DRIVING BY CODEMAP

Nicholas Reiter

Project proposal for CSE 504
Problem

- Software projects are huge
- Lots of complex pieces and interactions
- Often multiple authors
- Hard to get involved
  - Joining a project
  - Contributing changes (even small)
- Hard to return to for maintenance
- Hard to understand
Current Solutions

- **Written documentation**
  - Often does not exist
  - Quality can vary significantly
  - Hard to keep up to date
  - Can be spread throughout code

- **Diagram documentation**
  - Same first three problems
  - Not interactive typically (static)
  - Focused on a single level
Better Solution

- CodeMaps
- Static analysis, potential for dynamic based on test runs
- Build a multi-level ‘control flow graph’
  1. Modules
  2. Classes
  3. Method
  4. Line
- Shows current level of entities with metadata
  - E.g. info on the lower level elements contained (classes for modules)
- Edges shown differently based on various properties
  - Frequency of edge
  - ‘Order’ of flow (method level, for example)
- Allows drilldown, interaction, possibly focused element view