

6.110 Computer Language Engineering

Re-lecture 6

April 24, 2024

Register allocation

For the quiz, you should know:

- Principles of web-based register allocation
 - Webs
 - Live ranges
 - Interference graphs
 - Graph coloring
 - Heuristics for spilling and splitting

Loop optimizations

For the quiz, you should know:

- How to identify loops in code
- Domination relation, dominator trees
- How to identify loop-invariant code
- Reasoning about induction variables

Parallelization

For the quiz, you should know:

- Why parallelize?
- Iteration spaces, data spaces
- Different types of data dependencies
- Distance vectors, and how to determine which loops can be parallelized based on distance vectors
- General concepts about integer programming