

CSC 311 Fall 2016
Homework Assignment #5
Due Oct. 14, 2017 – Midnight

Instructions

Submit your completed work using Blackboard before deadline. Submit the JFlex file, Byacc/J file, Makefile, and your sample inputs.

Project Description

Using JFlex and Byacc/J, write a parser that can determine valid English sentences according to the grammar below.

```
sentence ->  nphrase VERB ending
            |  nphrase VERB vmodifier ending
            |  nphrase VERB nphrase ending
            ;
ending ->    PUNCT END
            ;
nphrase ->   modifiednoun
            |  ARTICLE modifiednoun
            ;
modifiednoun ->  NOUN
                |  nmodifier modifiednoun
                ;
nmodifier ->    ADJECTIVE
                |  ADVERB nmodifier
                ;
vmodifier ->    ADVERB
                |  ADVERB vmodifier
                |  PREPOSITION nphrase
                ;
```

The only allowed tokens are ARTICLE VERB NOUN ADJECTIVE ADVERB PREPOSITION END PUNCT

END = newline

PUNCT = period, comma, exclamation, question mark

ARTICLE = the, The, an, An, a, A (both lower, upper case for first character only)

VERB = study, sleep, play, throw, write, eat

NOUN = book, laptop, candy, pen, box

ADJECTIVE = cute, clever, smart, witty, tired, blue, red

ADVERB = willfully, abruptly, endlessly, delightfully, lightly, beautifully

PREPOSITION = before, into, on, above, by, along

You are welcome to add anymore words to the above list.

Requirements

1. Write your JFlex specification
2. Write your Byacc/J specification
3. Write your Makefile
4. Write at least 5 sentences to use as sample inputs to your parser.
5. If you get a successful parse, print out a statement that it was successful.

You can only use JFlex and Byacc/J (as shown in class).

Given an English sentence as input, running your Parser should output a success message if the sentence has valid grammar. Otherwise, it should show an error message letting the user know the line number and column number containing the error.

Grading Criteria

1. Technical correctness:
 - a. Valid JFlex specification: 40%
 - b. Valid Byacc/J specification: 40%
2. Can handle all test input : 20%