

Due: December 3.

Written: 4:00pm in 2131 Kemper.

Programs: 11:59pm using handin to cs30a p7 directory.

Filenames: fast\_fib.c, find\_digits.c, palindrome.c

**Written:** Problems #4 and #5 on page 546

**Programming.** All programs should be able to compile with no warnings when compiled with the `-Wall` option. You should put your name(s) in a comment on the first line of each file. The prompts, and output format of each program must match the examples exactly.

- (1) Programming problem #2 on page 521. Filename: fast\_fib.c  
Note: the function fast\_fib must make only one recursive call.

```
[...@pc...]$ fast_fib.out
Enter the positive integer n > 1
The 1-th and 2-th Fibonacci numbers are 1 and 1.
[...@pc...]$ fast_fib.out
Enter the positive integer n > 2
The 2-th and 3-th Fibonacci numbers are 1 and 2.
[...@pc...]$ fast_fib.out
Enter the positive integer n > 3
The 3-th and 4-th Fibonacci numbers are 2 and 3.
[...@pc...]$ fast_fib.out
Enter the positive integer n > 9
The 9-th and 10-th Fibonacci numbers are 34 and 55.
```

- (2) Programming problem 1 on page 528. Filename: find\_digits.c

```
[...@pc...]$ find_digits.out
Enter a line of characters > ISBN 0-321-40991-4
The digits are 0321409914
[...@pc...]$ find_digits.out
Enter a line of characters > SFO2009sabJ15
The digits are 200915
```

- (3) Programming problem 2 on page 548. Filename: palindrome.c

```
[...@pc...]$ palindrome.out
This program will test to see if a string is palindrome.
Input a debanked, unpunctuated string of charaters.
Enter exit to stop
Input: hannah
hannah is a palindrome.
Input: civic
civic is palindrome.
Input: deleveled
deleveled is a palindrome.
Input: program
program is not a palindrome.
Input: exit
[...@pc...]
```