



# DRIVING BY CODEMAP

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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