CS210 - Programming Languages
Homework #2 - Spring 2024

Due on or before Friday, February 2 at 1:30 PM

Name _____

This homework must be submitted via Canvas. Feedback on the assignment will be provided to you via Canvas.

Please give a BNF grammar for each of the following languages specified below. For example, a correct answer for "the set of all strings consisting of zero or more concatenated copies of the string `ab`" would be this grammar:

```
<S> ::= ab <S> | <empty>
```

1. The set of all strings consisting of zero or more instances of the character `S`.

2. The set of all strings consisting of a lowercase letter followed by zero or more additional characters, each of which is either an uppercase letter or one of the decimal digits `0` through `9`.

3. The set of all strings consisting of the keyword `start` followed by zero or more statements with a semicolon after each one, followed by the keyword `stop`. Use the non-terminal `<statement>`, but do not provide productions for it.

4. The set of all strings consisting of an open bracket (the symbol `[`) followed by a list of zero or more decimal digits with each digit separated by a comma, followed by a closing bracket (the symbol `]`).

5. The set of all strings consisting of zero or more instances of the character `a`, with a comma appearing between each `a` and the next. There should be no comma before the first `a` or after the last `a`.