1. In your own word,define what a grammar is and how it relates to a language.

A grammar is a definition of the structure of a language (what sequences of symbols are legal). Grammar is important to a language, and it is also necessary to learn it [DeBoer] . Any language program can be regarded as a string (a finite sequence) on a certain character set, and the grammar defines the lexical and formal rules of the language. Just like English, there are words and grammar. Among them, words are solitary morphemes, and grammar is to organize these words into a sentence, and a sentence into a paragraph, thus forming a language. But a language that conforms to grammar does not mean that there are Correct semantics. Grammar also has some properties. For example, recursion, connecting words layer by layer, enriching the language. Grammatical inheritance is the structural organization of grammar rules through which grammars inherit rules from ancestor grammars, or may have their own rules inherited by descendant grammars.[Aksit] .Grammatical inheritance is the means and way to shape a language. Grammatical inheritance is to make the language richer and more complete.

Citation

DeBoer, J. J. (1959). Grammar in language teaching. Elementary English, 36(6), 413-421.

Aksit, M., Mostert, R., & Haverkort, B. R. H. M. (1990). Compiler generation based on grammar inheritance. Memoranda informatica, 0(07), -.

2. Prove or disprove that { Where n and m are even number } is a regular language.

Prove: to show that a language is regular, one must construct a DFA to accept it.

q0

a (n times)

b (m times)

3.construt a grammar which generates the following string

S->aAb

A -> bA | aA |

4.construct a DFA to accept

q0

q1

q2

q3

a

b

b

a