Lightning Talk

What is functionality of source code search engine required by developers?

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Concrete Application Scenario

➔ Developer wants to store an XML document to a file

Developer's levels

Type A   Type B   Type C   Type D

Search Types

| Abstract Search | Keyword-based Search | Library Search | Similar Code Search |

Search Tools

➔ **Need additional functionalities of source code search engines**
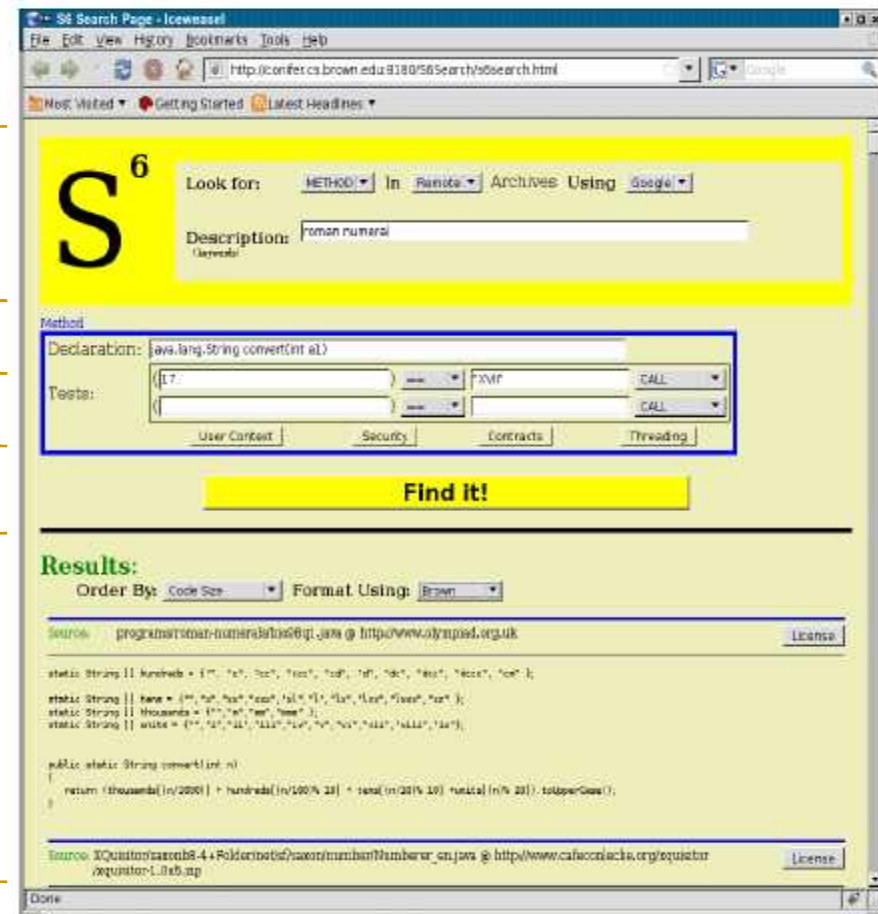
Functionality of Source Code Search Engine

- ## Type A, B (Seteven P. Reiss, Semantic-based code search, ICSE09)
  - Developer has no idea of what libraries or packages can be used to solve his problem.

Static Specification

Dynamic Specification

Natural Language Description (Keyword-based Search)

Class/Method Signature

Semantic Definition

- test cases
- contract
- security
- etc…

Results

Functionality of Source Code Search Engine

- Type C (Jinhan kim et al, Automatic Generation of Example Oriented API Document, submitted to ASE2010)

  - Developer knows what libraries or packages should be used, but does not know how they should be used.

Library Helper (MSDN, JAVADOC) **+** Good Example **=** eXoa

On Going Work

- ## Type D
  - ❑ Developer knows both what libraries or packages should be used and how they should be used.
  - ❑ But, he want to detect similar codes for the purpose of as follows:
    - ■ Well-written source code reference
    - ■ Clone Detection
    - ■ Bug Detection, etc

| Source Code Repository | Structure Information Extraction | Indexing Technique | Scalable and Accurate Detection of Similar Codes |