

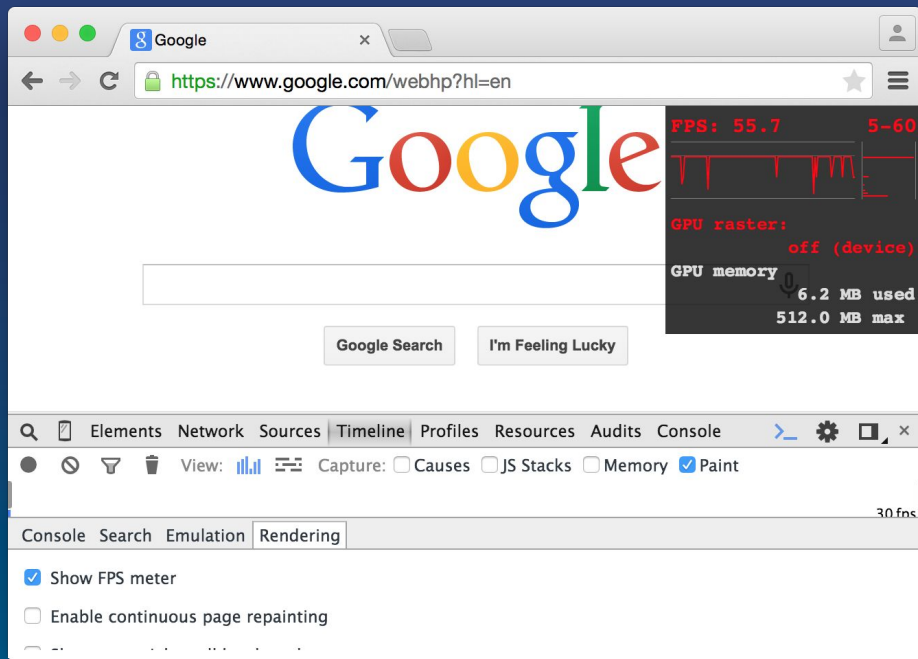


Get Productive on Unfamiliar Source Code

by Eberhard Gräther

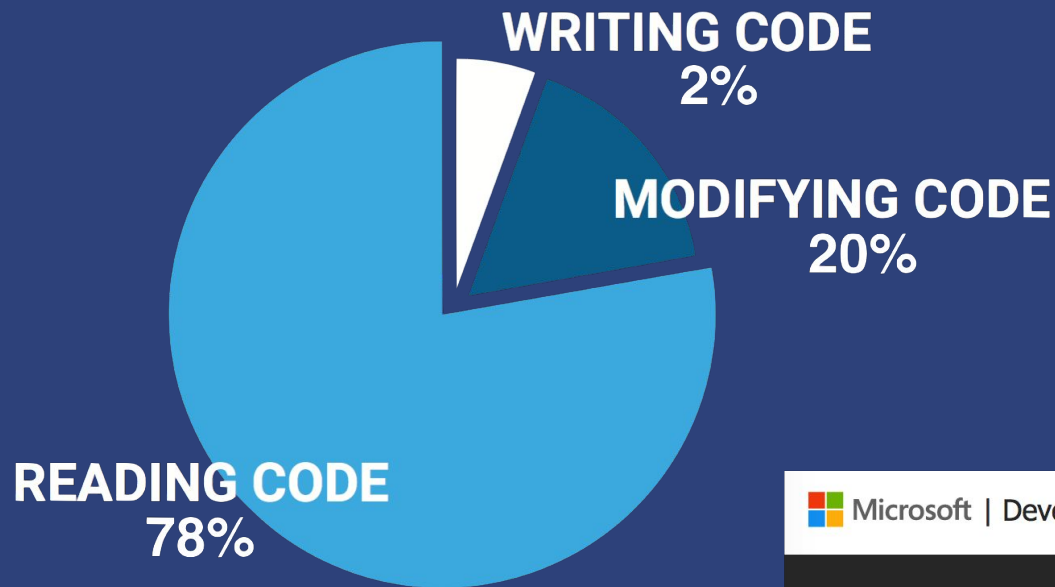


CHROME INTERNSHIP





DEVELOPMENT TIME



Microsoft | Developer

Peter Hallam's WebLog

* <https://blogs.msdn.microsoft.com/peterhal/2006/01/04/what-do-programmers-really-do-anyway-aka-part-2-of-the-yardstick-saga/>



CHROMIUM CODE SEARCH

compositor.h - Code Search

https://cs.chromium.org/chromium/src/ui/compositor/compositor.h?sq=package:chromium&dr=CSs&l=187

compositor

all (search all code)

[chromium] // src / ui / compositor / compositor.h

Files Outline

- test
- BUILD.gn
- DEPS
- OWNERS
- callback_layer_animation_observer.cc
- callback_layer_animation_observer.h
- callback_layer_animation_observer.cc
- canvas_painter.cc
- canvas_painter.h
- clip_recorder.cc
- clip_recorder.h
- closure_animation_observer.cc
- closure_animation_observer.h
- compositing_recorder.cc
- compositing_recorder.h
- compositor.cc
- compositor.h**
- compositor_animation_observer.h
- compositor_export.h
- compositor_lock.cc
- compositor_lock.h
- compositor_observer.h
- compositor_switches.cc

compositor.h

```
184 // displayable form of pixels comprising a single widget's contents. It draws an
185 // appropriately transformed texture for each transformed view in the widget's
186 // view hierarchy.
187 class COMPOSITOR_EXPORT Compositor : public cc::LayerTreeHostClient,
188                                     public cc::LayerTreeHostSingleThreadClient,
189                                     public CompositorLockDelegate,
190                                     public viz::HostFrameSinkClient {
191 public:
192   Compositor(const viz::FrameSinkId& frame_sink_id,
193             ui::ContextFactory* context_factory,
194             ui::ContextFactoryPrivate* context_factory_private,
195             scoped_refptr<base::SingleThreadTaskRunner> task_runner,
196             bool enable_surface_synchronization,
197             bool enable_pixel_canvas,
198             bool external_begin_frames_enabled = false,
199             bool force_software_compositor = false);
200 ~Compositor() override;
```

XRefs History Warnings

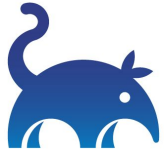
385 references to/from **Compositor**

Definitions (1 occurrence)

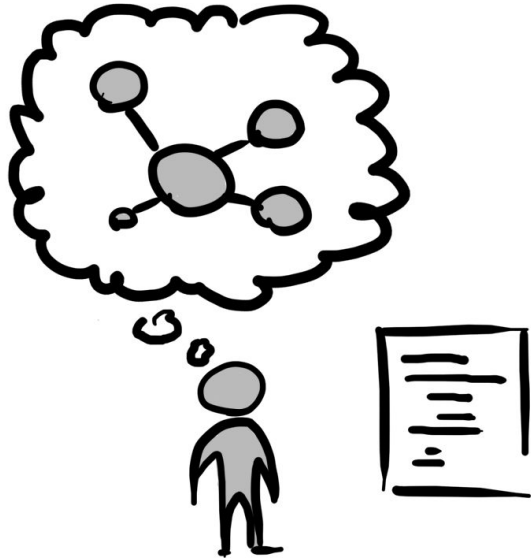
- src/ui/compositor/compositor.h (1 occurrence)
- 187 class COMPOSITOR_EXPORT Compositor : public cc::LayerTreeHostClient,

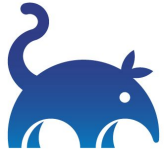
Declarations (17 occurrences)

- src/ui/compositor/compositor.h (1 occurrence)
- 72 class Compositor;
- src/ash/accessibility/focus_ring_layer.cc (1 occurrence)

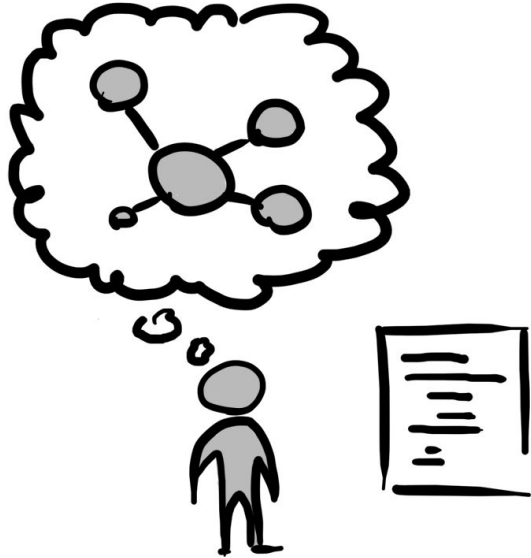


PROBLEM

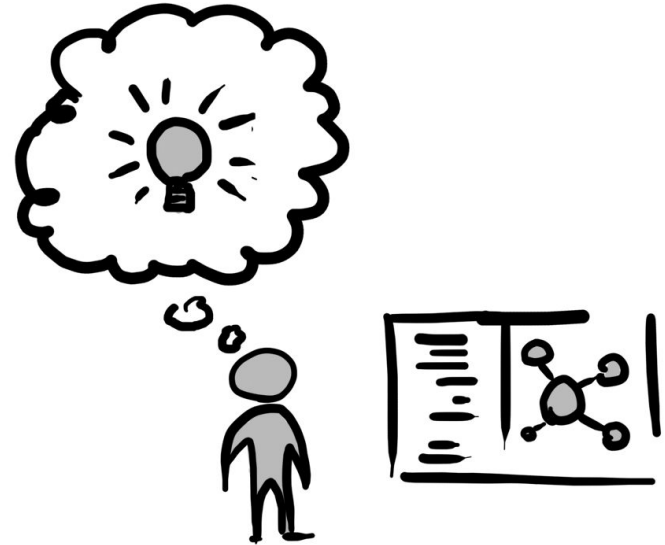




PROBLEM

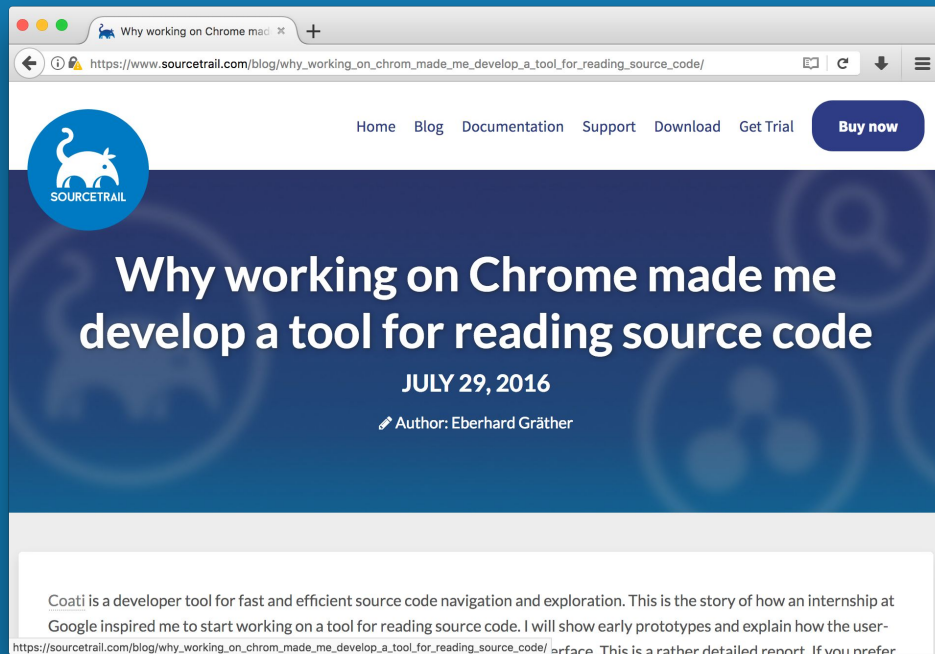


SOLUTION?





BLOG POST

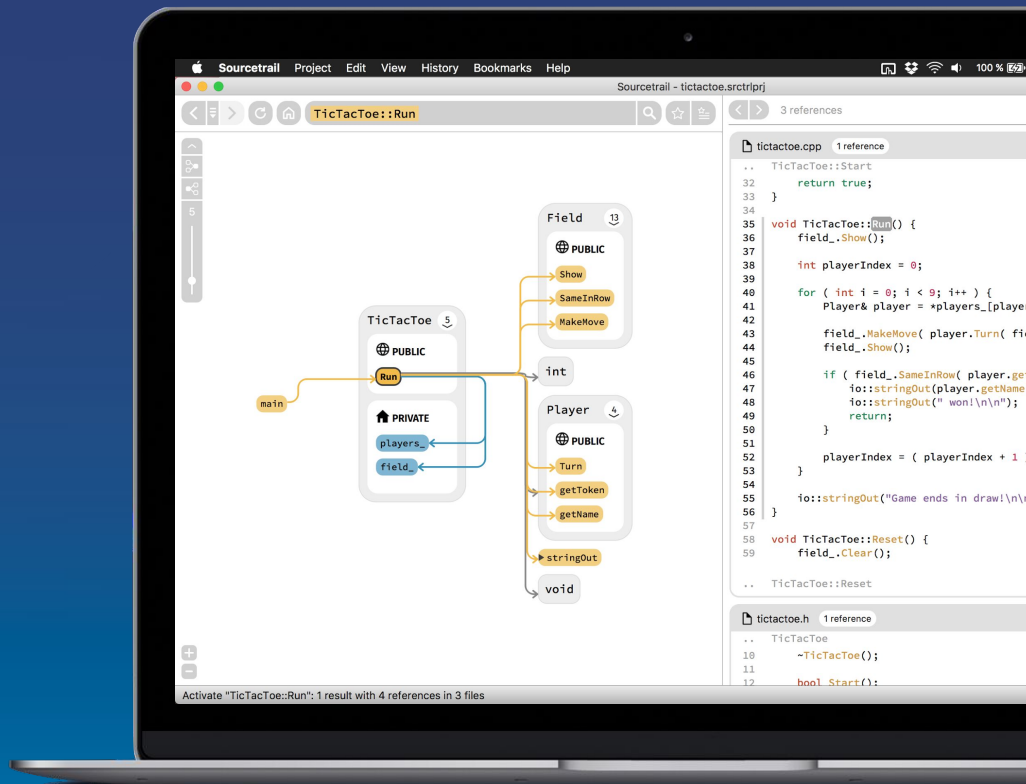


https://www.sourcetrail.com/blog/why_working_on_chrom_made_me_develop_a_tool_for_reading_source_code/



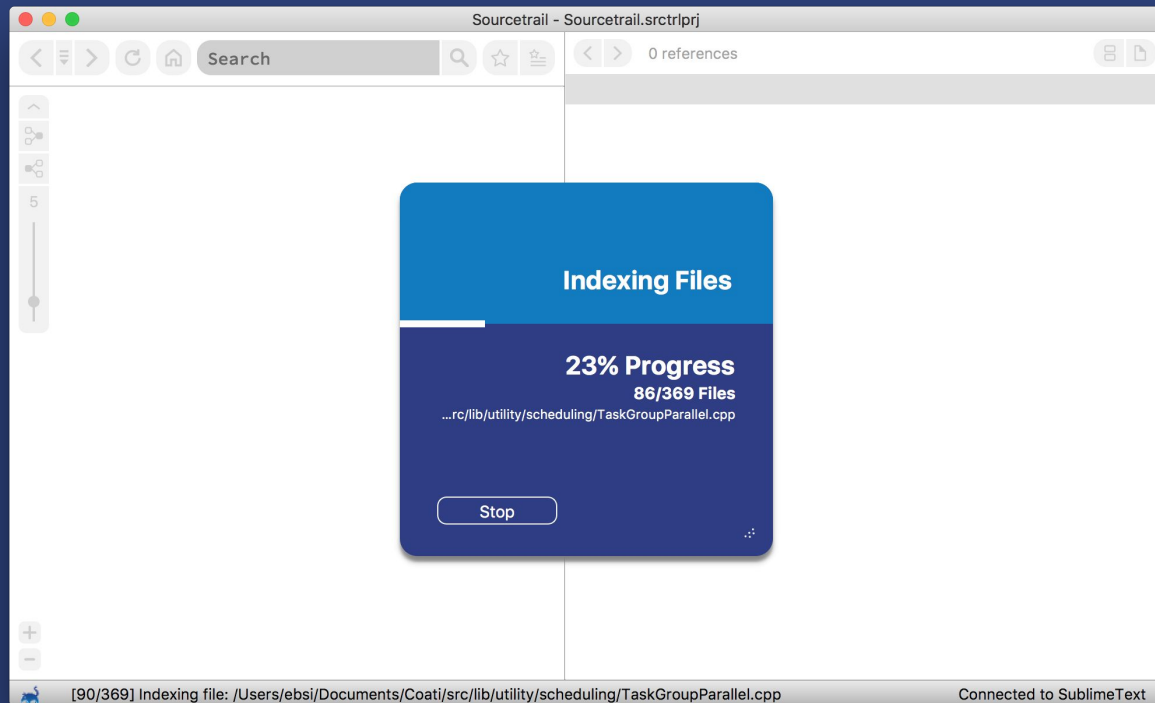
SOURCETRAIL

- standalone
- cross-platform:
Windows, macOS, Linux
- offline
- connects to Code
Editors and IDEs via
plugins





INDEXING

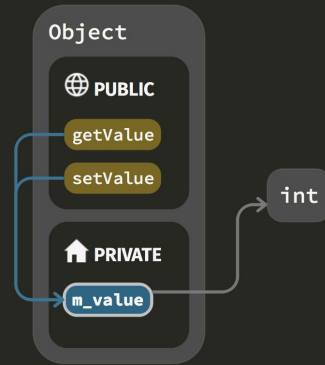




CLANG LIBTOOLING

```
1
2 class Object
3 {
4 public:
5     int getValue() const
6     {
7         return m_value;
8     }
9
10    void setValue(int value)
11    {
12        m_value = value;
13    }
14
15 private:
16     int m_value = 0;
17 };
18
```

```
TranslationUnitDecl <<invalid sloc>> <invalid sloc>
- CXXRecordDecl <test.cpp:2:1, line:17:1> line:2:7 class Object definition
- CXXRecordDecl <col:1, col:7> col:7 implicit class Object
- AccessSpecDecl <line:4:1, col:7> col:1 public
- CXXMethodDecl <line:5:2, line:8:2> line:5:6 getValue 'int (void) const'
  - CompoundStmt <line:6:2, line:8:2>
    - ReturnStmt <line:7:3, col:10>
      - ImplicitCastExpr <col:10> 'int' <LValueToRValue>
        - MemberExpr <col:10> 'const int' lvalue -> m_value
          - CXXThisExpr <col:10> 'const class Object *' this
- CXXMethodDecl <line:10:2, line:13:2> line:10:7 setValue 'void (int)'
  - ParmVarDecl <col:16, col:20> col:20 used value 'int'
    - CompoundStmt <line:11:2, line:13:2>
      - BinaryOperator <line:12:3, col:13> 'int' lvalue '='
        - MemberExpr <col:3> 'int' lvalue -> m_value
          - CXXThisExpr <col:3> 'class Object *' this
        - ImplicitCastExpr <col:13> 'int' <LValueToRValue>
          - DeclRefExpr <col:13> 'int' lvalue ParmVar 'value' 'int'
- AccessSpecDecl <line:15:1, col:8> col:1 private
- FieldDecl <line:16:2, col:16> col:6 referenced m_value 'int'
  - IntegerLiteral <col:16> 'int' 0
```



CODE

->

AST

->

GRAPH



SOURCETRAIL

search

graph

The screenshot displays the SourceTrail application window titled "SourceTrail - tictactoe.srctripj". The interface is divided into three main sections:

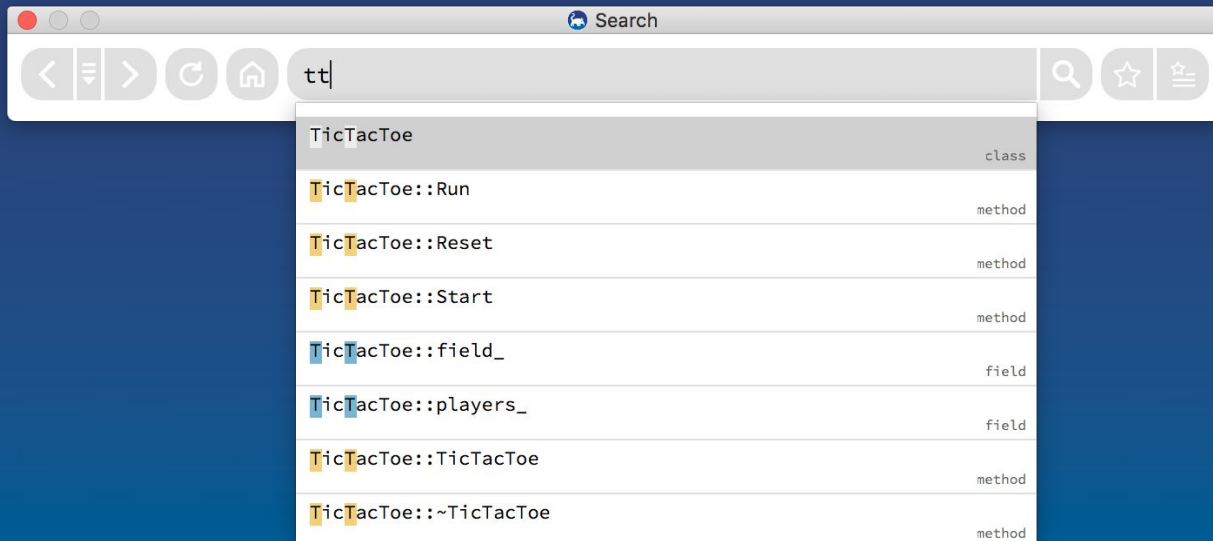
- Left Panel (Project Explorer):** Shows a hierarchical view of the project. The "TicTacToe" package is expanded, showing its "PUBLIC" and "PRIVATE" sections. The "Run" method is highlighted in the "PUBLIC" section.
- Center Panel (Call Graph):** Displays a call graph for the selected "Run" method. It shows the "main" function calling "Run", which in turn calls "Show", "SameInRow", and "MakeMove" methods of the "Field" class. The "Field" class is also expanded, showing its "PUBLIC" methods. The "Player" class is also visible, showing its "PUBLIC" methods.
- Right Panel (Code Editor):** Displays the source code for the "tictactoe.cpp" file. The "Run" method is highlighted in the code, corresponding to the selected method in the call graph. The code shows the implementation of the "Run" method, including a loop for player turns and a check for a win or draw.

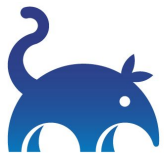
At the bottom of the window, a status bar indicates "Activate 'TicTacToe::Run': 1 result with 4 references in 3 files" and "Connected to SublimeText".

code

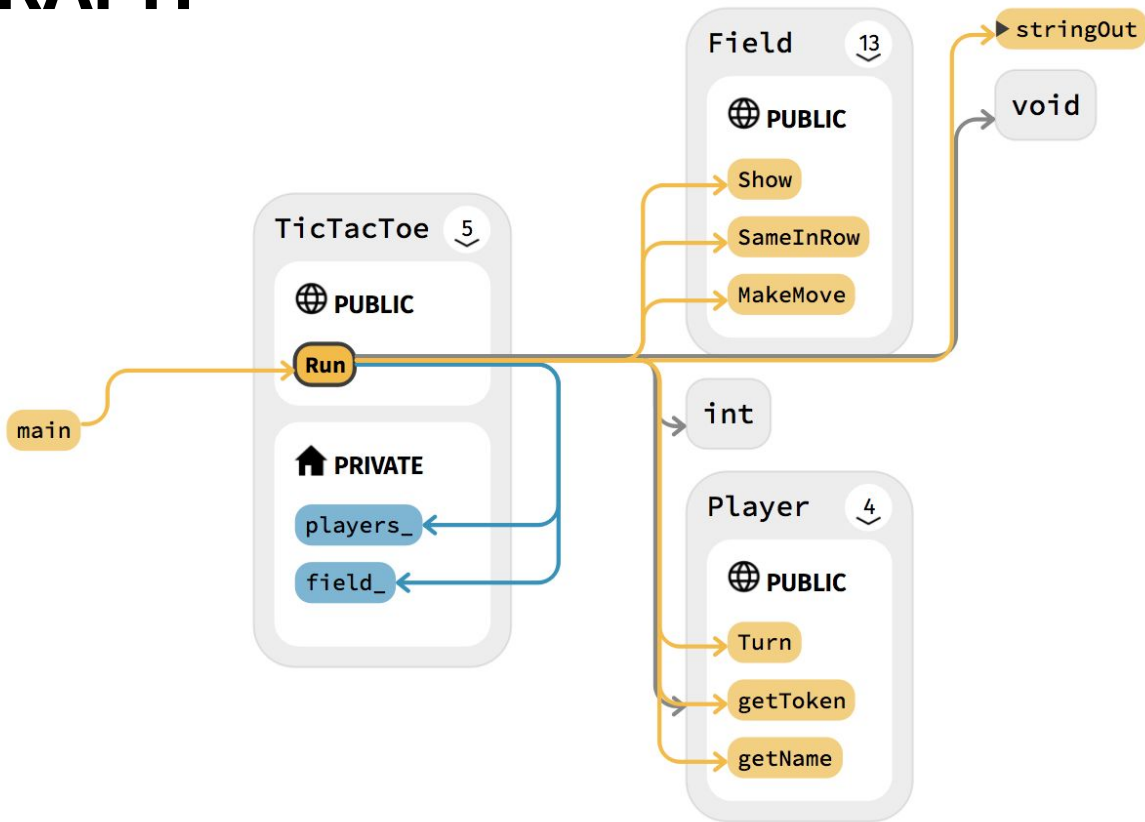


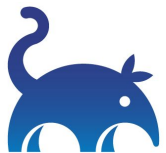
SEARCH



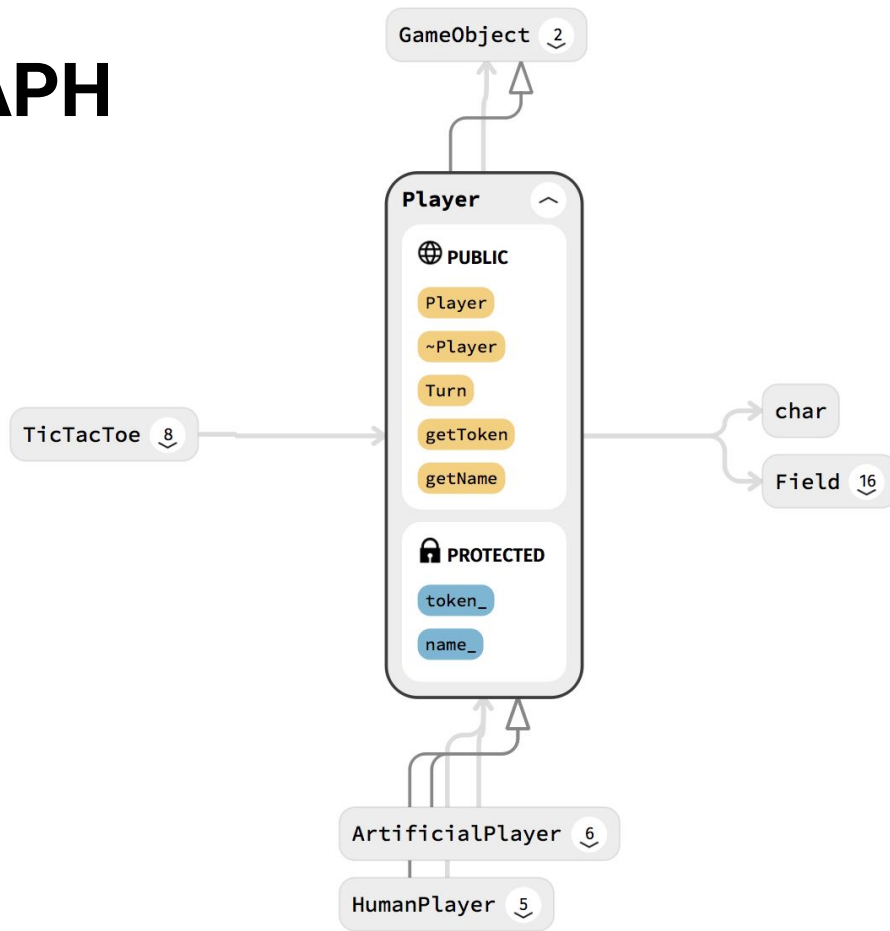


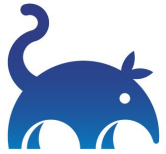
GRAPH



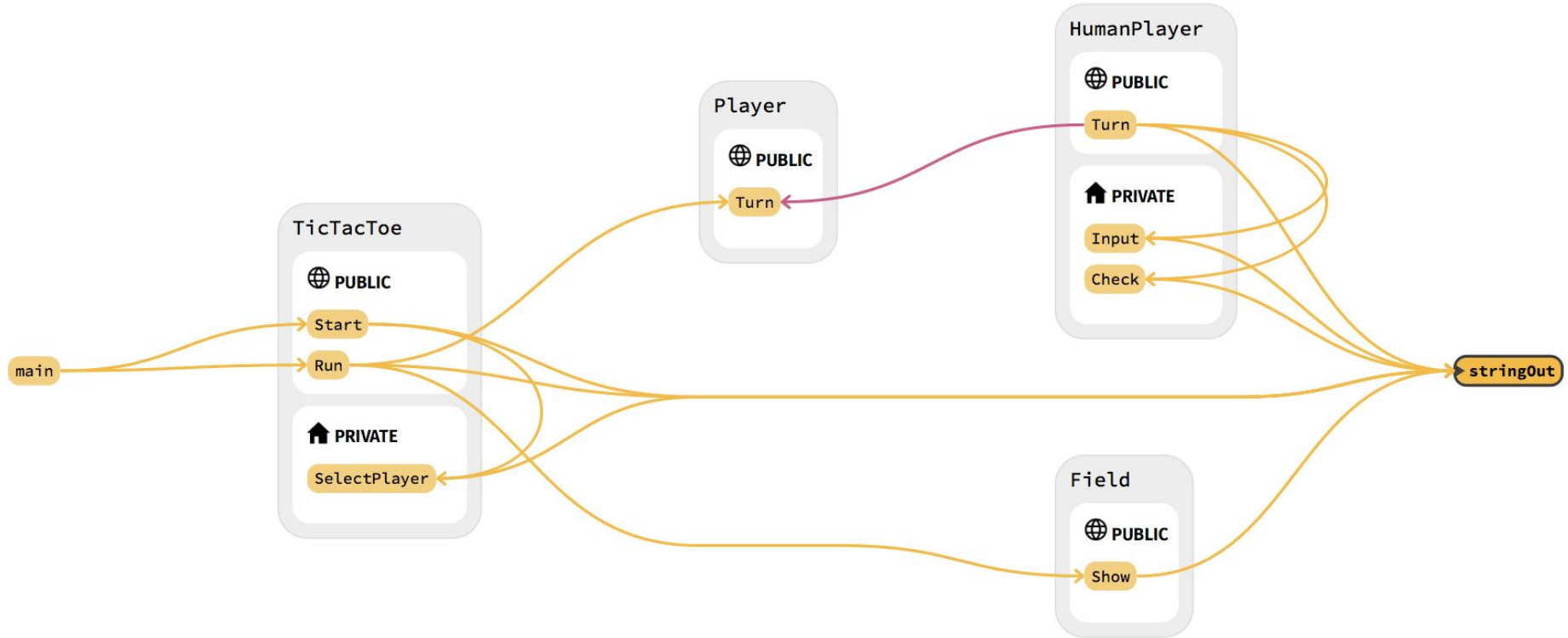


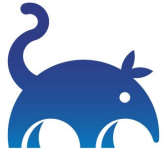
GRAPH



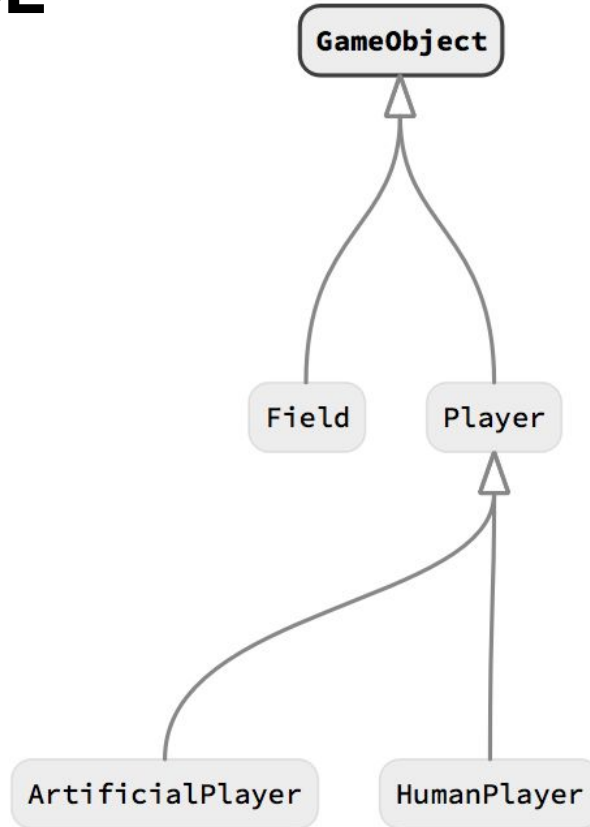


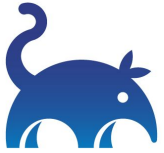
CALLGRAPH



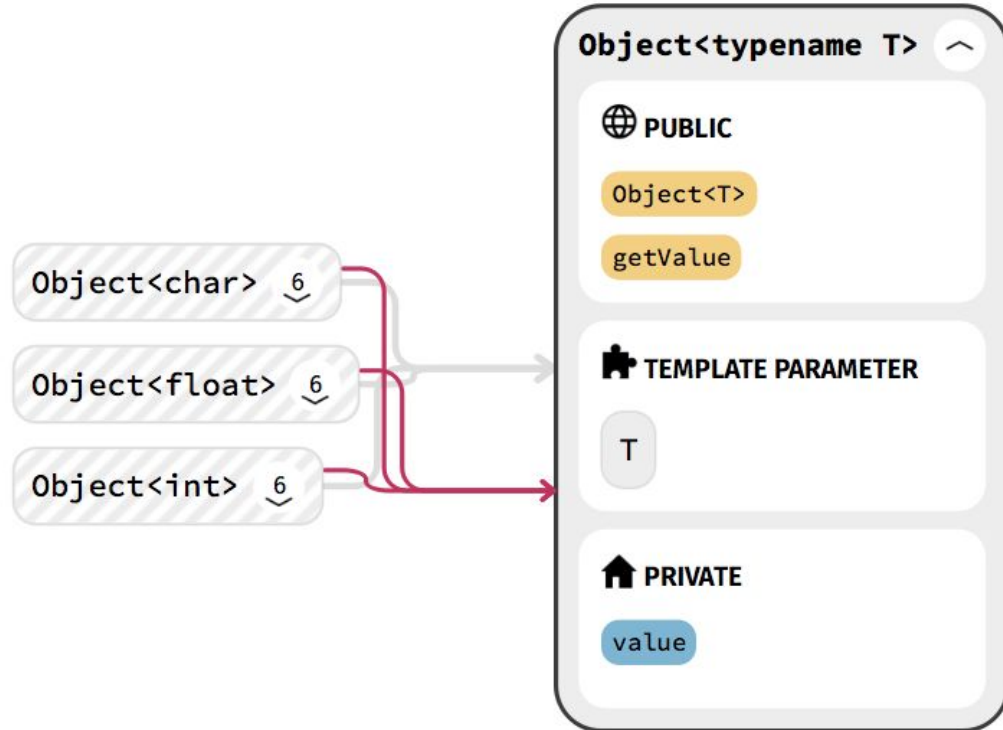


INHERITANCE TREE





TEMPLATE SPECIALIZATIONS





CODE

```
Code
3 references

player.cpp 1 reference
.. Player::getToken
13     return token_;
14 }
15
16 const char* Player::getName() const
17 {
18     return name_;
19 }

player.h 1 reference
.. Player
12     virtual Field::Move Turn( const Field& field ) const = 0;
13
14     const Field::Token& getToken() const;
15     const char* getName() const;
16
17 protected:
18     const Field::Token token_;
19
.. Player

tictactoe.cpp 1 reference
.. TicTacToe::Run
44     field_.Show();
45
46     if ( field_.SameInRow( player.getToken(), 3 ) ) {
47         io::stringOut( player.getName() );
48         io::stringOut( " won!\n\n" );
49         return;
50     }
```



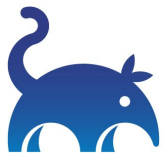
INTRO VIDEO

Now the graph view is showing us an overview of that symbol's relationships to other symbols.

1:27 / 4:47

CC YouTube

<https://www.youtube.com/watch?v=ST1AmwUN6rw>



USERS

“I was struggling to understand a huge legacy system my team was tasked with supporting. Sourcetrail helped us untangle the spaghetti code and its dependencies, letting us see what would be affected when we touched each function.”

Nelson Ferrari, USA

“Sourcetrail helps me getting a grip on a large unfamiliar codebase. It gives me a unique perspective on code between the big picture and the gory details which contemporary IDEs don't provide.”

Gilbert Röhrbein, Germany

THANK YOU!



Download at
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