

Introduction to Program Analysis: A Pointer Centric View

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An Outline

- Introduction to Program Analysis
- Live Variables Analysis
- The Big Picture View of Pointer Analyses
- Details of Points-to Analysis
- Interprocedural Issues in Pointer Analysis



Introduction to Program Analysis

- Introduction and Overview of Program Analysis
- Soundness and Precision of Program Analysis



Live Variables Analysis

- Live Variables Analysis
- Strongly Live Variables Analysis
- Some Observations



The Big Picture View of Pointer Analyses

- Motivation
- Abstraction Vs. Approximations
- Trends in Pointer Analysis



Details of Points-to Analysis

- Pointer Statements
- Comparing Points-to and Alias information
- Defining Points-to Analysis
- Flow Insensitive Points-to Analysis
- Flow Sensitive Points-to Analysis
- Liveness Based Points-to Analysis
- Handling Heap
- Tutorial problems on points-to analysis



Interprocedural Issues in Pointer Analysis

- Issues in Interprocedural Analysis
- Top-Down Approaches to Context-Sensitive Analysis
- Bottom-Up Approaches to Context-Sensitive Analysis
- Conclusions



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