

## Part 1: Problem Set 5

- (1) Yes, we got the expected answer. FindZ.asm contains the source code for this problem. All variables are initialized to 2.
- (2) FindZ\_2.asm contains the source code for this problem.
- (3) On line 10, we changed the register from r1 to r7. In the debugger, we could catch this error by going through the register names and values.

## Part 2: Examination of compiler output

Using the provided translator, we translated our written C code into assembly with both optimization levels 0 and 2. We then compared the translated C code with our own written assembly. The basic idea behind both codes are very similar. They both go through the array and check the nth digit from the right against the nth digit on the left. However, since the translation is straight from the C code, it is a few lines longer and does some operations that aren't actually necessary. So the assembly code that we wrote is more efficient. Between both of the optimization levels, O0 is much bigger than O2. O2 looks very close to the same as the code we wrote. O0, however, clearly defines everything and takes no shortcuts. Not only that, but it actually displays the text, "Yes, it is a Palindrome" or "No, it is not a Palindrome".