

HW#2

Computer Science: Program Your Own RPG

Instructions: Complete as much as you can in one hour and then stop. (Do your best.) Try to work on your own.

1. The Fibonacci sequence is a famous list of numbers that has been found in nature:

0, 1, 1, 2, 3, 5, 8, 13, 21, 34 ...

$f_0, f_1, f_2, f_3, f_4, f_5, f_6, f_7, f_8, f_9 \dots$

Notice that $f_9 = f_8 + f_7$. In general for any n we have $f_n = f_{n-1} + f_{n-2}$. Find the following Fibonacci numbers:

$f_{10} =$ $f_{11} =$ $f_{15} =$

2. Complete the following code to compute the Fibonacci sequence:

```
 fibonacci
{
    public static  main(String[] args)
    {
        int i = 0;
        if (args.length > 0)
        {
            i = Integer.parseInt(args[0]);
        }
        System.out.println("F(" + i + ") = " + fibonacci(i));
    }

    public static int 
    {
        if()
        {
            return fibonacci(n-1) + ;
        }
         if()
        {
            return ;
        }
        return -1;
    }
}
```

3. Instead of calculating the Fibonacci numbers by hand, one could use the program from #2. Complete the following terminal commands such that it returns f_{20} , f_{200} , and f_{1000} :

```
> java  20
>  fibonacci 200
> 
```