Problem Set 3, Problems 0 and 1

Problem 0: Reading and response

Put your response to the reading below.

I think that the most preventable factor was the general ignorance of security guidelines and assuming that the speeds would never get that high. It's a very bold assumption to make considering you are working on software for something designed to go very fast, and software that could be used as a basis for other rockets in the future that could be faster. Considering the project was worth hundreds of millions if not billions of dollars I think the extra safety precaution would probably be warranted. I just can't imagine being the programmer doing that and reasonably thinking to myself "on this rocket that goes extremely fast to a point where I don't really know how fast it will go, it definitely won't go this fast". I agree that software doesn't fail in the same sense as a mechanical system. Mechanical systems often fail because of material problems, like metal becoming weaker through time or joints becoming weaker through years of continuous load. While on the other hand, computer programs fail because of logical errors more than load, because the domain is generally so limited most errors are in the program itself. However, a computer program can fail like a mechanical system, whether being overloaded or parts interoperating wrong, or even the computer parts getting too hot, however I think logical errors are more common for a majority of programmers.

Problem 1: Tracing list comprehensions and recursion

1-1

w	scored_words
'python'	[['y', 'python'],
'is'	[['y', 'python'], ['i', 'is'],
'really'	[['y', 'python'], ['i', 'is'], ['e', 'really'],
'great'	[['y', 'python'], ['i', 'is'], ['e', 'really'],['r', 'great']]

1-2 value assigned to `best_pair`

['y', 'python']

1-3 value returned by `mystery1`

'python'

1-4

```
mystery2('intent')
    s = 'intent'
    result_rest = mystery2('ntent') = 'tnen'
    return 'tneni'

    mystery2('ntent')
        s = 'ntent'
        result_rest = mystery2('tent') = 'tne'
        return 'tnen'

        mystery2('tent')
            s = 'tent'
            result_rest = mystery2('ent') = 'tne'
            return 'tne'

            mystery2('ent')
                s = 'ent'
                result_rest = mystery2('nt') = 'tn'
                return 'tne'

                mystery2('nt')
                    s = 'nt'
                    result_rest = mystery2('t') = 't'
                    return 'tn'

                    mystery2('t')
                        s = 't'
                        return 't'
```

1-5

'tneni'