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ASSIGNMENT 6

**Question**

Define Grammar

Write on the following

1. Derivation 2. Production 3.Sentence 4. Null symbol

 ANS:

A grammar is a set of rule governing a language or a set of rule that defines valid structure in a programming language.

1. Derivation:- A derivation is basically a sequence of production rules, in order to get the input string we have two types of derivation, which are ;

-Left-most Derivation :-if the sensational form of an input is scanned and replaced from left to right it is called left most derivation.

-Right-most Derivation:-if we scan and replace the input with production rules from the right to left, it is known as right most derivation

2. Production:- when an input string (source code or a program in some language) is given to a compiler, the compiler processes is in several phase , starting from lexical analysis (scans the input and divides into tokens code generator. The Grammar for a language consists of production rules .

A production rule(Recursive rules) are essential for describing syntax of programming languages and are a part of every compiler

3. Sentence:- A sentence is a sensational form consisting only of terminals such as a + a \* a. A sentence can be derived using the following algorithm:

Algorithm

Derive String

String := Start Symbol

REPEAT

Choose any non terminal in string

Find a production with this non-terminal on the left hand side.

Replace the non-terminal with one of the options

On the right- hand side of the production.

UNTIL string contains only terminals.

4. Null symbol or character that has all its bits set to ‘O’. A null character, Therefore, has a numeric value of o but it has a special meaning when interpreted on text. In some programming languages, notably C, a null character is used to mark the end of a character string.