6.858 Final Project: Baggy Bounds with LLVM
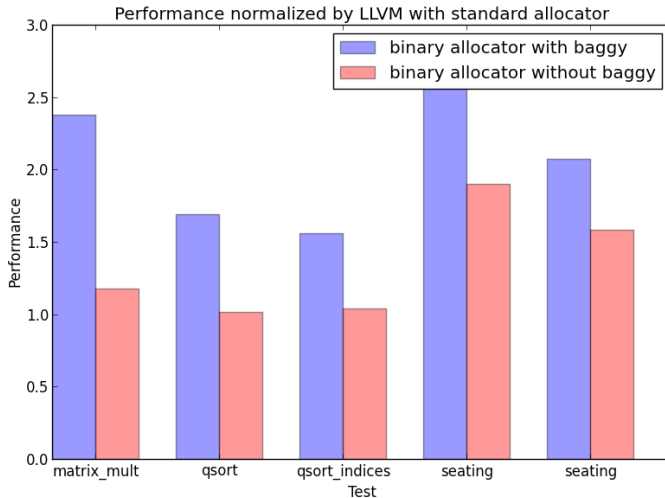
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Plan: Write transformation pass on LLVM Intermediate Representation (IR) to implement baggy bounds pointer arithmetic

1. Align every global and stack allocation to correct boundary.
2. On stack allocation, update size_lookup_table, marking a region with its allocation size.
3. Augment pointer arithmetic with baggy bounds checks.
4. Implement binary buddy allocator for dynamic allocations.

Results

Performance normalized by LLVM with standard allocator

Thank you. Questions?