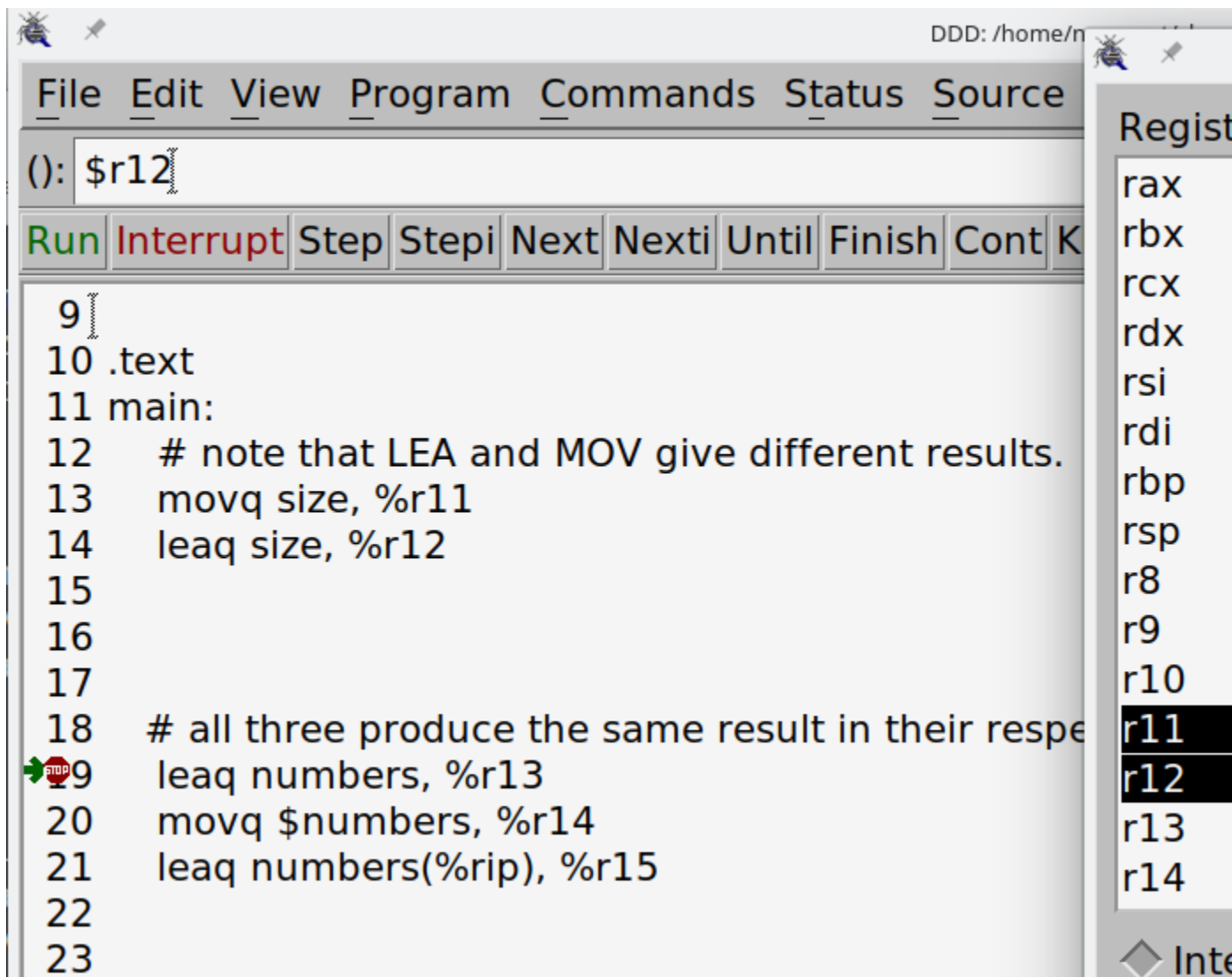


Unit 09_010 – LEA

1. What does LEA stand for?
2. How does the SYNTAX of the LEA instruction compare to the SYNTAX of the MOV instruction?
3. How does the MEANING of the LEA instruction compare to the MEANING of the MOV instruction?

4. The following image is from the ddd debugger. It shows the memory contents after lines 13 and 14 of the code were executed. Why are the contents of r11 and r12 different?



The screenshot shows the ddd debugger interface. The main window displays assembly code with line numbers 9 through 23. Line 13 contains `movq size, %r11` and line 14 contains `leaq size, %r12`. A red arrow points to line 19, which is `leaq numbers, %r13`. The right-hand pane shows a list of registers: rax, rbx, rcx, rdx, rsi, rdi, rbp, rsp, r8, r9, r10, r11, r12, r13, and r14. The registers r11 and r12 are highlighted in black, indicating they are the focus of the question.

```
File Edit View Program Commands Status Source
(): $r12
Run Interrupt Step StepI Next NextI Until Finish Cont K
9
10 .text
11 main:
12 # note that LEA and MOV give different results.
13 movq size, %r11
14 leaq size, %r12
15
16
17
18 # all three produce the same result in their respe
19 leaq numbers, %r13
20 movq $numbers, %r14
21 leaq numbers(%rip), %r15
22
23
```

Register List:

- rax
- rbx
- rcx
- rdx
- rsi
- rdi
- rbp
- rsp
- r8
- r9
- r10
- r11
- r12
- r13
- r14

If you have any lingering questions or problems, please write them here or see me.

