Name: Yuhan Shao
UTROid: shaoyuha
StudentID: 1002281327

CSC485 Assignment1 Report

■ **Part A**: **Test Strategy**

- After I done each part, I tested the cases given in this part.
- And in each part, I just extended the Grammar from the pervious part instead of changing it. Therefore, I can guarantee my current Grammar can still pass the cases in the pervious part.
- After I done 3.3, I first categorized the words provided in the A1-vocab.txt, and then tested the example provided in the A1-test.txt.
- Positive means the correct grammar that can be phrased correctly by my Grammar, I just followed my Grammar directly to construct the test case. Negative means the wrong grammar that cannot be phrased by my Grammar, I deleted or reordered the significant words in the sentences from the test cases in the Positive in order to generate the test case for Negative. ['significant words' here means the words that have a special contribution in a sentence, once be removed or reordered, the sentence structure may be changed significantly]
- For Undergen part, I supposed to give grammatical sentences that my Grammar incorrectly excludes. At first, when I wrote 3.2, I misread the question and I wrote my grammar following the sixteen tenses in English. Then I asked professor and he said we do not have to consider these and this is for the assignment2, therefore, I simplified my grammar. I provided the test cases that can be phrased in my original version of Grammar but not in this simplified version. [these test cases are about the tenses and are the Case5-8 in Undergen]
- For Overgen part, I supposed to give ungrammatical sentences that my grammar incorrectly includes. My test strategy is similar to the process we learned in the class about "Charts" though this strategy is not designed for testing. But the main idea is the same. I check my Grammar one by one, from the beginning of the sentences, i.e.: determiner, noun, pronoun or proper noun. And then, check token by token, consider the different format of each token that possibly give the wrong grammar, e.g.: the disagreement of the subject and verb.

■ **Part B: Discuss the limitation, Undergeneration and Overgeneration**

- **Undergeneration:** In the **Undergen** test cases, I have 11 cases of grammatical sentences that my grammar incorrectly excludes. The Case1&2 somehow relate to the word [to] which can be either a preposition or inflection. In my Lexicon, I made a special [To -> 'to'] to handle the inflection case. But in my Grammar, I just included the structure of [to do] in the provided test case. In Case3&4, I considered the cases that Adj and Adv words can be in the different places in a sentence, since when I constructed my Grammar I have struggled with this problem and also consider whether separate the frequency Adv from the regular Adv. Case5-8 are about tenses, which I have mention above how I came up with these cases. Case9 is about the passive voice in the clause, I came up with this case by checking the A1-test.txt and find the test case for the that-clause. Case10&11 are about the special usage of particular verbs, I came up with these case when I categorized A1-vocab.txt into my Lexicon.
- **Overgeneration:** In the **Overgeneration** part, I have only five cases. Case1 deal with the special usage of word [home] which can be an Adv. I came up with Case2 since at first I also miread the question and phrased my Grammar according to singular and plural. Therefore, actually I simplified my original Grammar to allow inconsistent between subject and verb. Case3 is about the determiner, this actually the first case I came up with, since I used the test strategy I mentioned above. [i.e.: test token by token]. Case4&5 are the special usage of some verbs and prepositions.