Students:

1. Amos Mimon – 301236287
2. Tamir Moshiashvili – 316131259

ANSWERS:

Part 1:

1. The program generates long sentences because it has recursive grammar rules.  
   The responsible grammar rules are:  
   1 NP NP PP  
   1 PP Prep NP  
   This rules for example can generate the following:  
   NP -> NP PP -> NP PP PP -> NP PP PP PP -> …  
   and can be the same for the use of the PP rule.  
   The special rule is '1 NP NP PP', since we can use a noun phrase followed by a preposition phrase a lot of times in the same sentence, yet still get valid sentence (valid grammar).
2. It happens so rarely because of the rule 'Noun Adj Noun', which is a recursive rule that repeats the Noun with adjective, is one of 5 options to 'Noun',  
   all of the rules for 'Noun' has the same weight (equals 1) so the probability of using the recursive rule is 20%.
3. For making the sentences shorter, we changed the weight for the NP rule such that there is more weight, i.e. greater probability, for the non-recursive rule,  
   the rule ' NP NP PP ' still has weight of 1, but the 'NP Det Noun' has weight of 3, making the odds for recursive NP be 25%.  
   For making the adjectives more frequent, we set the weight of the  
   rule 'Noun Adj Noun' to 5, so now the odds for getting more adjectives are 50%.

Part 2:

TODO: this

Part 4:

1. Rule (a) – a vs. an:  
   TODO: this
2. Rule (b) – Yes-No question:  
   In order to generate yes/no questions, we used a base-verbs (verbs in V1, like eat, perplex and so on) alongside the noun-phrase.  
     
   We separated the yes/no question to description question and noun with a verb.  
   The description question is for asking whether someone/something has the given followed description.  
   The next is for asking whether someone/something performed some action.  
     
   For this part, we created the tokens: YNQ, BVPG, BVP, YNQWord and the BaseVerb in some variations.  
     
   We used the same structure of NP+VPG here, as in regular sentences, but only with a base-verbs.

Part 5:

1. News – the grammar can generate sentences about news report like:  
   - live news – report about an act that is happening right now.  
   - interview – session of yes/no questions with someone that answer yes or no.  
   - accusation – accusing someone about an act that happened or describing an act and searching for the one that in charge.  
     
   The rules for each were based on the existing rules, combined with terminals (part of the sentence) that related to news report.