



# AEM SEARCH DEMYSTIFIED

Adobe Summit 2017 | L4080

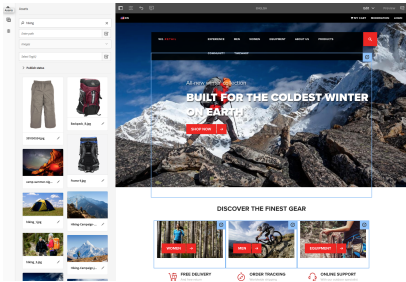
# SUMMIT

**Bē**  
Sergey Shchapov

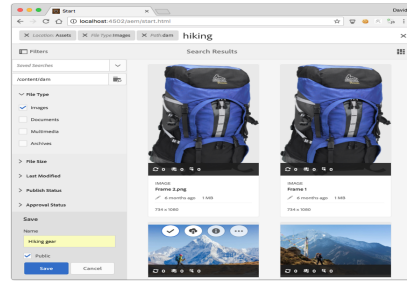
- 1 | Welcome and overview
- 2 | A brief overview of search
- 3 | The lab
- 4 | The application
- 5 | Q & A

Google

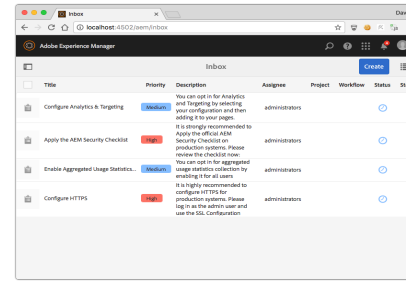
# Search is used all over AEM.....



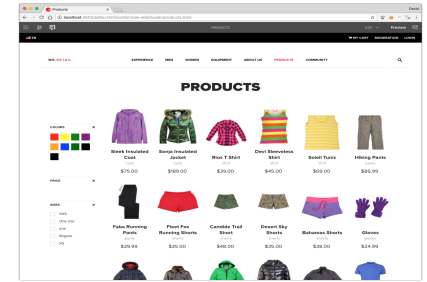
Page Editor



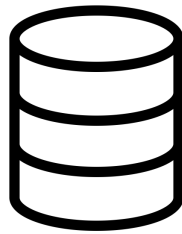
Omnisearch



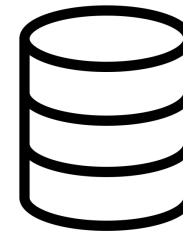
Inbox



End user search



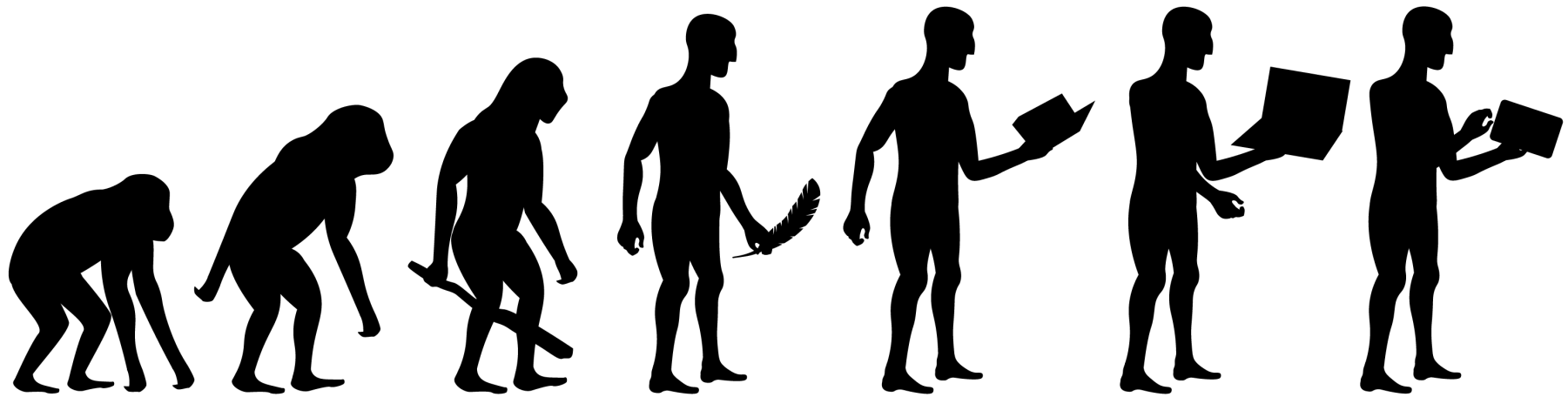
author



publish

Database image courtesy of Creative Outlet

# Evolving Search in your deployments



full text

pagination

analyzers

similarity

filtering

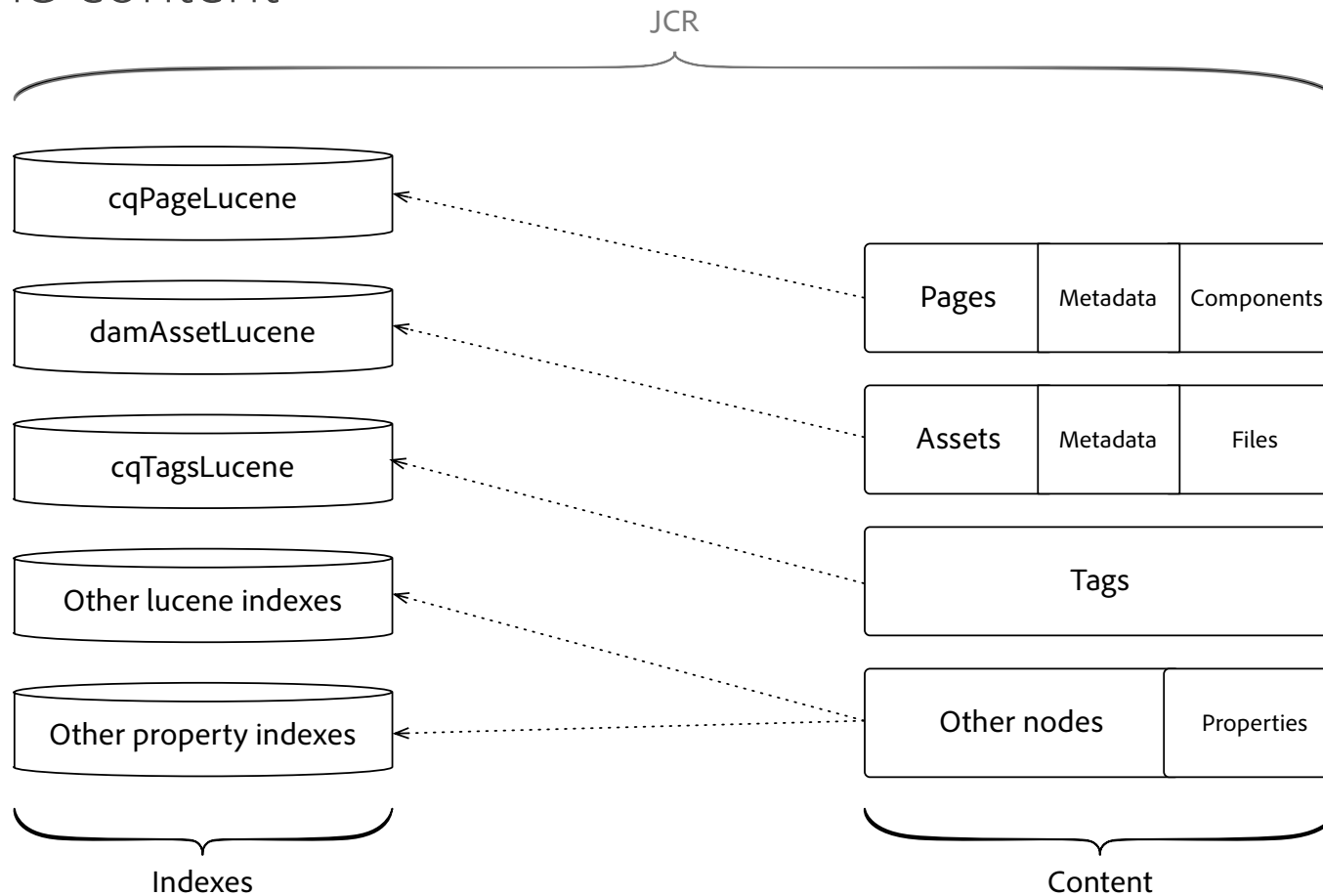
suggestions

boosting

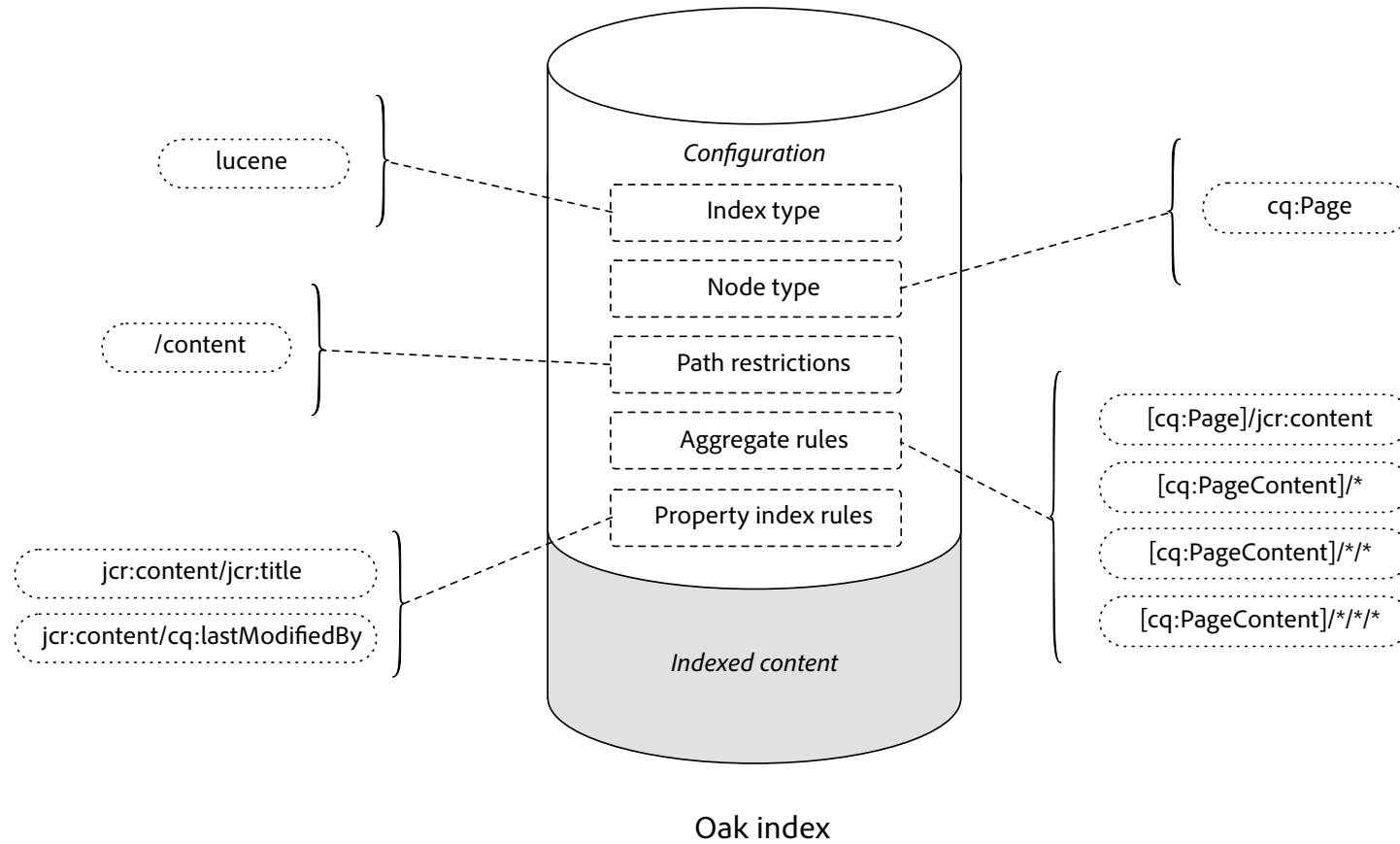


# A brief overview of search

# Indexes and content

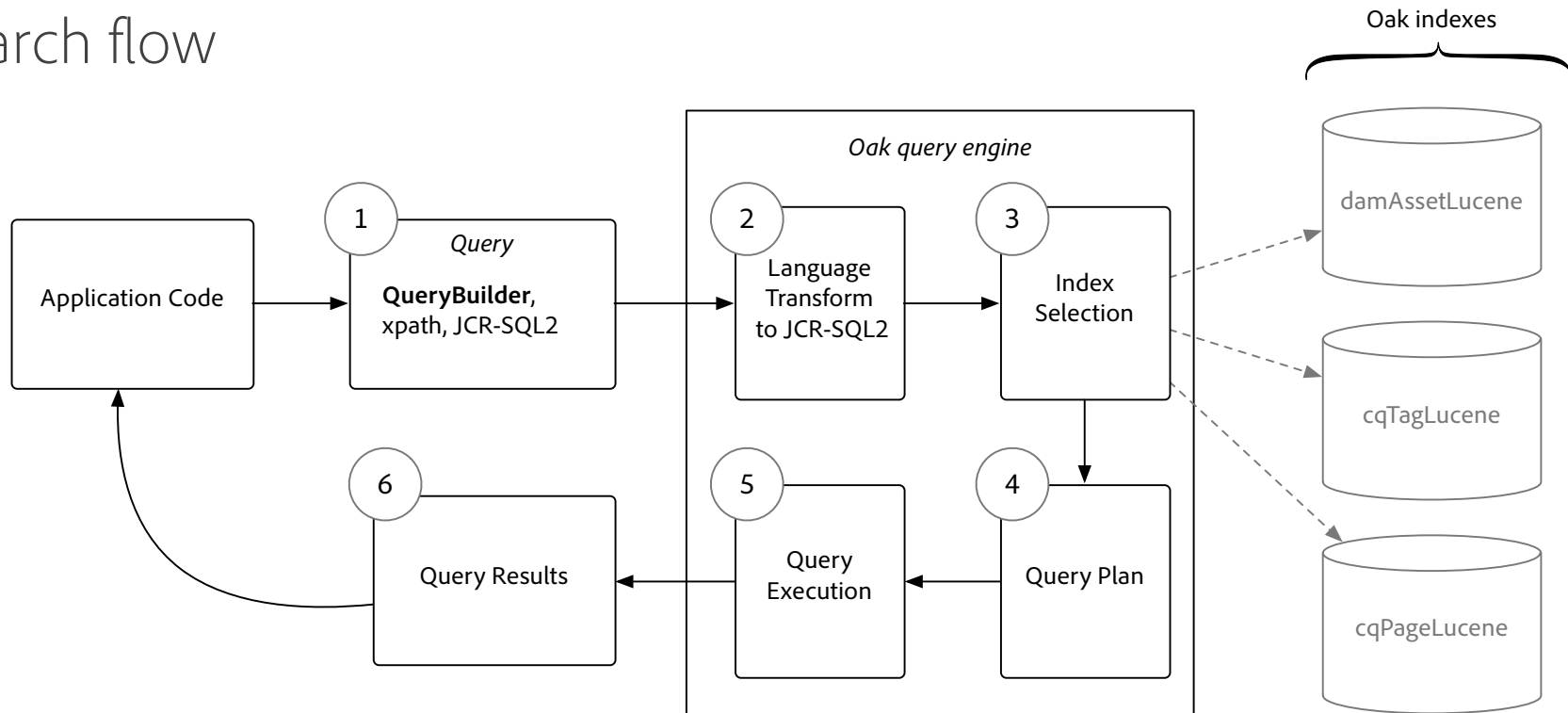


# Anatomy of an (lucene) index





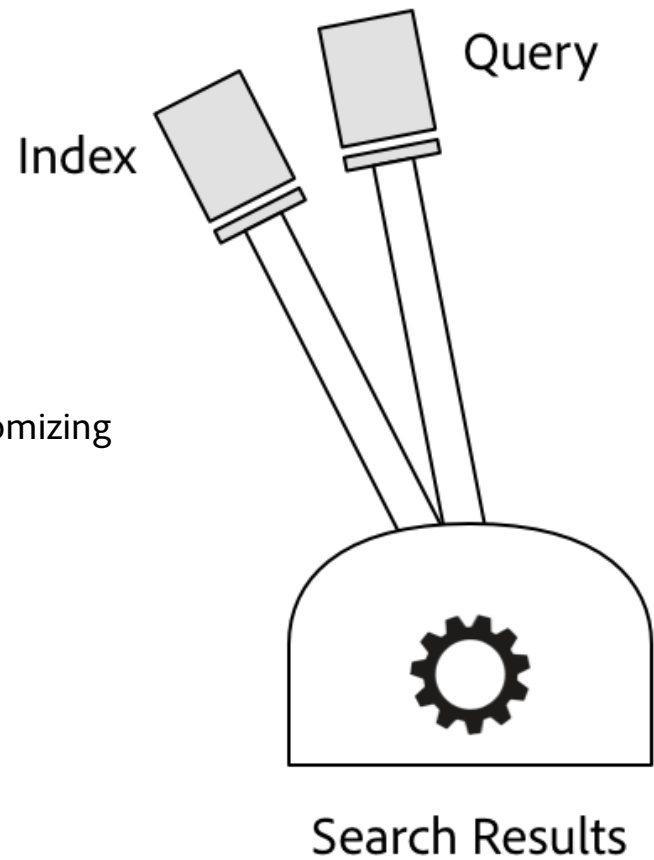
# Search flow



1. Application code creates query
2. Query automatically translated and optimized to JCR-SQL2
3. Oak chooses best index(es) to satisfy query

4. Oak query plan generated
5. Oak executes query plan
6. Results returned to application

# Search configuration levers



- 2 mechanisms for customizing keyword search
- Modify Query
- Update Oak Indices



# The lab

# The Lab

## Goal

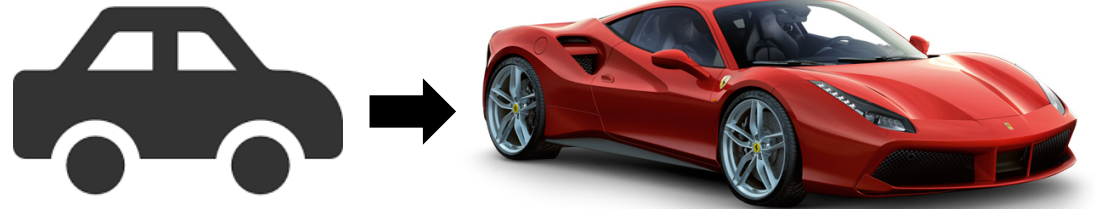
- Simple search -> Robust multi-featured Search component

## Environment

- AEM Author environment 6.3 (*pre-release load*)
- Simple search component
- ~3,300 pages of content

## Lab Materials

- Workbook – chapter based
- Bookmarks in browser
- Solution packages



Ferrari image courtesy of <http://www.caranddriver.com/ferrari>



PSA's

# Public Service Announcement #1

Re-indexing rarely (*~never*) solves problems with search or indexes!

In this lab, we re-indexed frequently to see incremental changes.

In real life, minimize the number and frequency of re-indexing, and execute them during maintenance periods (*works well as they normally coincide w application deployments*)

## Public Service Announcement #2

Managing index configurations directly AEM is bad!

In this lab, we made changes to index configurations directly via CRXDE Lite for convenience.

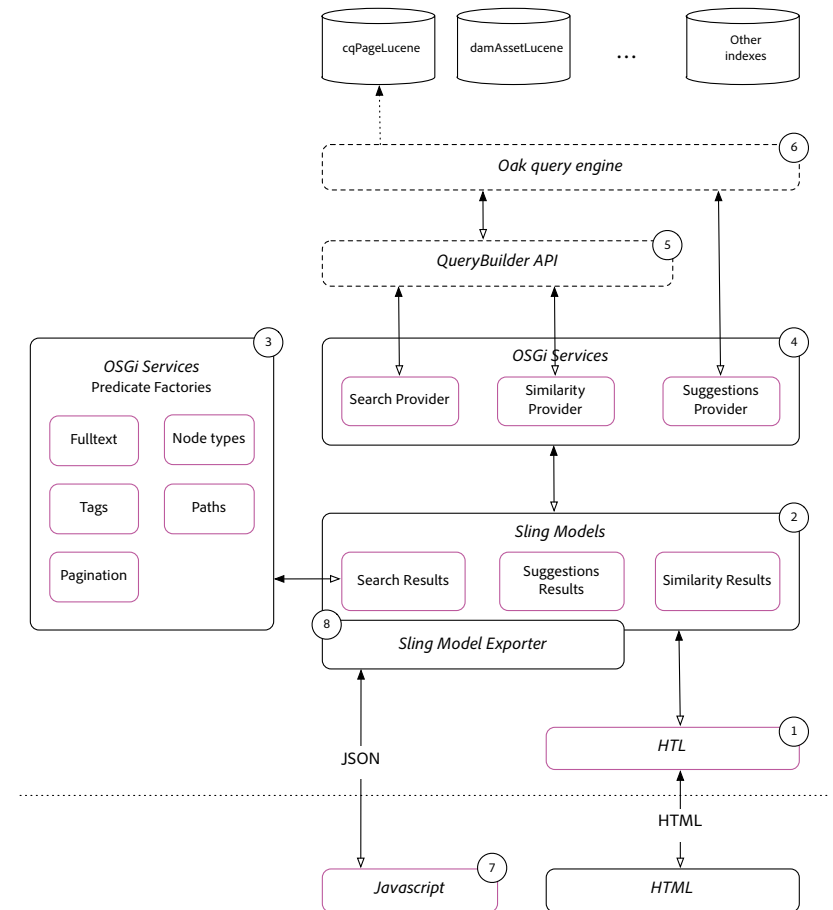
In real life, treat your index configurations as code, and keep them safe in SCM as part of the AEM application content package.

# The application



# Search application overview

1. **HTL** defines the **HTML** presentation layer, and uses **Sling Models** to obtain the the results to display.
2. The **Sling Models** are Java data models that represent results.
3. The **Predicate Factory OSGi services** collect and sanitize query parameters from the HTTP Request or the configured resources.
4. Each **Provider OSGi service** is engages with AEM (QueryBuilder or Oak) to obtain results.
5. **QueryBuilder** converts the provided query parameters to a Xpath query and executes the query.
6. **Oak query engine** selects the best index for the query and collects results
7. Custom **JavaScript** makes AJAX calls to collect JSON results
  - a. #2-6 in the above flow is invoked
8. The **Sling Model Exporter** framework serializes the **Sling Model** results into JSON, for DOM injection by the **JavaScript**
  - a. Powers Suggestions and Quick Links



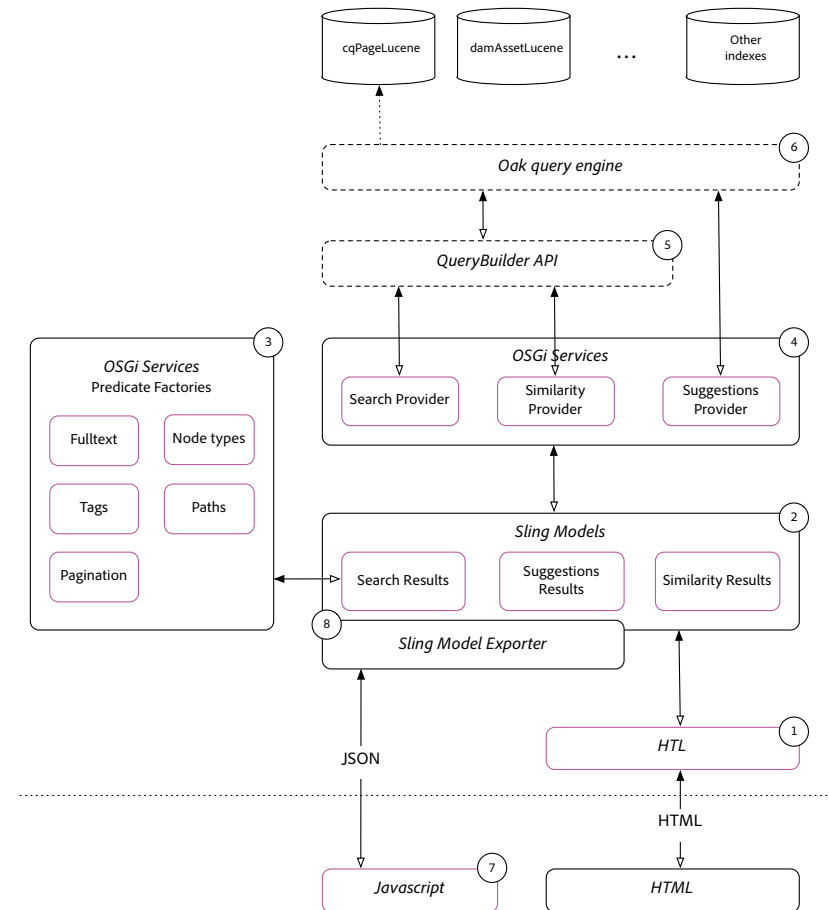
# Search application code index

## Code available at

- [github.com/Adobe-Marketing-Cloud/aem-guides/tree/master/simple-search-guide](https://github.com/Adobe-Marketing-Cloud/aem-guides/tree/master/simple-search-guide)

## Code index

1. /apps/simple/components/content/search
2. com.adobe.aem.sample.simple.search
  1. <https://sling.apache.org/documentation/bundles/models.html>
3. com.adobe.aem.sample.simple.search.predicates
4. com.adobe.aem.sample.simple.search.providers
5. <http://docs.adobe.com/docs/en/aem/6-2/develop/search/querybuilder-api.html>
6. <http://jackrabbit.apache.org/oak/docs/query/query-engine.html>
7. /apps/simple/components/content/search/clientlibs/js
8. com.adobe.aem.sample.simple
  1. <https://sling.apache.org/documentation/bundles/models.html#exporter-framework-since-130>



# Q&A

Danny Gordon  
dgordon@adobe.com

David Gonzalez  
dgonzale@adobe.com

Sean Schnoor  
sschnoor@adobe.com



**Adobe**



Insert headline or  
central text statement here.

# Additional templates and more resources

## Additional templates

- This template includes a full set of page templates for one of the Adobe Remix pieces. Additional templates featuring other Adobe Remix artwork are also available.
- You can view and download all of the templates on Brand Center:  
<http://brandcenter.corp.adobe.com/assets/presentations.html>

## Formatting between standard and widescreen ratios

- Need help converting content between standard and widescreen ratios?  
Detailed instructions are available on Brand Center: <http://brandcenter.corp.adobe.com/assets/presentations.html>

## Tips for creating a great presentation

- Interested in some tips from a pro? Watch this tutorial from one of our presentation designers:  
<https://my.adobeconnect.com/slidedeck>

# White Content Area, Black Footer

Use this layout for content that looks best on white.



# 1

Lorem ipsum dolor sit  
amet, consectetur  
adipiscing elit.

# 2

Lorem ipsum dolor sit  
amet, consectetur  
adipiscing elit.

# 3

Lorem ipsum dolor sit  
amet, consectetur  
adipiscing elit.



## Gray Content Area, Black Footer

- Use this layout for content that looks best on gray.

## Black Content Area, Black Footer

- Use this layout for content that looks best on black.



# 1

Lorem ipsum dolor sit  
amet, consectetur  
adipiscing elit.

# 2

Lorem ipsum dolor sit  
amet, consectetur  
adipiscing elit.

# 3

Lorem ipsum dolor sit  
amet, consectetur  
adipiscing elit.



# SUMMIT

Bē  
Ari Weinkle

Adobe Summit | The Digital Marketing Conference  
March 19-23, 2017, Las Vegas

# Color palette

## Dynamic



R - 255  
G - 0  
B - 0



R - 251  
G - 176  
B - 52



R - 255  
G - 221  
B - 0



R - 193  
G - 216  
B - 47

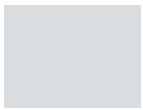


R - 0  
G - 164  
B - 228



R - 131  
G - 72  
B - 181

## Neutral



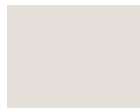
R - 218  
G - 221  
B - 224



R - 172  
G - 179  
B - 185



R - 107  
G - 115  
B - 123



R - 228  
G - 223  
B - 217



R - 192  
G - 181  
B - 169



R - 136  
G - 120  
B - 104

## Note

Refer to the corporate brand guidelines on Brand Center for more information on using color and imagery:  
<http://brandcenter.corp.adobe.com/assets/guidelines.html>



# SUMMIT

Bē  
Sergey Shchapov

Adobe Summit | The Digital Marketing Conference  
March 19-23, 2017, Las Vegas



**Adobe**