AKUT PRECIOUS ZIGWAI

COMPUTER SCIENCE

17/SCI01/014

CSC 312

1. Define Grammar

Grammar can be referred to as a set of rules governing a language or a set of rules that define valid structures in a programming language.

1. Write on the following
2. 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 sequential form of one 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 right to left, it is known as right most derivation.

1. Production

When an input string (source code or a program in some language) is given to a compiler, the compiler processes it in several phases starting from lexical analysis (scans the input and divides it into tokens) to target code generation. The grammar for a language consists of production rules.

A production rule (recursive rules) are essential for describing the syntax of a programming language and are a part of every compiler.

1. A sentence is a sentential 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 nonterminal in string

Find a production with this nonterminal on the left-hand side

Replace the nonterminal with one of the production on the right-hand side of the production.

UNTIL string contains only terminals

1. Null symbol or character is a character that has all its bits set to zero (‘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 characteristic is used to mark the end of a character string.