

M.Tech(IT) : Group B
Paper Code : MT32B
Paper Title : Compiler Design

SYLLABUS

1. Introduction

Introduction, Introduction to Assembler and Compiler, Overview to Assembler
One pass Assembler, Two pass Assembler, Translation, Linking, Loading of a program, Compilation and overview.

2. Lexical Analysis

Definition, specification, recognition of Token, introduction To Finite Automata, DFA, N DFA, Regular Expression, Optimization Of DFA , Lexical Error

3. Syntax Analysis

Parsing, topdownparser, Recursive descent parser, LL(1)Parser, limitation Bottom down Parser, Shift Reduce Parser , Limitation, Non backtracking and non backtracking parsers .Deterministic topdownparser, LR recursive grammar operator precedence parsing, Pushdown Automata, Context Free Language, Ambiguous Grammar.

4. Sematic Analysis

Type Analysis, Name and Scope analysis, construction of syntax trees, Type Analysis and Type Checking, Type Expression, Type Checking, Type conversion, Symbol tables, Dynamic and Static Storage Techniques.

5. Intermediate Code Generation

Intermediate Languages, Assignment Statements, Boolean Expression Translation of Arrays, Translation of control flow Constructs, Procedure calls.

6. Code Generation

Simple Code Generator, Skeletal code generator, Sethi Ullman Algorithm, peephole optimization

7. Optimization

The Principal Source of Optimization, Local optimization, Global Optimization, Loops in Flow Graph, Performing Data Flow Analysis, Tools for Data Flow Algorithm

Reference:

1. Alfred V. AHO, Ravi sethi, Jeffrey d. Ullaman "Compilers Principal, Techniques, and Tools" , Pearson Education
- 2 Harry R .Lewis Christos H. Papadimitriou "Elements of the Theory of Computation , PHI