Project Writeup

Raymone Miller

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1 Project Summary

Some server daemons will offer services to those that request it, such as NTP. Write a math server that will provide similar services to those that request a few specific items. The server should accept UDP requests in one of three forms.

```
Fnumber
    Given a decimal number is between 0-300 (inclusive), the response
    packet should be F(number) in hexadecimal, where F() is the Fibonacci
    function.
Dnumber
    Given a decimal number between 0-10^19 (inclusive), the response packet
    should be that number in hexadecimal.
Rnvmber
    Given a Roman numeral nvmber between I-MMMM (inclusive), the response
    packet should be that number in hexadecimal.
```

2 Challenges

A challenge I had for this project was getting the fibonacci assembly code to work within C. The code was originally written all within main, so I had to rewrite parts of it to fit it into a callable function. I also originally didn't properly follow the calling conventions for preserving registers. This caused it to segfault in ways that I previously did not noticed because it was being called instead of just being run directly in main. I took me a while to understand this.

3 Successes

A success I found, which is tied to my challenge, is how I was able to convert my fibonacci assembly code into a function and call it from the C program. As I stated, it was something I was never able to do before, and I am usually not comfortable with assembly. Being able to strip the code I had, make the

necessary changes, and additions to make the code work felt very fulfilling for me.

4 Lessons Learned

A lesson I learned is that logging in Linux is a lot simpler than I thought. I've never used the syslog functions before, and it was surprisingly a lot more straightforward that I imagined to be able to log a message to the system. And I can easily format the message like a call to printf.