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**17/SCI01/074**

**CSC 312**

**ASSIGNMENT 6**

1. **GRAMMAR**

In formal language theory, a grammar (when the context is not given, often called a formal grammar for clarity) describes how to form strings from a language's alphabet that are valid according to the language's syntax. A grammar does not describe the meaning of the strings or what can be done with them in whatever context—only their form. A formal grammar is defined as a set of production rules for strings in a formal language.

* + 1. **DERIVATION**

In computer science, program derivation is the derivation of a program from its specification, by mathematical means.

To derive a program means to write a formal specification, which is usually non-executable, and then apply mathematically correct rules in order to obtain an executable program satisfying that specification. The program thus obtained is then correct by construction. Program and correctness proof are constructed together.

* + 1. **PRODUCTION**

A production or production rule in computer science is a rewrite rule specifying a symbol substitution that can be recursively performed to generate new symbol sequences. A finite set of productions {\displaystyle P}P is the main component in the specification of a formal grammar (specifically a generative grammar).

* + 1. **SENTENCE**

In Logo, a sentence literal is a list of words that can be included in a program by surrounding the words with square brackets. You have been using sentences since the repeat command was introduced in the iteration lesson. We've been supplying sentences composed of Logo instructions as its second input.

* + 1. **NULL SYMBOL**

Null character/symbol is a character that has all its bits set to 0. A null character, therefore, has a numeric value of 0, but it has a special meaning when interpreted as text. In some programming languages, notably C, a null character is used to mark the end of a character string