

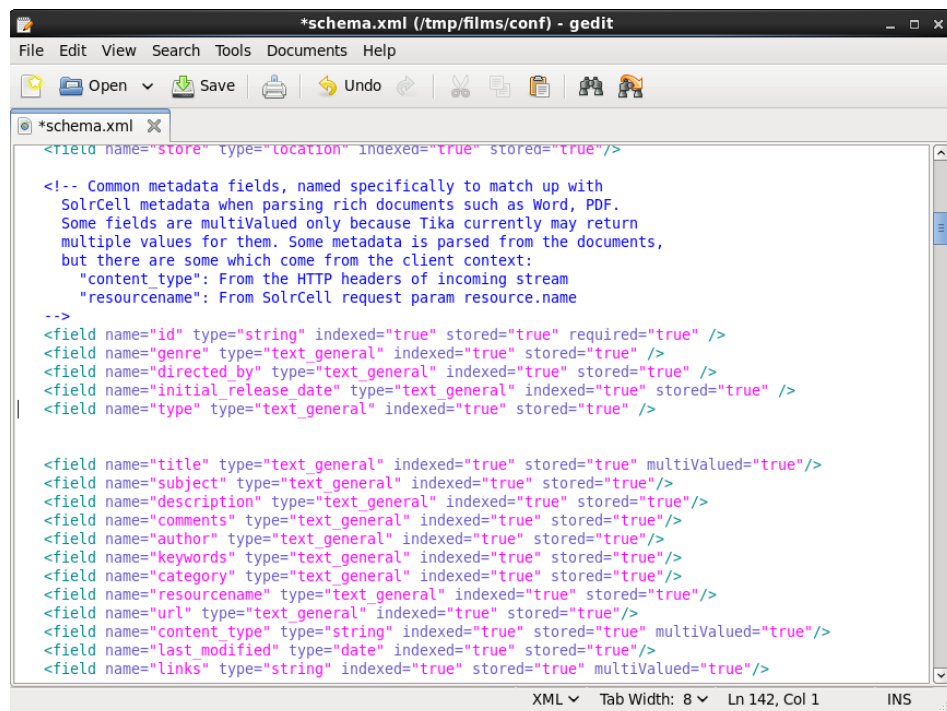
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CS 5590 Summer 2020

PART 1: FILMS DATASET

Step 1: Create instancedir and edit the schema.xml

```
[cloudera@quickstart ~]$ solrctl instancedir --generate /tmp/films
Error: subdirectory /tmp/films already exists
[cloudera@quickstart ~]$ ls /tmp/films/
conf
[cloudera@quickstart ~]$ ls /tmp/films/conf/
admin-extra.html                      _schema_analysis_synonyms_english.json
admin-extra.menu-bottom.html          schema.xml
admin-extra.menu-top.html             schema.xml~
clustering                            scripts.conf
currency.xml                          solrconfig.xml
elevate.xml                           solrconfig.xml.secure
lang                                  spellings.txt
mapping-FoldToASCII.txt               stopwords.txt
mapping-ISOLatinIAccent.txt           synonyms.txt
protwords.txt                         update-script.js
_rest_managed.json                   velocity
_schema_analysis_stopwords_english.json xslt
[cloudera@quickstart ~]$ gedit /tmp/films/conf/schema.xml&
[1] 11758
[cloudera@quickstart ~]$
```



```
*schema.xml (/tmp/films/conf) - gedit
File Edit View Search Tools Documents Help
Open Save Undo
*schema.xml X
<!-- Common metadata fields, named specifically to match up with
SolrCell metadata when parsing rich documents such as Word, PDF.
Some fields are multiValued only because Tika currently may return
multiple values for them. Some metadata is parsed from the documents,
but there are some which come from the client context:
"content type": From the HTTP headers of incoming stream
"resource name": From SolrCell request param resource.name
-->
<field name="store" type="location" indexed="true" stored="true"/>
<field name="id" type="string" indexed="true" stored="true" required="true" />
<field name="genre" type="text_general" indexed="true" stored="true" />
<field name="directed by" type="text_general" indexed="true" stored="true" />
<field name="initial_release_date" type="text_general" indexed="true" stored="true" />
<field name="type" type="text_general" indexed="true" stored="true" />

<field name="title" type="text_general" indexed="true" stored="true" multiValued="true"/>
<field name="subject" type="text_general" indexed="true" stored="true"/>
<field name="description" type="text_general" indexed="true" stored="true"/>
<field name="comments" type="text_general" indexed="true" stored="true"/>
<field name="author" type="text_general" indexed="true" stored="true"/>
<field name="keywords" type="text_general" indexed="true" stored="true"/>
<field name="category" type="text_general" indexed="true" stored="true"/>
<field name="resource name" type="text_general" indexed="true" stored="true"/>
<field name="url" type="text_general" indexed="true" stored="true"/>
<field name="content type" type="string" indexed="true" stored="true" multiValued="true"/>
<field name="last modified" type="date" indexed="true" stored="true"/>
<field name="links" type="string" indexed="true" stored="true" multiValued="true"/>
```

Step 2: Create a new instancedir and its collection

```
[cloudera@quickstart ~]$ solrctl instancedir --create films /tmp/films
Uploading configs from /tmp/films/conf to quickstart.cloudera:2181/solr. This may take up to a minute.
[1]+  Done                  gedit /tmp/films/conf/schema.xml
[cloudera@quickstart ~]$ solrctl collection --create films
<?xml version="1.0" encoding="UTF-8"?> <response> <lst name="responseHeader"> <
int name="status"> 0</int> <int name="QTime"> 13406</int> </lst> <lst name="fail
ure"> <str> org.apache.solr.client.solrj.impl.HttpSolrServer$RemoteSolrException
:Error CREATEing SolrCore 'films_shard1_replica1': Unable to create core [films_
shard1_replica1] Caused by: [schema.xml] Duplicate field definition for 'id' [[[
id{type=string,properties=indexed,stored,omitNorms,omitTermFreqAndPositions,sort
MissingLast,required, required=true}]]] and [[[id{type=string,properties=indexed
,stored,omitNorms,omitTermFreqAndPositions,sortMissingLast,required, required=tr
ue}]]]</str> </lst> </response>
```

Step 3: Open Solr web interface and start working on the films dataset

QUERY 1 - Keyword matching: Print movies with genres = drama

films_shard1_replica1: org.apache.solr.common.cloud.ZooKeeperException:org.apache.solr.common.cloud.ZooKeeperException: Could not find configName fr managedTemplate, schemalessTemplate, schemalessTemplateSecure]

Please check your logs for more information

Apache Solr

Dashboard
Logging
Cloud
Core Admin
Java Properties
Thread Dump
films_shard1_r...
Overview
Analysis
Dataimport
Documents
Files
Ping
Plugins / Stats
Query
Replication
Schema Browser

Request-Handler (qt)
/select

common
q
genre="Drama"

fq

sort
name asc

start, rows
0 100

fl

df

Raw Query Parameters
key1=val1&key2=val2

wt
json

☒ indent
☐ debugQuery
☐ dismax

http://quickstart.cloudera:8983/solr/films_shard1_replica1/select?q=genre%3D%Drama%

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 25,
    "params": {
      "sort": "name asc",
      "indent": "true",
      "q": "genre=\\"Drama\\" ",
      "_": "1593042065041",
      "wt": "json",
      "rows": "100"
    }
  },
  "response": {
    "numFound": 1,
    "start": 0,
    "docs": [
      {
        "name": "Confessions of a Teenage Drama Queen",
        "directed_by": "Sara Sugarman",
        "genre": "Family|Teen film|Musical comedy|Romantic comedy",
        "id": "/en/confessions_of_a_teenage_drama_queen",
        "initial_release_date": "2004-02-17",
        "_version_": 1670425375530811400
      }
    ]
  }
}
```

QUERY 2 - Wildcard matching: The search string "A?" would match both test and text.

Apache Solr

Dashboard
Logging
Cloud
Core Admin
Java Properties
Thread Dump
films_shard1_r...
Overview
Analysis
Dataimport
Documents
Files
Ping
Plugins / Stats
Query
Replication
Schema Browser

Request-Handler (qt)
/select

common
q
name:A?

fq

sort
name asc

start, rows
0 1001

fl
name, initial_release_date, genre

df

Raw Query Parameters
key1=val1&key2=val2

wt
json

☒ indent
☐ debugQuery
☐ dismax
☐ edismax
☐ hl
☐ facet
☐ spatial
☐ spellcheck
Execute Query

http://quickstart.cloudera:8983/solr/films_shard1_replica1/select?q=name%3AA%3F&sort=name+asc&rows=1001&fl=name

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 22,
    "params": {
      "fl": "name, initial_release_date, genre",
      "sort": "name asc",
      "indent": "true",
      "q": "name:A?",
      "_": "1593043333437",
      "wt": "json",
      "rows": "1001"
    }
  },
  "response": {
    "numFound": 5,
    "start": 0,
    "docs": [
      {
        "name": "Air",
        "genre": "Fantasy|Anime|Animation|Japanese Movies|Drama",
        "initial_release_date": "2005-02-05"
      },
      {
        "name": "Air Bud: Spikes Back",
        "genre": "Family|Sports|Comedy",
        "initial_release_date": "2003-06-24"
      },
      {
        "name": "Air Buddies",
        "genre": "Family|Animal Picture|Children's/Family|Family-Oriented Adventure|Comedy",
        "initial_release_date": "2006-12-10"
      },
      {
        "name": "Bunty Aur Babli",
        "genre": "Romance Film|Musical|World cinema|Musical comedy|Comedy|Adventure Film|Crime Fiction",
        "initial_release_date": "2005-05-27"
      }
    ]
  }
}
```

QUERY 3 - Proximity matching: print movie name “air” within 3 words of each other in a document.

The screenshot shows the Apache Solr Admin UI. On the left is a sidebar with navigation links: Dashboard, Logging, Cloud, Core Admin, Java Properties, Thread Dump, and a dropdown menu for 'films_shard1_r...'. Below this are links for Overview, Analysis, Dataimport, Documents, Files, Ping, Plugins / Stats, Query (highlighted), Replication, and Schema Browser. The main panel is titled 'Request-Handler (qt)' and contains the following fields: a text input for '/select', a dropdown for 'common', a text input for 'q' containing 'name:"Air"~3', a text input for 'fq', a dropdown for 'sort' set to 'name asc', and input fields for 'start' (0) and 'rows' (1001). Below these are fields for 'fl' (name, initial_release_date, genre), 'df', and 'Raw Query Parameters' (key1=val1&key2=val2). A dropdown for 'wt' is set to 'json'. There are checkboxes for 'indent' (checked), 'debugQuery', 'dismax', 'edismax', 'hl', 'facet', 'spatial', and 'spellcheck'. An 'Execute Query' button is at the bottom. On the right, the JSON response is displayed, showing a status of 0, QTime of 6, and 4 documents found. The documents are listed with their names, genres, and initial release dates.

```
http://quickstart.cloudera:8983/solr/films_shard1_replica1/select?q=name%3A%22Air%22~3&sort=name%3Aasc&wt=json&indent=true
```

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 6,
    "params": {
      "fl": "name, initial_release_date, genre",
      "sort": "name asc",
      "indent": "true",
      "q": "name:'Air'~3",
      "_": "1593042953362",
      "wt": "json",
      "rows": "1001"
    }
  },
  "response": {
    "numFound": 4,
    "start": 0,
    "docs": [
      {
        "name": "Air",
        "genre": "Fantasy|Anime|Animation|Japanese Movies|Drama",
        "initial_release_date": "2005-02-05"
      },
      {
        "name": "Air Bud: Spikes Back",
        "genre": "Family|Sports|Comedy",
        "initial_release_date": "2003-06-24"
      },
      {
        "name": "Air Buddies",
        "genre": "Family|Animal Picture|Children's/Family|Family-Oriented Adventure|Comedy",
        "initial_release_date": "2006-12-10"
      },
      {
        "name": "Air Bud: Seventh Inning Fetch",
        "genre": "Family|Sports|Comedy|Drama",
        "initial_release_date": "2002-02-21"
      }
    ]
  }
}
```


QUERY 4 - Range searches: movie release before 2006-12-10

The screenshot shows the Apache Solr Admin UI. On the left is a sidebar with navigation links: Dashboard, Logging, Cloud, Core Admin, Java Properties, Thread Dump, and a dropdown menu for 'films_shard1_r...'. Below this are links for Overview, Analysis, Dataimport, Documents, Files, Ping, Plugins / Stats, Query (highlighted), Replication, and Schema Browser. The main panel is titled 'Request-Handler (qt)' and contains the following fields: a text input for '/select', a dropdown for 'common', a text input for 'q' containing 'initial_release_date:[*TO 2006-12-10]', a text input for 'fq', a dropdown for 'sort' set to 'name asc', and input fields for 'start' (0) and 'rows' (1001). Below these are fields for 'fl', 'df', and 'Raw Query Parameters' (key1=val1&key2=val2). A dropdown for 'wt' is set to 'json'. There are checkboxes for 'indent' (checked), 'debugQuery', 'dismax', 'edismax', 'hl', 'facet', 'spatial', and 'spellcheck'. An 'Execute Query' button is at the bottom. On the right, the JSON response is displayed, showing a status of 0, QTime of 56, and 984 documents found. The documents are listed with their names, directed by, genres, IDs, initial release dates, and version numbers.

```
http://quickstart.cloudera:8983/solr/films_shard1_replica1/select?q=initial_release_date:[*TO 2006-12-10]&wt=json&indent=true
```

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 56,
    "params": {
      "sort": "name asc",
      "indent": "true",
      "q": "initial_release_date:[*TO 2006-12-10]",
      "_": "1593042646968",
      "wt": "json",
      "rows": "1001"
    }
  },
  "response": {
    "numFound": 984,
    "start": 0,
    "docs": [
      {
        "name": "A ton image",
        "directed_by": "Aruna Villiers",
        "genre": "Thriller|Science Fiction",
        "id": "/en/a_ton_image",
        "initial_release_date": "2004-05-26",
        "_version_": 1670425373992550400
      },
      {
        "name": "Mother of Mine",
        "directed_by": "Klaus Härö",
        "genre": "War film|Drama",
        "id": "/en/aideista_parhain",
        "initial_release_date": "2005-08-25",
        "_version_": 1670425374115233800
      },
      {
        "name": "The Reflection",
        "directed_by": "Rakeysh Omprakash Mehra",
        "genre": "Horror|Thriller|Mystery|Bollywood|World cinema",
        "id": "/en/aks",
        "initial_release_date": "2001-07-13"
      }
    ]
  }
}
```

QUERY 5 - Fuzzy logic: Select movie contain word “air” 50%



Dashboard

Logging

Cloud

Core Admin

Java Properties

Thread Dump

films_shard1_r...

Overview

Analysis

Dataimport

Documents

Files

Ping

Plugins / Stats

Query

Replication

Schema Browser

Request-Handler (qt)

/select

— common —

q
name:air ~0.5

fq

sort
name asc

start, rows
0 1001

fl

df

Raw Query Parameters
key1=val1&key2=val2

wt
json

☒ indent

☐ debugQuery

☐ dismax

☐ edismax

☐ hl

☐ facet

☐ spatial

☐ spellcheck

Execute Query

http://quickstart.cloudera:8983/solr/films_shard1_replica1/select?q=name%3Aair+~0.5&sort=name+asc&r

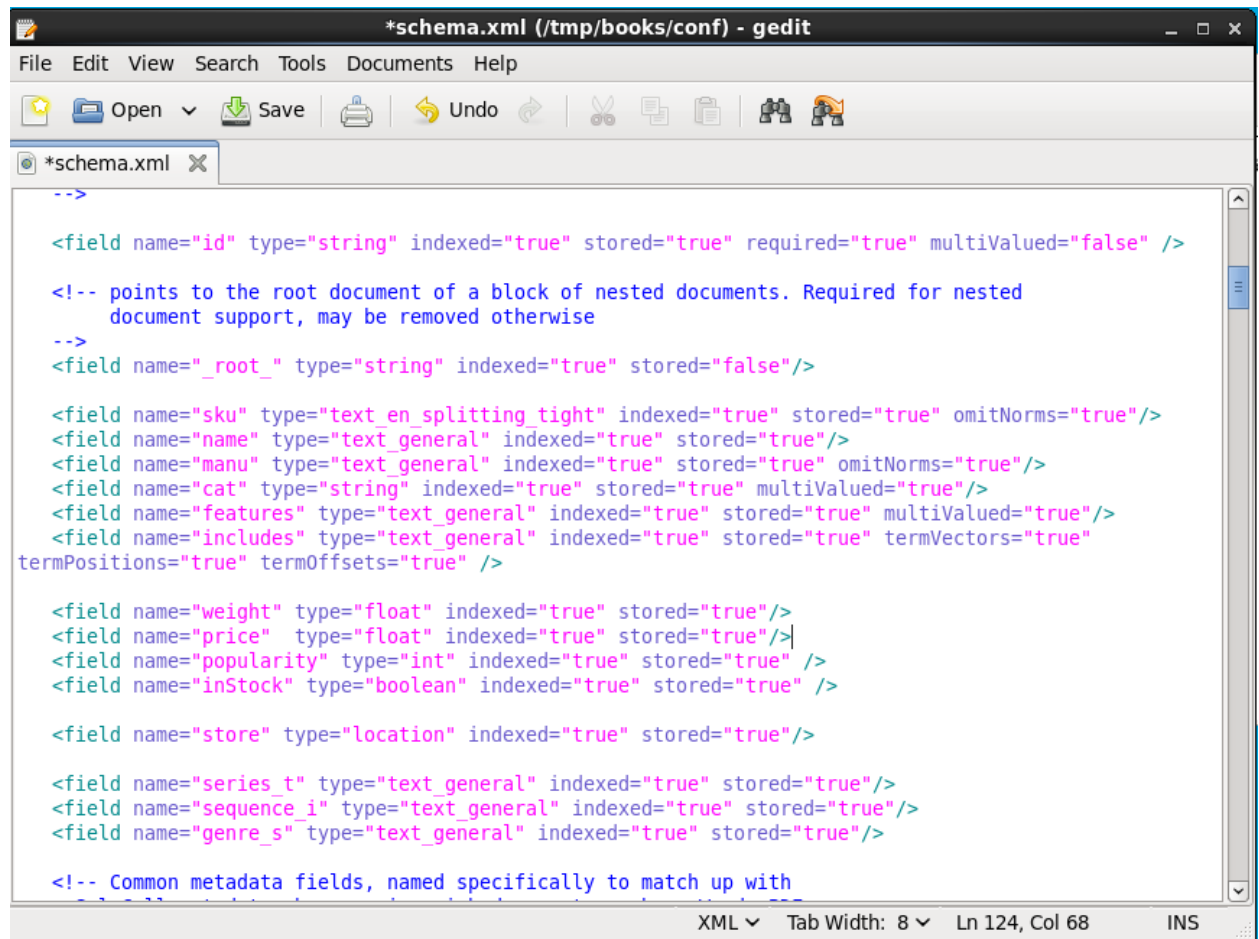
```
{
  "responseHeader": {
    "status": 0,
    "QTime": 247,
    "params": {
      "sort": "name asc",
      "indent": "true",
      "q": "name:air ~0.5",
      "_": "1593042817447",
      "wt": "json",
      "rows": "1001"
    }
  },
  "response": {
    "numFound": 5,
    "start": 0,
    "docs": [
      {
        "name": "Air",
        "directed_by": "Osamu Dezaki",
        "genre": "Fantasy|Anime|Animation|Japanese Movies|Drama",
        "id": "/en/air_2005",
        "initial_release_date": "2005-02-05",
        "version_": 1670425374119428000
      },
      {
        "name": "Air Bud: Spikes Back",
        "directed_by": "Mike Southon",
        "genre": "Family|Sports|Comedy",
        "id": "/en/air_bud_spikes_back",
        "initial_release_date": "2003-06-24",
        "version_": 1670425374121525200
      },
      {
        "name": "Air Buddies",
        "directed_by": "Robert Vince",
        "genre": "Family|Animal Picture|Children's|Family|Family-Oriented Adventure|Comedy",
        "id": "/en/air_buddies",

```

PART 2: BOOKS DATASET

Step 1: Create instancedir and edit the schema.xml

```
[cloudera@quickstart ~]$ solrctl instancedir --generate /tmp/books
[cloudera@quickstart ~]$ gedit /tmp/books/conf/schema.xml&
[1] 13923
```



```
-->
<field name="id" type="string" indexed="true" stored="true" required="true" multiValued="false" />
<!-- points to the root document of a block of nested documents. Required for nested
      document support, may be removed otherwise
-->
<field name="_root_" type="string" indexed="true" stored="false"/>

<field name="sku" type="text_en_splitting_tight" indexed="true" stored="true" omitNorms="true"/>
<field name="name" type="text_general" indexed="true" stored="true"/>
<field name="manu" type="text_general" indexed="true" stored="true" omitNorms="true"/>
<field name="cat" type="string" indexed="true" stored="true" multiValued="true"/>
<field name="features" type="text_general" indexed="true" stored="true" multiValued="true"/>
<field name="includes" type="text_general" indexed="true" stored="true" termVectors="true"
termPositions="true" termOffsets="true" />

<field name="weight" type="float" indexed="true" stored="true"/>
<field name="price" type="float" indexed="true" stored="true"/>
<field name="popularity" type="int" indexed="true" stored="true" />
<field name="inStock" type="boolean" indexed="true" stored="true" />

<field name="store" type="location" indexed="true" stored="true"/>


<field name="series_t" type="text_general" indexed="true" stored="true"/>
<field name="sequence_i" type="text_general" indexed="true" stored="true"/>
<field name="genre_s" type="text_general" indexed="true" stored="true"/>

<!-- Common metadata fields, named specifically to match up with
```

Step 2: Create a new books instancedir.

```
[cloudera@quickstart ~]$ solrctl instancedir --create books /tmp/books
Uploading configs from /tmp/books/conf to quickstart.cloudera:2181/solr. This may take up to a minute.
[cloudera@quickstart ~]$ solrctl collection --create books
```

Step 3: Go to web browser and open solr



Dashboard

Logging

Cloud

Core Admin

Java Properties

Thread Dump

books_shard1_...

Overview

Analysis

Dataimport

Documents

Files

Ping

Plugins / Stats

Query

Replication

Schema Browser

SolrCore Initialization Failures

new_core: org.apache.solr.common.cloud.ZooKeeperException:org.apache.solr.common.cloud.ZooKeeperException: Could not find configName for collection new_core found:[managedTemplate, schemalessTemplate, schemalessTemplateSecure]

films: org.apache.solr.common.SolrException:org.apache.solr.common.SolrException: Could not load conf for core films: [schema.xml] Duplicate field definition for 'id' [[{id:{type=string,required=true}}]] and [[{id:{type=string,properties=indexed,stored,omitNorms,omitTermFreqAndPositions,sortMissingLast,required,required=true}}]]. Schema file is /configs/films/schema.xml

films_shard1_replica1: org.apache.solr.common.cloud.ZooKeeperException:org.apache.solr.common.cloud.ZooKeeperException: Could not find configName for collection films found:[managedTemplate, schemalessTemplate, schemalessTemplateSecure]

Please check your logs for more information

Request-Handler (qt)

/update

Document Type

CSV

Document(s)

0553293354,book,Foundation,7.99,true,Isaac Asimov,Foundation Novels,1,sci fi

0812521390,book,The Black Company,6.99,false,Glen Cook,The Chronicles of The Black Company,1,fantasy

0812550706,book,Ender's Game,6.99,true,Orson Scott Card,Ender,1,sci fi

0441385532,book,Here,7.95,false,Steven Brust,Vlad Taltos,1,fantasy

0380014300,book,Nine Princes In Amber,6.99,true,Roger Zelazny,the Chronicles of Amber,1,fantasy

0805080481,book,The Book of Three,5.99,true,Lloyd Alexander,The Chronicles of Prydain,1,fantasy

080508049X,book,The Black Cauldron,5.99,true,Lloyd Alexander,The Chronicles of Prydain,2,fantasy

Commit Within

1000

Overwrite

true

Submit Document

Status: success

Response:

{

"responseHeader": {


"status": 0,

"QTime": 140

}

}

QUERY 1 - Keyword matching: find books in which its name contain "the"



Dashboard

Logging

Cloud

Core Admin

Java Properties

Thread Dump

books_shard1_...

Overview

Analysis

Dataimport

Documents

Files

Ping

Plugins / Stats

Query

Replication

Schema Browser

Request-Handler (qt)

/select

common

q

name="the"

fq

sort

start, rows

0 11

fl

df

Raw Query Parameters

key1=val1&key2=val2

wt

json

☒ indent

☐ debugQuery

☐ dismax

☐ edismax

☐ hl

☐ facet

☐ spatial

☐ spellcheck

http://quickstart.cloudera:8983/solr/books_shard1_replica1/select?q

{

"responseHeader": {

"status": 0,

"QTime": 178,

"params": {

"indent": "true",

"q": "name=\"the\"",

"_": "1593043916529",

"wt": "json",

"rows": "11"

}

},

"response": {

"numFound": 3,

"start": 0,

"docs": [

{

"id": "0812521390",

"cat": [

"book"

],

"name": "The Black Company",

"price": 6.99,

"price_c": "6.99,USD",

"inStock": false,

"author": "Glen Cook",

"author_s": "Glen Cook",

"series_t": "The Chronicles of The Black Company",

"sequence_i": 1,

"genre_s": "fantasy",

"_version_": 1670427499748655000

},

{

"id": "0805080481",

"cat": [

"book"

]

}

]

}

}

QUERY 2 - Wildcard matching: name:th*

The screenshot shows the Apache Solr Admin UI. On the left is a sidebar with navigation links: Dashboard, Logging, Cloud, Core Admin, Java Properties, Thread Dump, books_shard1_..., Overview, Analysis, Dataimport, Documents, Files, Ping, Plugins / Stats, Query (selected), Replication, and Schema Browser. The main panel is titled 'Request-Handler (qt)' and contains several input fields: a search bar with '/select', a 'common' dropdown, a 'q' field with 'name:th*', an 'fq' field, a 'sort' field, a 'start, rows' section with '0' and '11', an 'fl' field, a 'df' field, and a 'Raw Query Parameters' section with 'key1=val1&key2=val2'. Below these are checkboxes for 'wt' (set to 'json'), 'indent' (checked), 'debugQuery', 'dismax', 'edismax', 'hl', 'facet', and 'spatial'. The right panel shows the JSON response from the query, including headers and document details for 'A Game of Thrones' and 'A Song of Ice and Fire'.

```
Request-Handler (qt)
/select

— common
q
name:th*

fq

sort

start, rows
0 11

fl

df

Raw Query Parameters
key1=val1&key2=val2

wt
json

☒ indent
☐ debugQuery

☐ dismax
☐ edismax
☐ hl
☐ facet
☐ spatial

http://quickstart.cloudera:8983/solr/books_shard1_replica1/select?q=name:th*

{
  "responseHeader": {
    "status": 0,
    "QTime": 1,
    "params": {
      "indent": "true",
      "q": "name:th*",
      "wt": "json",
      "rows": "11"
    }
  },
  "response": {
    "numFound": 4,
    "start": 0,
    "docs": [
      {
        "id": "0553573403",
        "cat": [
          "book"
        ],
        "name": "A Game of Thrones",
        "price": 7.99,
        "price_c": "7.99,USD",
        "inStock": true,
        "author": "George R.R. Martin",
        "author_s": "George R.R. Martin",
        "series_t": "A Song of Ice and Fire",
        "sequence_i": 1,
        "genre_s": "fantasy",
        "_version_": 1670427499657429000
      },
      {
        "id": "0812521390",
        "cat": [
          "book"
        ],
        "name": "A Song of Ice and Fire",
        "price": 7.99,
        "price_c": "7.99,USD",
        "inStock": true,
        "author": "George R.R. Martin",
        "author_s": "George R.R. Martin",
        "series_t": "A Song of Ice and Fire",
        "sequence_i": 1,
        "genre_s": "fantasy",
        "_version_": 1670427499657429000
      }
    ]
  }
}
```

QUERY 3 - Proximity matching: with name contain "the"

The screenshot shows the Apache Solr Admin UI with the same sidebar as the previous query. The 'q' field now contains 'name="the"~1'. The 'wt' is set to 'json' and 'indent' is checked. The right panel shows the JSON response, which includes details for 'The Black Company' and 'The Chronicles of The Black Company'.

```
Request-Handler (qt)
/select

— common
q
name="the"~1

fq

sort

start, rows
0 11

fl

df

Raw Query Parameters
key1=val1&key2=val2

wt
json

☒ indent
☐ debugQuery

☐ dismax
☐ edismax
☐ hl
☐ facet
☐ spatial

http://quickstart.cloudera:8983/solr/books_shard1_replica1/select?q=name="the"~1

{
  "responseHeader": {
    "status": 0,
    "QTime": 0,
    "params": {
      "indent": "true",
      "q": "name=\"the\"~1",
      "wt": "json",
      "rows": "11"
    }
  },
  "response": {
    "numFound": 3,
    "start": 0,
    "docs": [
      {
        "id": "0812521390",
        "cat": [
          "book"
        ],
        "name": "The Black Company",
        "price": 6.99,
        "price_c": "6.99,USD",
        "inStock": false,
        "author": "Glen Cook",
        "author_s": "Glen Cook",
        "series_t": "The Chronicles of The Black Company",
        "sequence_i": 1,
        "genre_s": "fantasy",
        "_version_": 1670427499748655000
      },
      {
        "id": "0805080481",
        "cat": [
          "book"
        ],
        "name": "The Chronicles of The Black Company",
        "price": 6.99,
        "price_c": "6.99,USD",
        "inStock": false,
        "author": "Glen Cook",
        "author_s": "Glen Cook",
        "series_t": "The Chronicles of The Black Company",
        "sequence_i": 1,
        "genre_s": "fantasy",
        "_version_": 1670427499748655000
      }
    ]
  }
}
```


QUERY 4 - Range searches: search books with price between 0 and 7.99

The screenshot shows the Apache Solr Admin UI. On the left is a sidebar with navigation links: Dashboard, Logging, Cloud, Core Admin, Java Properties, Thread Dump, books_shard1_..., Overview, Analysis, Dataimport, Documents, Files, Ping, Plugins / Stats, Query (selected), Replication, and Schema Browser. The main area is titled 'Request-Handler (qt)' and contains a form for a query. The query is set to '/select' with a common clause. The query text is 'price:[0 TO 7.99]'. The facet field (fq) is empty. The sort field is empty. The start and rows are set to 0 and 11 respectively. The facet field (fl) is empty. The facet definition (df) is empty. The raw query parameters are 'key1=val1&key2=val2'. The weight (wt) is set to 'json'. The 'indent' checkbox is checked. The 'debugQuery' checkbox is unchecked. The 'dismax', 'edismax', 'hl', 'facet', and 'spatial' checkboxes are unchecked. The response is displayed on the right, showing a JSON object with a status of 0, QTime of 53, and 10 documents found. The first document is 'A Game of Thrones' by George R.R. Martin, priced at 7.99 USD.

```
http://quickstart.cloudera:8983/solr/books_shard1_replica1/select?q=price%3A%5B0+TO+7.99%5D
```

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 53,
    "params": {
      "indent": "true",
      "q": "price:[0 TO 7.99]",
      "_": "1593044110251",
      "wt": "json",
      "rows": "11"
    }
  },
  "response": {
    "numFound": 10,
    "start": 0,
    "docs": [
      {
        "id": "0553573403",
        "cat": [
          "book"
        ],
        "name": "A Game of Thrones",
        "price": 7.99,
        "price_c": "7.99,USD",
        "inStock": true,
        "author": "George R.R. Martin",
        "author_s": "George R.R. Martin",
        "series_t": "A Song of Ice and Fire",
        "sequence_i": 1,
        "genre_s": "fantasy",
        "_version_": 1670427499657429000
      },
      {
        "id": "0553579908",
        "cat": [
          "book"
        ]
      }
    ]
  }
}
```

QUERY 5 - Fuzzy logic: select book name contain "Book" with 80% similarity.

The screenshot shows the Apache Solr Admin UI. On the left is a sidebar with navigation links: Dashboard, Logging, Cloud, Core Admin, Java Properties, Thread Dump, books_shard1_..., Overview, Analysis, Dataimport, Documents, Files, Ping, Plugins / Stats, Query (selected), Replication, and Schema Browser. The main area is titled 'Request-Handler (qt)' and contains a form for a query. The query is set to '/select' with a common clause. The query text is 'name="Book"~0.8'. The facet field (fq) is empty. The sort field is empty. The start and rows are set to 0 and 11 respectively. The facet field (fl) is empty. The facet definition (df) is empty. The raw query parameters are 'key1=val1&key2=val2'. The weight (wt) is set to 'json'. The 'indent' checkbox is checked. The 'debugQuery' checkbox is unchecked. The 'dismax', 'edismax', 'hl', 'facet', and 'spatial' checkboxes are unchecked. The response is displayed on the right, showing a JSON object with a status of 0, QTime of 1, and 10 documents found. The first document is 'The Book of Three' by Lloyd Alexander, priced at 5.99 USD.

```
http://quickstart.cloudera:8983/solr/books_shard1_replica1/select?q=name%3D%22Book%22~0.8&rc
```

```
{
  "responseHeader": {
    "status": 0,
    "QTime": 1,
    "params": {
      "indent": "true",
      "q": "name=\"Book\"~0.8",
      "_": "1593044294933",
      "wt": "json",
      "rows": "11"
    }
  },
  "response": {
    "numFound": 10,
    "start": 0,
    "docs": [
      {
        "id": "0805080481",
        "cat": [
          "book"
        ],
        "name": "The Book of Three",
        "price": 5.99,
        "price_c": "5.99,USD",
        "inStock": true,
        "author": "Lloyd Alexander",
        "author_s": "Lloyd Alexander",
        "series_t": "The Chronicles of Prydain",
        "sequence_i": 1,
        "genre_s": "fantasy",
        "_version_": 1670427499758092300
      },
      {
        "id": "0553293354",
        "cat": [
          "book"
        ]
      }
    ]
  }
}
```