

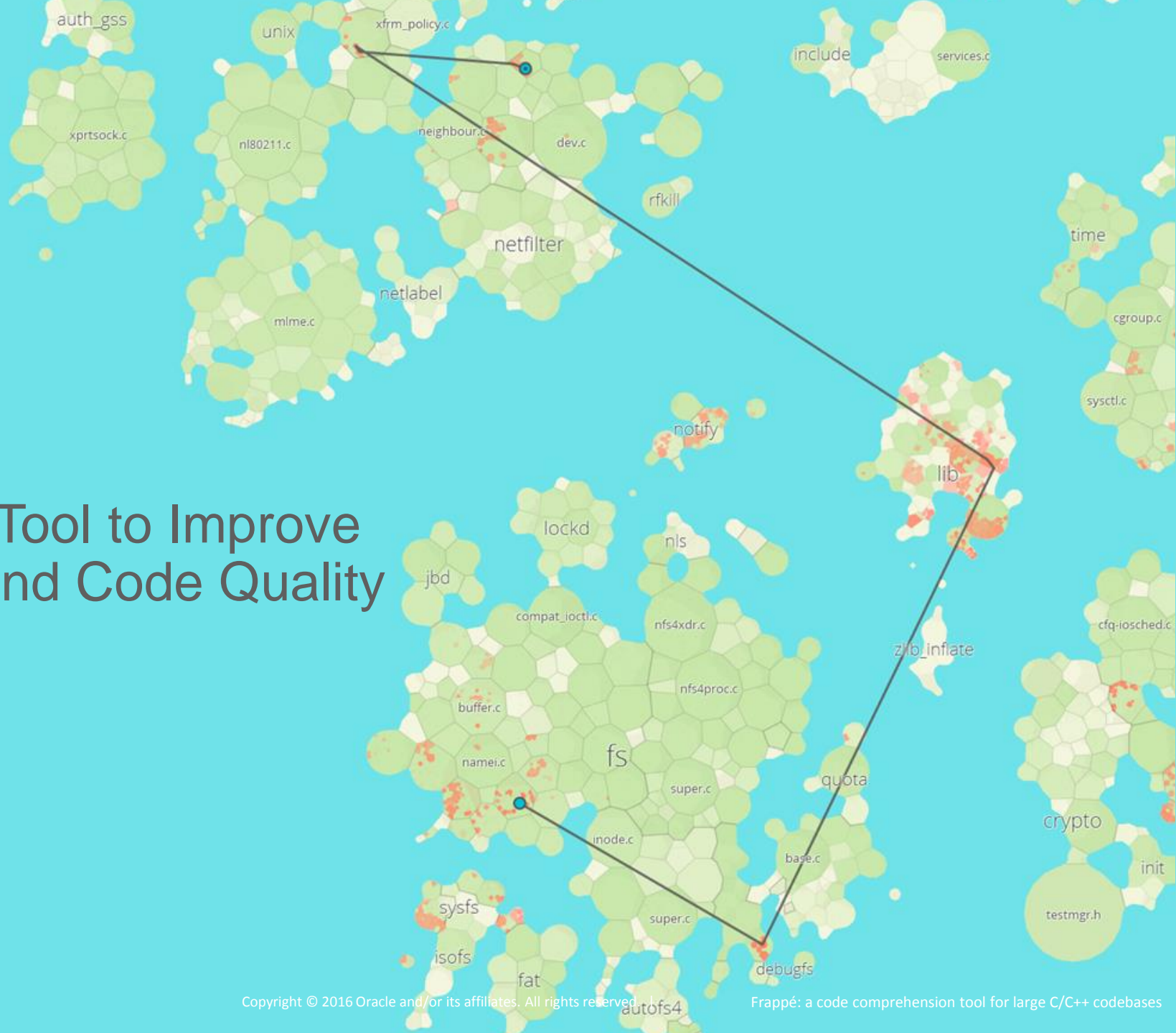


# FRAPPÉ

A Dependency Analysis Tool to Improve Developer Productivity and Code Quality

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# Bug Trace Motivation

- Java web vulnerabilities tend to have deep stack traces
  - Hard to keep track of inter-procedural control flow
  - Compounded by data flowing on paths different to control flow
- Parfait Server currently used
  - Originally designed predominantly for intra-procedural analyses
  - No attempt at showing dataflow as separate to control flow

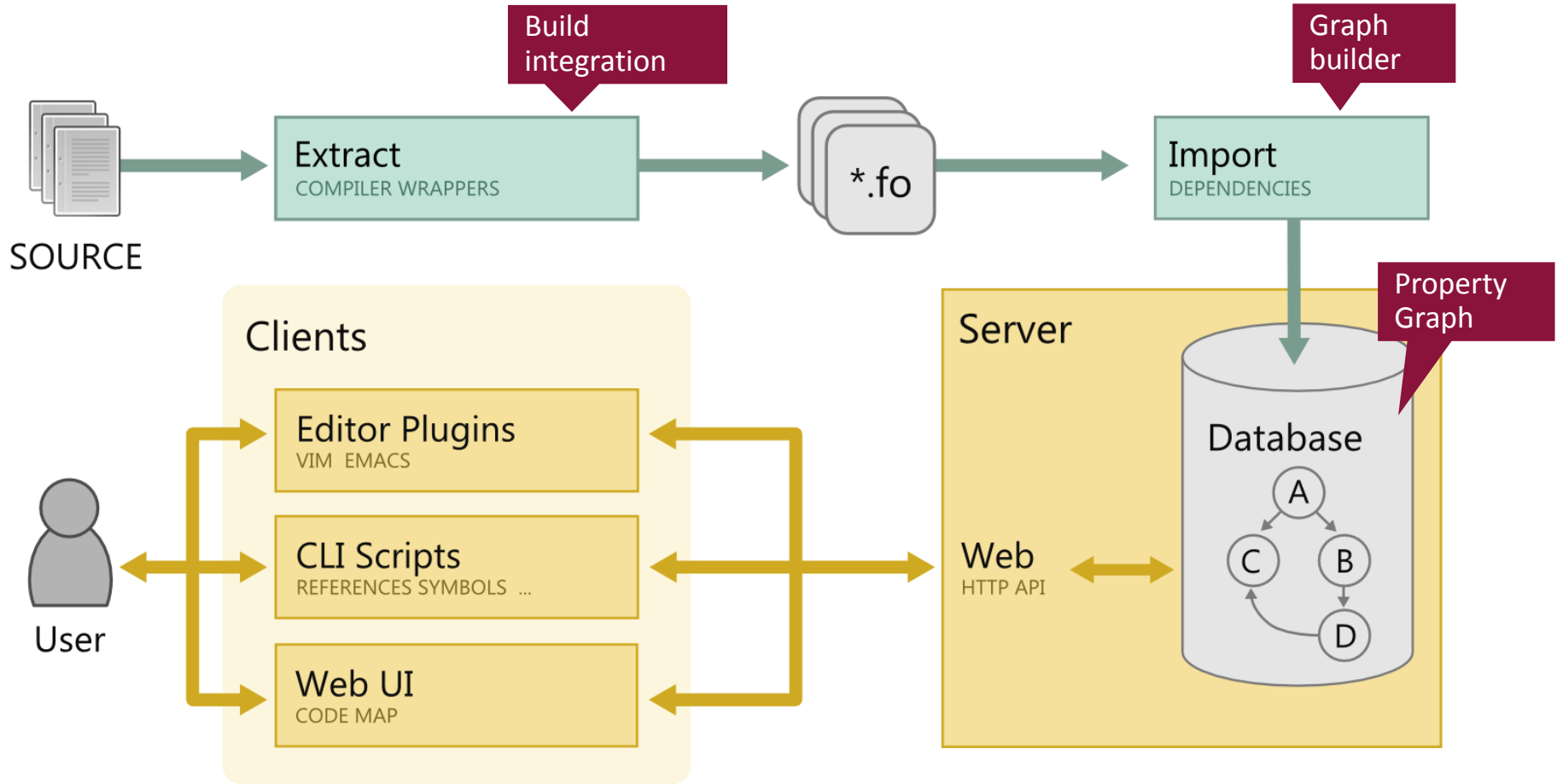
# Bug Trace Ideas

- Streamline the source view
  - Generally more succinct
  - Better controls for interacting with snippets
  - Iconography
- Augment source view with control and data flow information
  - Stack-like visualisation (with data-flow edges)
  - Map showing path of the defect
- Allow better source exploration
  - Utilise Frappé

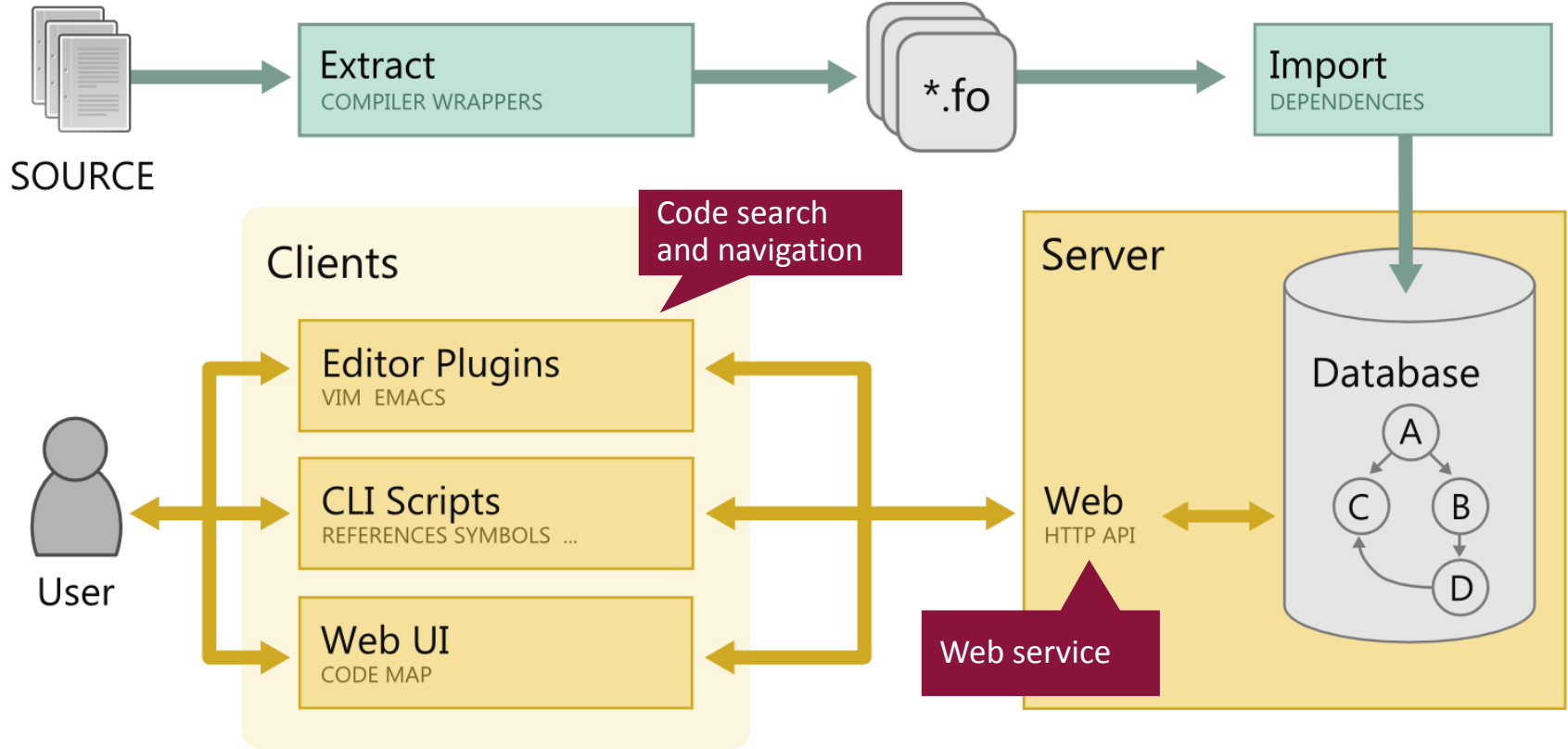
# Limitations

- Data comes from Parfait Machine Readable Reports (MRR)
  - No control flow information between call frames
  - Required extensions to parfait's report format and bug passes
- Current solution
  - Uses Frappe's graph database to infer the control flow where possible
  - Can't resolve recursive or mutually recursive calls
  - Use special storeloadflow nodes to determine data-flow edges
- Ideally
  - Analysis provides all essential details in MRR

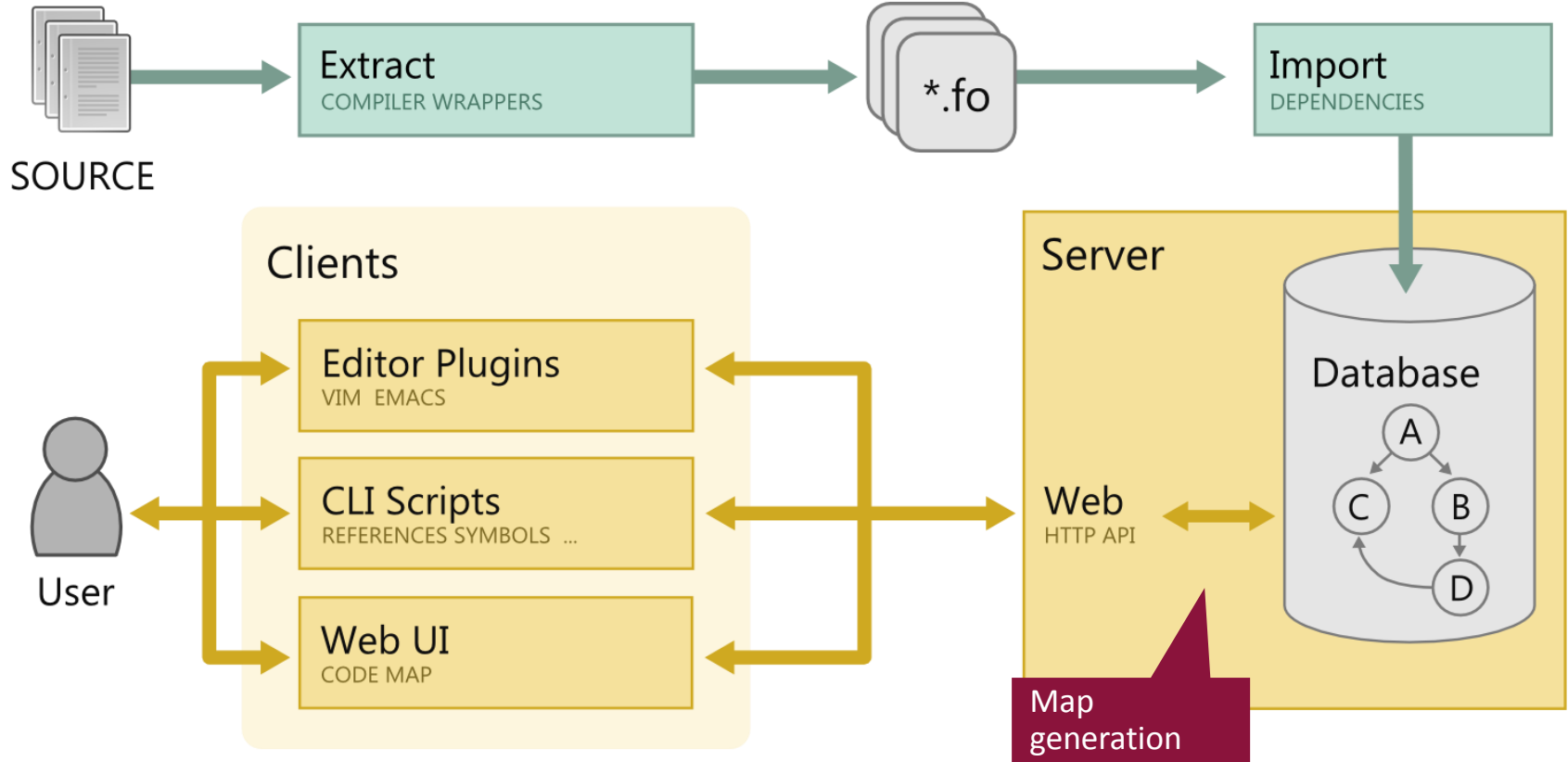
# Frappé Architecture



# Frappé Architecture



# Frappé Architecture





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