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Problem Set 3, Problems 0 and 1

Problem 0: Reading and response

1. The problem with Ariane 5 was that the programmers thought that it would never need a calculation over 16-bit format. If they did not underestimate the rocket and did a 64-bit format, the rocket would never crash converting the data it needed.
   Same as the programmers, we underestimate many things in our lifetime. For example, the difficulty of the test, the capability of one's ability, or simply our friends. I think this is not a good way of thinking about something. If we have a better understanding of before we do something, it will have a better result.
2. I definitely agree with this statement. As the article states, software built's up over many years with many different lines of code. With all different lines of code, the software behaves more like an organism than a machine. When the machine is shown from the outer part, the software is shown from the inner part.

Problem 1: Tracing list comprehensions and recursion

1-1

w	scored_words
'python'	[['y', 'python'],
‘is’	[[‘y’, ‘python’], [‘s’, ‘is’],
‘really’	[[‘y’, ‘python’], [‘s’, ‘is’], [‘e’, ‘really’],
‘great’	[[‘y’, ‘python’], [‘s’, ‘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