**Design**

Part 1

Grammar 1 was simply me just copying down each type as a non-terminal as instructed in th handout. The rules and Lexical entries were straightforward as well. Once I got familiar with the syntax it became easy. For Grammar 2, I was a bit unfamiliar with the notation for feature structures so I consulted the manual for clarity. They provided multiple examples in the appendix. I was also a little confused by Fido being NPRP instead of being N. I only found out this was a typo after I had implemented my grammar. Nevertheless, the grammar works in most case dealing with this. My strategy for this question was to categorise all the type clauses found in Grammar 1 to its version in Grammar 2. That allowed me to know the cases for the features needed for each rule. So I worked backwards from each rule and implemented features in the Type Hierarchy accordingly. The “type” non terminal that acts as a feature for noun was implemented with the idea that Fido was a pronoun. When working with features for and looking for the most general type I noticed that VPs reduced to NP and the NPs reduced to N. Hence why I made N the top where the tense is inherited from. Likewise, for PP.

Part 2

I started by trying to understand the starter code and noted down types that I could need. As well trying to understand the structure of the TRALE grammar. Made some very general rules that applied to the 4 sentences given in the handout i.e (S -> NP VP; NP -> Det N). This is without the daughter categories so this was straightforward as well. Then I moved on to the lexical entries but I was confused again because in the starter code it listed the verbs in their base forms in the semantics section. This section was the trickiest. My plan was to try and implement both the Grammar Rules simultaneously as I was defined the features. This was maybe not the best strategy because I kept on confusing myself and running into errors where I forgot to update a variable name or fix a feature. Because of the comment left in the starter code I initially made features for each of the v\_sem verbs. I was then trying to have them inherit themes from within the sem type. This lead to a problem when I was trying to define the lexical entries because of the verb sleep being different semantically. I also needed know what thematic roles where needed. So I used the information given in Part2A and the lecture slides to figure out that I needed features for subject object and object to preposition. Then I made thematic role types for agent/beneficiary/theme/and experiencer. This allowed me to specify the features and rules that applied to each verb in the context of the four sentences from the handout. A limitation of my grammar is that it does not accept nested sentences properly failing in most cases. There is also a slight issue the agreements working for some verbs as they are treated the same way as others depending on the rule i.e I do not think I restricted it well enough.