1. Structure of optimizing compilers; JVM and its intermediate representation Abstractions of storage reference behavior.

2. Control flow and program call graphs; Depth-first spanning trees.


6. Dominance frontiers.

7. Control dependence; Computation of dominance frontiers.

8. Problems solved over flow graphs: intervals; Cocke-Allen intervals;


10. Data flow frameworks.

11. Iterative solution of data flow problems.

12. Elimination solution of data flow problems.


14. Static single assignment form; Constant propagation.

15. Classical data flow problems and solutions.


17. Reduction in strength; Induction variable analysis.

18. Alias analysis.

19. Incremental data flow algorithms; Demand-driven data flow analysis.

20. Parallel languages.


23. Program dependence graphs; Program slicing.

24. Vectorization; Loop distribution.

25. Direction vectors; Data dependence.


27. Sequencing and privatization.

28. Loop Interchange.

29. Loop Reversal; Other transformations.

30. Data dependence decision algorithms.

31. Recurrences.

32. Storage management.