



Product concepts for eng teams

Today we'll walk through several product concepts to get your
feedback

Smart Error Reporting

```
19 +         unclosed := c.getOpenConnections()
20 +         if unclosed > 5 {
21 +             rollbar.ErrorWithLevel(rollbar.WARN, fmt.Errorf("auth.Client detected %d unclosed HTTP responses", unclosed))
```



 **KiteBot** Pending  ...

For most effective Rollbar fingerprinting, the error message should be a constant string.

Suggested change ⓘ

```
21 -             rollbar.ErrorWithLevel(rollbar.WARN, fmt.Errorf("auth.Client
detected %d unclosed HTTP responses", unclosed))
21 +             rollbar.ErrorWithExtrasAndContext(ctx, rollbar.WARN,
errors.New("auth.Client detected unclosed HTTP responses in GoTick"),
map[string]interface{}{
22 +                 "unclosed": unclosed
23 +             })
```

```
30 +         err := c.RefreshLicenses(ctx)
31 +         if err != nil && err != errUserNotAvailable {
32 +             log.Printf("scheduled license refresh error: %v", err)
```

 **KiteBot** Pending  ...

Did you want to report this error to Rollbar?

Suggested change ⓘ

```
32 -             log.Printf("scheduled license refresh error: %v", err)
32 +             log.Printf("scheduled license refresh error: %v", err)
33 +             rollbar.ErrorWithExtrasAndContext(ctx, rollbar.ERR,
errors.New("scheduled license refresh error in GoTick"), map[string]interface{}{
34 +                 "err": err,
35 +                 "c.lastLicenseCheck": c.lastLicenseCheck,
36 +                 "licenseCheckInterval": licenseCheckInterval,
37 +             })
```

Automatically instrument new code with error handling and reporting (logs, Rollbar, Sentry, etc)

Both in the IDE and in code review

Dynamic Logs

Dynamic Logs -- feature flag your logs

- Dynamically (== without a redeploy) enable or disable log messages in running services using fine grained feature flags, e.g:
 - Per user or group of users
 - Based on features or parts of the code base

```

71 func handleFile(srcFilename string, dstFilename string, buildHash string, runTS int64) {
72     zReader, err := fileutil.NewReader(srcFilename)
73     if err != nil {
74         log.Printf("Error reading data file %s", srcFilename)
75         return
76     }
77     defer zReader.Close()
78     gr, err := gzip.NewReader(zReader)
79     if err != nil {
80         dynamiclog.Printf("Error reading gzip data in file %s", srcFilename)
81         return
82     }
83     defer gr.Close()
84
85     outf, err := fileutil.NewBufferedWriter(dstFilename)
86     if err != nil {
87         dynamiclog.Printf("Error opening file %s for writing, %v", dstFilename, err)
88         return
89     }
90     defer outf.Close()
91     writer := json.NewEncoder(outf)
92
93     scanner := bufio.NewScanner(gr)
94
95     for scanner.Scan() {
96         var input Input
97         err = json.Unmarshal(scanner.Bytes(), &input)
98         if err != nil {
99             dynamiclog.Printf("Error parsing JSON from %s, %v", srcFilename, err)
100         }
101         score, err := monetizable.Score(input.Inputs)
102         if err != nil {
103             dynamiclog.Printf("Error computing score, %v", err)
104         }
105     }

```

Enable log



Disable log

View logs for a user

View logs for this function

See error from your telemetry or reported by a user

#5590 error downloading kite plugin zip: Get "https://p

Go to code, enable relevant logging

```
// using the same URL as the IDEs do, this is slightly different from the official JetBrains documentation.  
// The URL redirects to a CDN.  
// The kited bootstrapping is already setting up the default client's proxy.  
machineID, _ := machine.IDIfSet()  
downloadURL := downloadPluginURL(ideBuild, machineID)  
  
dynamiclog.Printf("machineID: %d, ideBuild: %s, downloadURL: %s", machineID, ideBuild.ProductID, downloadURL.String())
```

Enable log

Disable log

View logs for a user

View logs for this function

See live logs from this log statement

```
machineID: a239b392a09abf29, ideBuild:PC-202.7319.64, downloadURL: https://plugins....  
machineID: a239b392a09abf29, ideBuild:PC-202.7319.64, downloadURL: https://plugins...  
machineID: a239b392a09abf29, ideBuild:PC-202.7319.64, downloadURL: https://plugins...
```

Dynamic Logs -- feature flag your logs

- Dynamically (== without a redeploy) enable or disable log messages in running services using fine grained feature flags, e.g:
 - Per user or group of users
 - Based on features or parts of the code base
- Code-first UX to control logging
- Intelligent logging decisions
 - Dynamically increase or decrease logging verbosity
 - E.g given a budget, automatically scale up/down logging volume globally
 - Focus your logging to problem areas
 - One-click access to logs from, functions, users, etc from running services

Log Debugger

My IDE

```
5 |.case pythontype.ExplicitFunc, pythontype.BoundMethod:
4 |.|.// NOTE(juan): this should no longer happen?
3 |.|.return s.renderFunctionDetail(ctx, newValueBundle(ctx, vb.val, vb.indexBundle),
2
1 |.default:
682 |.|.log.Printf("got unexpected type: %T", v)
1 |.|.return nil
2 |.|}
3 |}|
4
5 func (s *editorServices) renderTypeDetail(ctx kitectx.Context, vb valueBundle) *edi
6 |.ctx.CheckAbort()
7
8 |.// get a symbol if vb is external
9 |.var vbSym pythonresource.Symbol
10 |.// get base class bundles
11 |.var bbs []valueBundle
12 |.switch v := vb.val.(type) {
13 |.case pythontype.ExplicitType:
```

Logs for request ecc7003c-aa10-498e-8082-8ebbe1fe87b2

```
> GET /completions
| completions requested for language: Python
> File github.com/kiteco/kiteco/kite-go/lang/python/complete/api.go line 119 in C
| code index not found: regenerating
> Dispatched thread 1103
> File github.com/kiteco/kiteco/kite-go/lang/python/index/index.go line 177
+-- 2 lines: -
> Thread 1103 returned
> File github.com/kiteco/kiteco/kite-go/lang/python/resolve.go line 301 in Find
| got unexpected type: tuple
```

Jump from code to logs

View logs in the context of the call tree

Group logs from asynchronous tasks

Hide irrelevant information

Jump from logs to code

```
case pythontype.ExplicitFunc, pythontype.BoundMethod:
    // NOTE(juan): this should no longer happen?
    return s.renderFunctionDetail(ctx, newValueBundle(ctx, vb.val, vb.indexBundle), typeSymbol)

default:
    log.Printf("got unexpected type: %T", v)
    return nil
}
```

View logs

View call graph

Quickly view all
production logs
generated by a line of
code

- us_west_easy::2021-01-23:08:37.000z: got unexpected type tuple
- us_west_easy::2021-01-23:08:51.000z: got unexpected type list
- us_west_easy::2021-01-24:08:37.000z: got unexpected type dict
- us_west_easy::2021-01-25:08:33.000z: got unexpected type tuple
- us_west_easy::2021-01-26:08:42.000z: got unexpected type str
-

Quickly view all call
graphs that could
have generated this
log

Clicking on a call
graph displays
production logs that
have occurred in the
graph

- api.go:#L34
 - endpoints.go#L67
 - render.go#L78
 - render_function.go#L56
- sidebar.go:#L34
 - render_docs.go#L67
 - render.go#L78
 - render_function.go#L56

Code Navigation & Search

Related Code Navigation: any identifier, line of code, or block of code can be a search query

Find relationships across languages

main.css

```
20 .indent-subsection {  
21   margin-left: 2em;  
22 }
```

See 2 usages in React

See 2 usages in Jinja

Find relationships based on string literal contents

youtube_channels.tmpl.sql

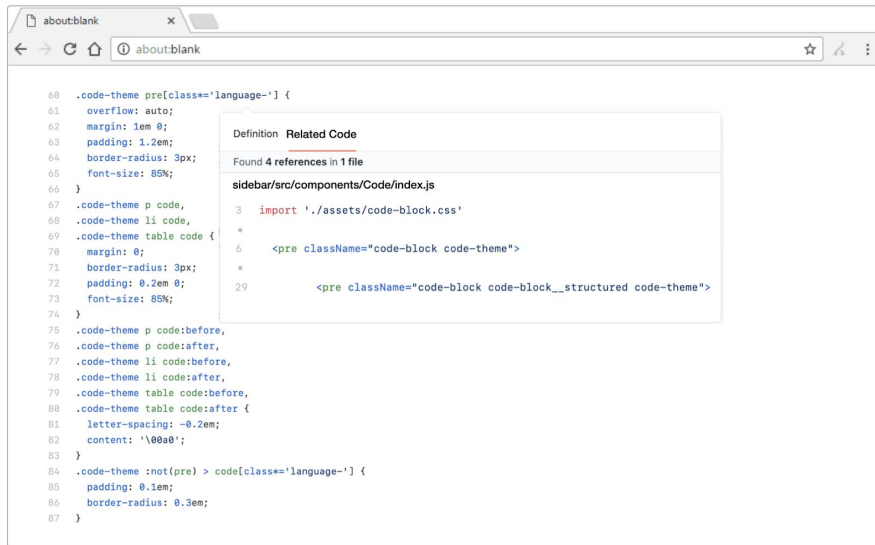
```
10 LOCATION  
11 's3://kite-youtube-data/channels/'
```

See 8 references to S3 bucket

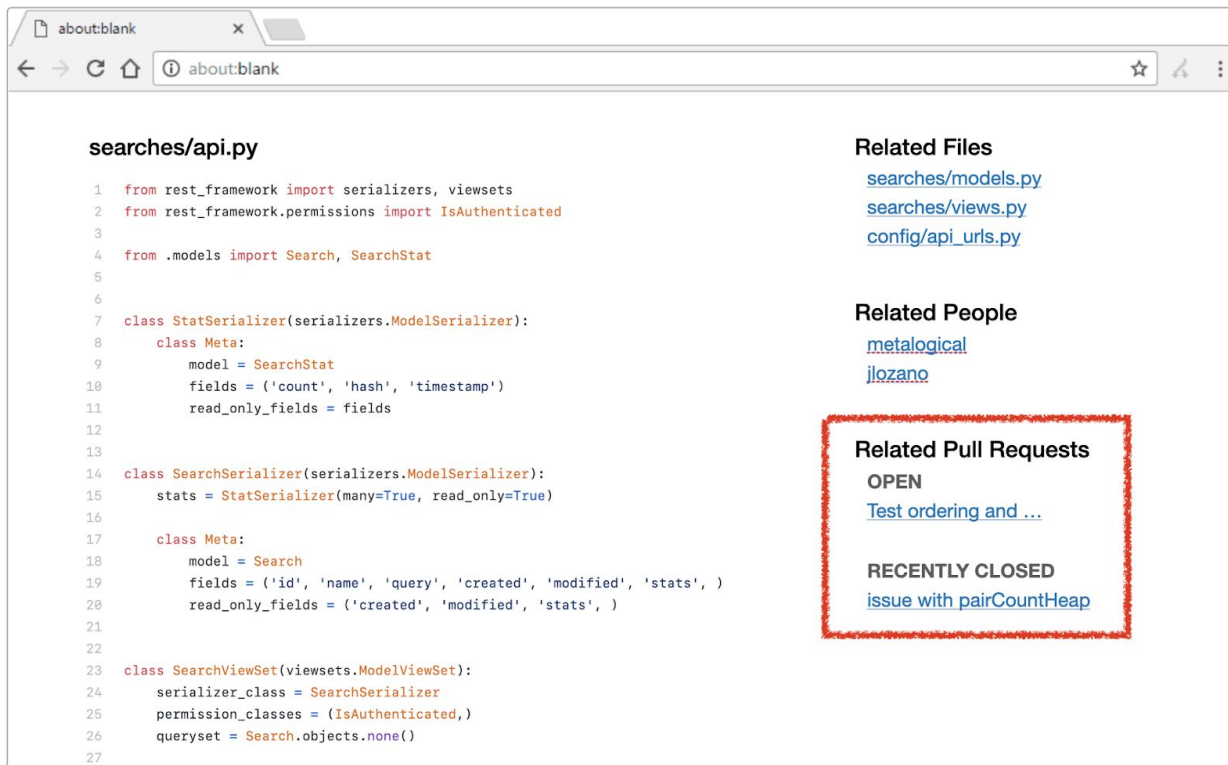
See 2 references to S3 directory

Find relationships across repos, e.g. API usages

Use Related Code to navigate within your browser or IDE



Also navigate to: Related files, people, and pull requests



The screenshot shows a web browser window with a single tab titled 'about:blank'. The address bar also displays 'about:blank'. The main content area is divided into two sections. On the left, under the heading 'searches/api.py', is a Python code editor showing the following code:

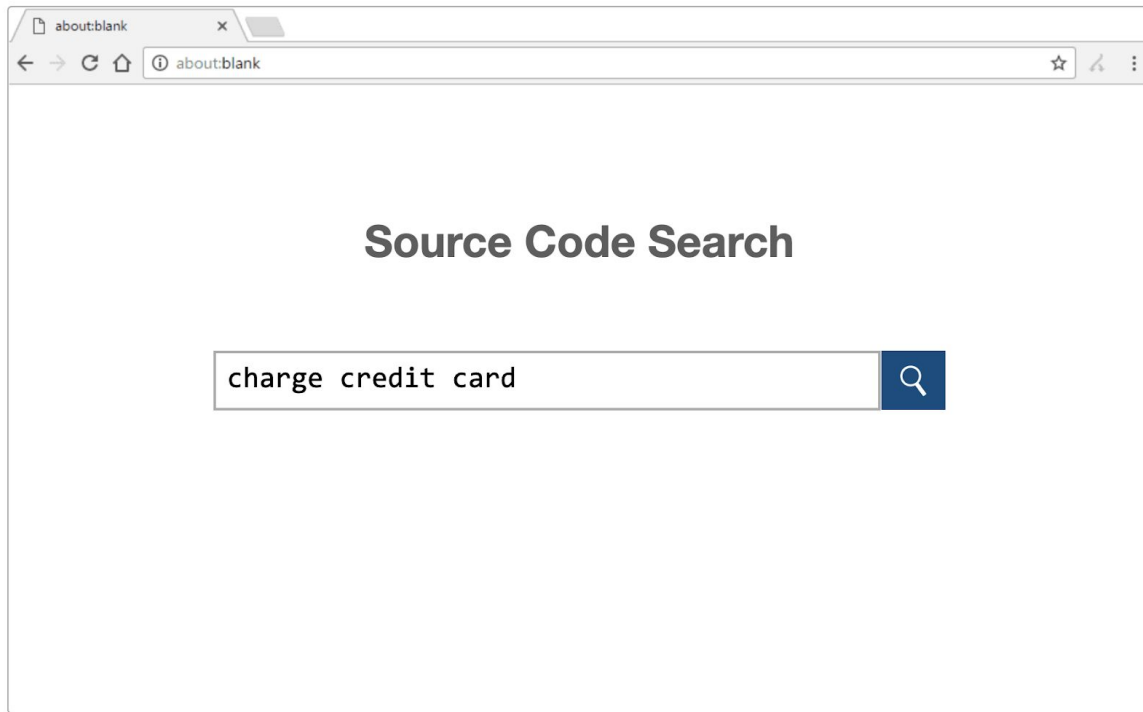
```
1 from rest_framework import serializers, viewsets
2 from rest_framework.permissions import IsAuthenticated
3
4 from .models import Search, SearchStat
5
6
7 class StatSerializer(serializers.ModelSerializer):
8     class Meta:
9         model = SearchStat
10        fields = ('count', 'hash', 'timestamp')
11        read_only_fields = fields
12
13
14 class SearchSerializer(serializers.ModelSerializer):
15     stats = StatSerializer(many=True, read_only=True)
16
17     class Meta:
18         model = Search
19         fields = ('id', 'name', 'query', 'created', 'modified', 'stats', )
20         read_only_fields = ('created', 'modified', 'stats', )
21
22
23 class SearchViewSet(viewsets.ModelViewSet):
24     serializer_class = SearchSerializer
25     permission_classes = (IsAuthenticated,)
26     queryset = Search.objects.none()
27
```

On the right side of the editor, there are three sections of navigation links:

- Related Files**
 - [searches/models.py](#)
 - [searches/views.py](#)
 - [config/api_urls.py](#)
- Related People**
 - [metallogical](#)
 - [jlozano](#)
- Related Pull Requests**
 - OPEN**
 - [Test ordering and ...](#)
 - RECENTLY CLOSED**
 - [issue with pairCountHeap](#)

The 'Related Pull Requests' section is highlighted with a red dashed border.

Search your company's code using natural language keywords



Anything -> Code

Log message

Github issue

Stack Trace

Product Metrics

Airflow DAG

Makefile

etc

Kite IDE Plugin
or
Kite Chrome App

Smart grouping
and clustering to
ease readability

signup

- [pages/signup.js#L36](#)
- [pages/landing.js#L109](#)
- [pages/referred.js#L78](#)

load more

login js

- [pages/login.js#L72](#)

load more

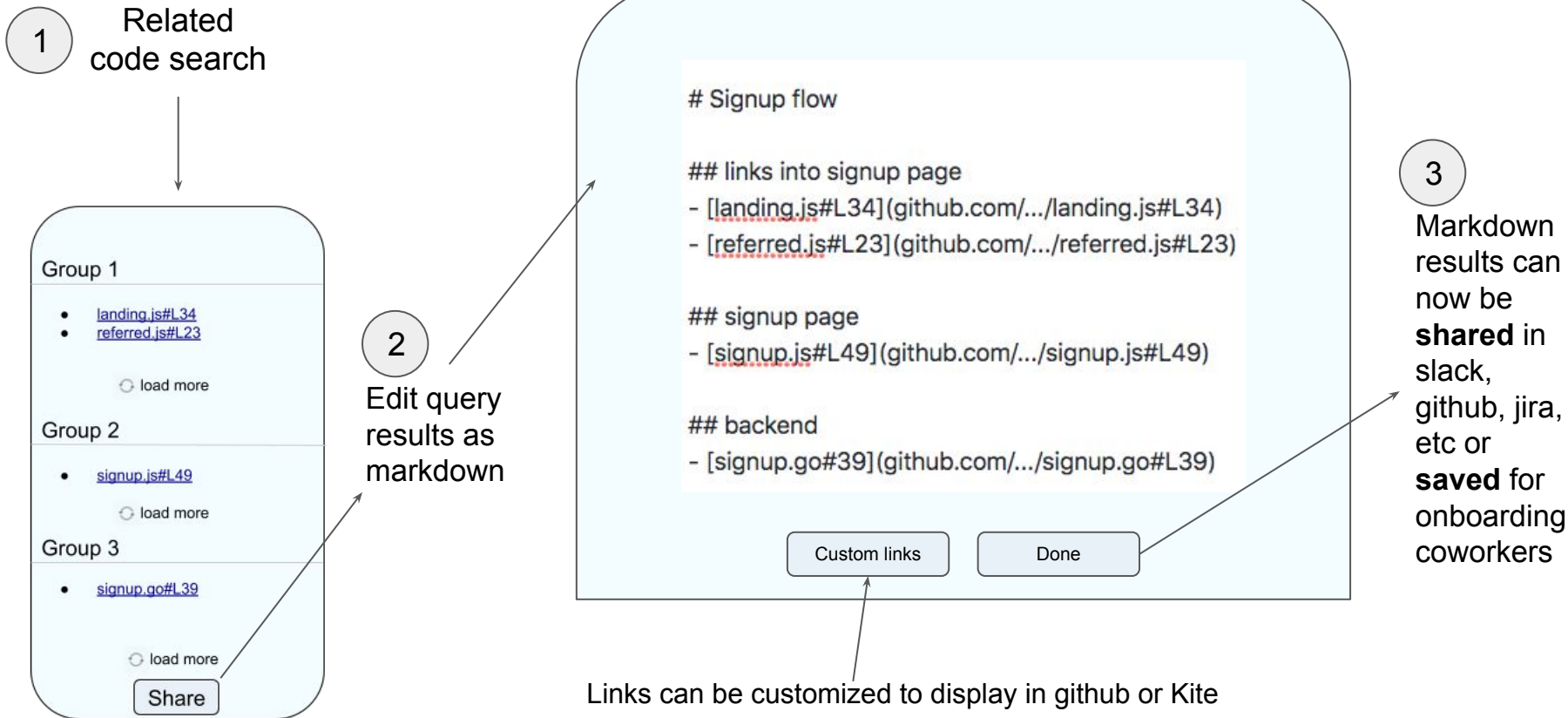
login go

- [handlers/login.go#L34](#)
- [users/db.go#L45](#)
- [users/authenticate.go#L43](#)

load more

Navigate directly to the
relevant line in your
IDE or browser

Save or share query results with coworkers



Other use cases

- Query alerts to keep you informed when someone is changing a sensitive part of the codebase

Product Concepts — Please Rank & Share Why

1. Smart Error Reporting (more logging)
2. Dynamic Logs
3. Log Debugger
4. Code Navigation & Search

Code Search Concept List

1. Regex search
2. Natural language keyword search
3. Semantically browsable code results
4. Shareable query results
5. Save query results for onboarding
6. Query alerts to inform you when someone is modifying sensitive areas of the code base

Code Search Use Case List

1. Find and navigate all code related to a stack trace
2. Find and navigate all code related to a github issue
3. Find and navigate code paths related to a log message
4. Find and navigate all code related a product metric or list of product metrics
5. Find and navigate all code related to a particular workflow
(airflow,makefile,etc)
6. Share query results with coworkers
7. Save query results to onboard people to unfamiliar parts of the codebase
8. Query alerts to keep you informed when someone is changing sensitive parts of the codebase