

## Homework 7

Due Thursday, 03/10/2016, by 11:55 p.m.

Zip up all the files used in your problem solutions (e.g., P2.hs) as well as the following main program file:

Please also include a file `TestMyCode.hs` that contains the following code:

```
import P2

giantSent1 = "some giant gave SnowWhite the dagger"
giantSent2 = "some giant gave SnowWhite the dagger that Alice admired"
giantSent3 = "some giant gave SnowWhite the dangerous dagger"

main = do
  putStrLn ("giantSent1: " ++ (show giantSent1))
  putStrLn ("parses as " ++ (show (pS $ words giantSent1)))
  putStrLn ("giantSent2: " ++ (show giantSent2))
  putStrLn ("parses as " ++ (show (pS $ words giantSent2)))
  putStrLn ("giantSent3: " ++ (show giantSent3))
  putStrLn ("parses as " ++ (show (pS $ words giantSent3)))
```

No other code should be in this file aside from the import statements and the code evaluating the sentence. Make sure this program compiles and runs properly with your revisions to P2.

Please include good comments and use good variable names with your programs. Otherwise it is very difficult to read your code because Haskell is so concise.

1. (10 points) If you look at the definition of the parsers starting at line 83 of file P2.hs, you will notice that many of the items in our simple English grammar are missing. For example, while  $NP \rightarrow DET\ CN$  is represented, the similar  $NP \rightarrow DET\ RCN$  is not. Verb phrases are also quite limited in the implementation. Please add the missing items from our grammar. You can find the English grammar on slide 3 from lecture 17.

*Note that sentences like `giantSent2` have two parses in our grammar. One stops short of the “that” clause, while the second includes the “that” clause.*

2. (10 points) In this question you will (again) add several adjectives to our language and learn how to parse the richer language. As above, you will modify the file P2.hs so that `pS` will correctly parse sentences involving the adjectives red and dangerous.