# Design (Q1)

## Design-Grammar

Since 1a was overly specific there was not much that was needed in terms of changing the grammar. As long as I followed the rules given in grammar 1 it was easy to implement without any changes. Only thing that was needed to be kept track of was all the different non-terminals.

Since Grammar 2 was just a simplified version of Grammar 1 I used the extra non-terminals of Grammar 1 as a base. Doing so I was able to figure out which basic features I would need to implement in order to get it to work.

## Design-Lexica

Since the Lexicon was set there was not much designing to be done. Mostly figuring out which features were needed to be noted for non-terminal agreement. Example, you need to know whether a noun is a pronoun in order to determine whether you can attach a PP to it.

# Limitations

## Limits

Limits to the grammar include that it will be unable to handle purely intransitive verbs. (i.e. She arrived with puppies). It is also unable to attach PP to pronouns making sentences such as “She fed him with puppies” impossible.

# Testing Strategy

## General

Key things that were tested for both questions were general grammar rules.

1. The given test sentence “she fed the dog with puppies with him”
2. That singular nouns could not start a sentence (\*”dog fed puppies”)
3. The determiner “the” could attach to any noun
4. That nominals could not appear in the middle of a sentence while nouns like “he” could not appear at the beginning of a sentence. (\*”he fed puppies”, \*”he fed she”)
5. Since “fed” requires a direct object it was made sure that a sentence couldn’t end on “fed”. (\*”she, fed”)
6. Finally, tests were done to ensure that prepositions could not follow pronouns. (\*”she fed him with puppies”).

## Question Specific

Since both parts shared the same capabilities the only thing to test specifically between the parts was the non-terminals. For 1a it was ensuring that all non-terminals were accounted for. And for 1b it was ensuring that there were no extra non-terminals used.