Problem Set 3, Problems 0 and 1

Problem 0: Reading and response

Put your response to the reading below.

I agree with the statement that software does not fail in the same way as a mechanical system because software depends on logic rather than materials and physical laws. For example, a gear could break in a mechanical system due to overstrain or the piece being too old. However, unless there is a short circuit or something of the sort, a software can't go against what it was coded to do. There will never be an instance where a condition is evaluated to be false when it is actually true. The only mistakes in software happen due to human error such as when the software's developer fails to see a program's possible outcome that is out of the scope that he envisioned his/her program to work in.

Problem 1: Tracing list comprehensions and recursion

1-1

x	scored_vals
-2	[-2, 1, 3, -4]
1	[1, 3, -4]
3	[3, -4]
-4	[-4]

1-2 value assigned to `bestpair`

[16, -4]

1-3 value returned by `mystery1`

-4

1-4

```
mystery2('sizes')
    s = 'sizes'
    result_rest = mystery2('izes') = sezi
    return sezi

    mystery2('izes')
        s = 'izes'
        result_rest = mystery2(zes) = sez
        return sezi

        mystery2(zes)
            s = zes
            result_rest = mystery2(es) = se
            return sez

            mystery2(es)
                s = es
                result_rest = mystery2(s) = s
                return se

                mystery2(s)
                    s = s
                    result_rest = mystery2(...) = ...
                    return s

                    mystery2(...)
                        s = ...
                        result_rest = mystery2(...) = ...
                        return ...
```

1-5

sezi