

Compiler Construction

Ist Assignment

Short answer Questions

1. What is a Language Processing system?
2. Differentiate between compiler and Interpreter?
3. What is difference between front end and back end?
4. List the major Data Structures in a compiler.
5. What is Regular Expression.
6. What is an ambiguous grammar? Give example.
7. What is syntax Tree.
8. Specify the functionality of linker, loader, and compiler
9. Write short notes on Bootstrapping and Porting.
10. Calculate first and follow for the following grammar:-
S \rightarrow xABC
A \rightarrow a | bbD
B \rightarrow a | ϵ
C \rightarrow b | ϵ
D \rightarrow c | ϵ
11. Consider the following Grammar:
A \rightarrow ABd | Aa | a
B \rightarrow Be | b
Remove left recursion.
12. Apply the rules for left factoring in the following grammar:
A \rightarrow aAB | aA | a
B \rightarrow bB | b

Long answer Questions

1. Write the rules for computing FIRST() and FOLLOW().
2. Explain the need for dividing the compilation process into various phases and explain Its functions.
3. Illustrate the output of each phase of the compilation for the input a = b * c + 60
4. Explain Recursive Descent Parsing with an example.
5. Define an LL(1) grammar. Is the following grammar LL(1).

A)
S \rightarrow iEtS | iEtSes | a
E \rightarrow b

B)
E \rightarrow E + T | T
T \rightarrow T * F | F
F \rightarrow (E) | id

6 Write a short note on:

- a) LEX b) Error recovery in Top-Down Parser c) Context free grammars
d) EBNF and Syntax Diagrams

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