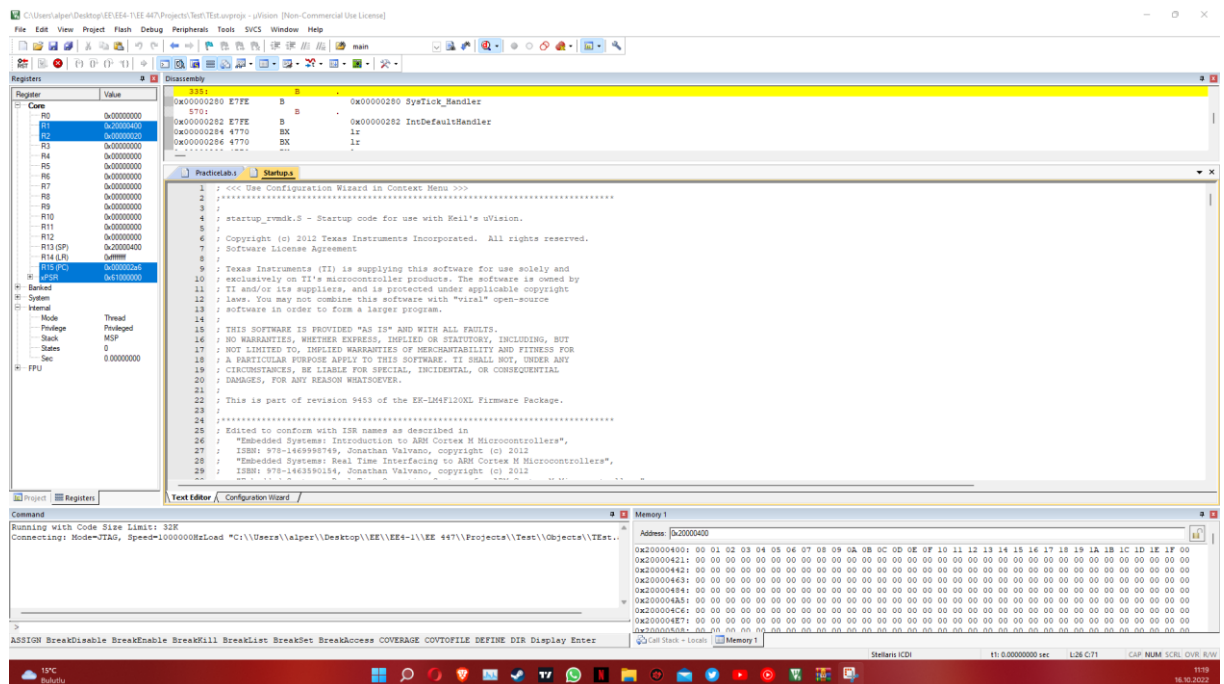
Orhan ÖZER
Alper Kutay ÖZBEK

2375533
2375467

Q1



In this question we learn and understand how to make loops in assembly language.



Orhan ÖZER
Alper Kutay ÖZBEK

2375533
2375467

Q2

```
29 ;LABEL DIRECTIVE VALUE COMMENT
30 AREA main, READONLY, CODE
31
32 EXTRN OutStr ; Reference external subroutine
33 EXPORT _main ; Make available
34
35 _main
36 start MOV R0, #0
37 LDR R1, =FIRST ; Value we need for 16 loops
38 LDR R2, =CTR1
39 LDR R3, =R1
40 STRB R0, [R1]
41 STRB R0, [R1] ; Store table
42 ADD R0, R0, #1
43 SUBS R2, R2, #1 ; Decrement Constant
44 BNE loop1 ; End of the loop
45 LDR R0, =MSG
46 OutStr ; Copy message
47 LDR R1, =FIRST
48 MOV R2, #16 ; the value we need for completing copying table
49 LDRB R0, [R1]
50 STRB R0, [R1, #OFFSET]
51 ADD R1, R1, #1 ; Copy table
52 SUBS R2, R2, #1 ; Decrement Constant
53 BNE loop2
54 B exact
55
56 ; End of the program section
57
58 ;LABEL DIRECTIVE VALUE COMMENT
59 AREA _main
60 END
```

This codes copies one table from one location to another. It also includes loops and outstr part.

Q3

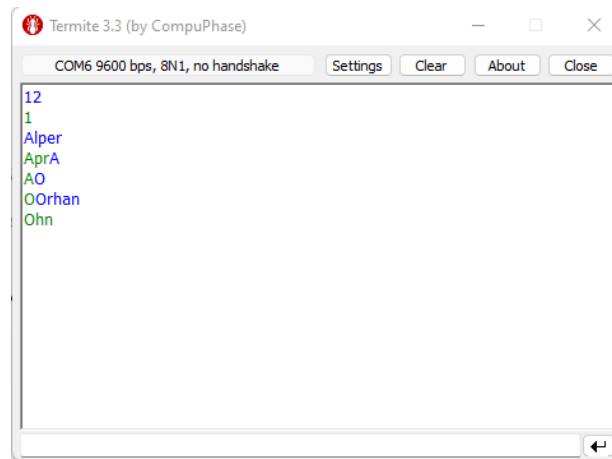
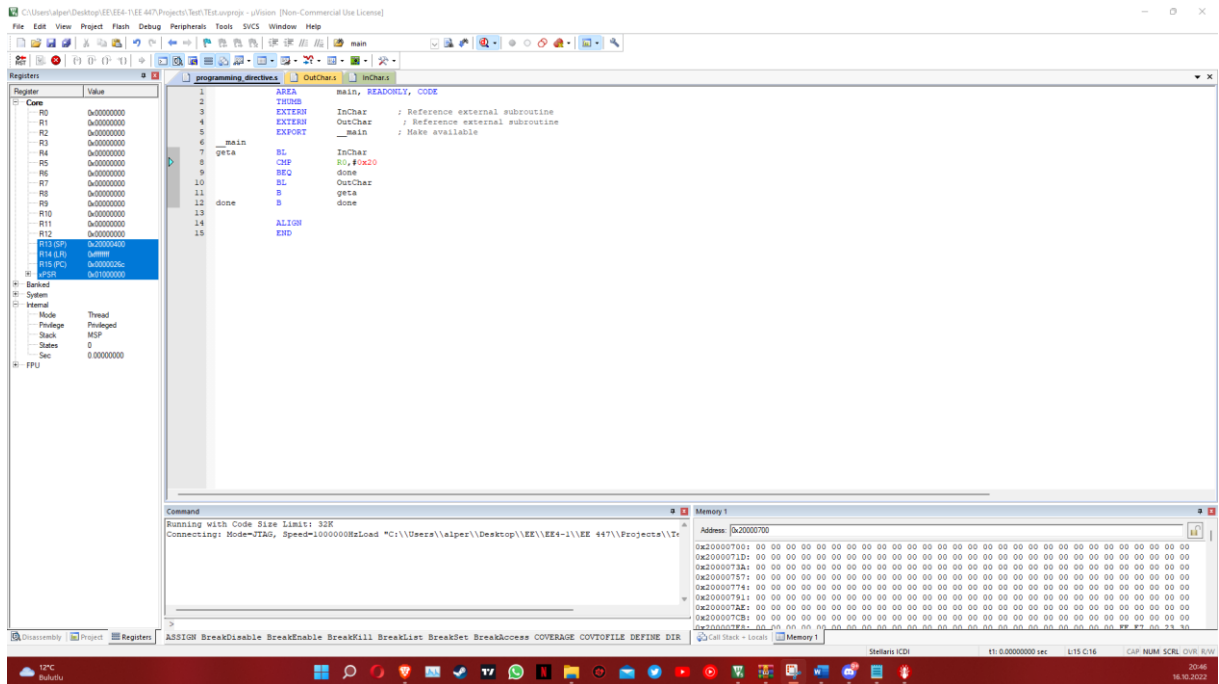
```
29 ;LABEL DIRECTIVE VALUE COMMENT
30 AREA main, READONLY, CODE
31
32 EXTRN OutStr ; Reference external subroutine
33 EXPORT _main ; Make available
34
35 _main
36 start MOV R0, #0
37 LDR R1, =FIRST ; The constant for starting at 0x20000700
38 LDR R2, =CTR1 ; Value we need for 16 loops
39 LDR R3, =R1
40 STRB R0, [R1] ; Write R0 on every loop in to R1 address
41 STRB R0, [R1] ; Write R0 to the next address and if dont put it is not modified by the operation.
42 ADD R0, R0, #1 ; Increment Value
43 SUBS R2, R2, #1 ; Decrement Constant
44 BNE loop1 ; End of the loop
45 LDR R0, =MSG
46 OutStr ; Copy message
47 LDR R1, =FIRST
48 MOV R2, #16 ; the value we need for completing copying table
49 LDRB R0, [R1]
50 STRB R0, [R1, #OFFSET]
51 ADD R1, R1, #1 ; Copy table
52 SUBS R2, R2, #1 ; Decrement Constant
53 BNE loop2
54 B exact
55
56 ; End of the program section
57
58 ;LABEL DIRECTIVE VALUE COMMENT
59 AREA _main
60 END
```

In this code, we started stable from 0x20000700, and we changed it so that it counts two values and then increases.

Orhan ÖZER
Alper Kutay ÖZBEK

2375533
2375467

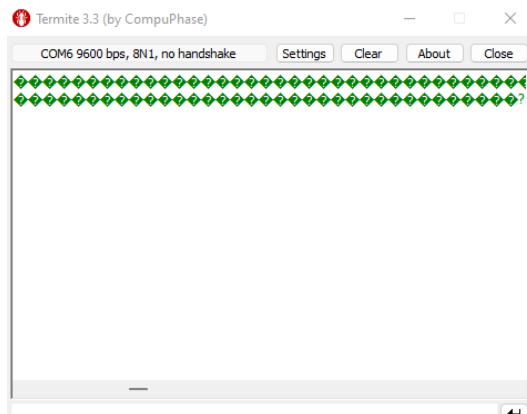
Q4



We gave input and observed output from Termite.

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2375467

In this question, we copy the table from another location with c language.



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The screenshot shows the uVision IDE with the following components:

- Menu Bar:** File, Edit, View, Project, Flash, Debug, Peripherals, Tools, SVCS, Window, Help.
- Toolbar:** Standard IDE icons for file operations, editing, and debugging.
- Project Explorer:** Shows a project named 'demo\demo' with a 'Target 1' and a 'Source Group 1' containing files 'gdc', 'InChars', 'OutChars', and 'CMSIS'. There are also device-specific files for 'startup_TM4C123x' and 'system_TM4C123x'.
- Code Editor:** Displays the source code for 'InChars.c'. The code includes headers for 'stdint.h' and 'stdbool.h', and defines 'InChar' and 'OutChar' functions. The 'main' function uses these to take input and print it.
- Build Output Window:** Shows two warnings about anonymous unions being a C11 extension, one from 'stdint.h' and one from 'stdbool.h'.

