Assignment 3

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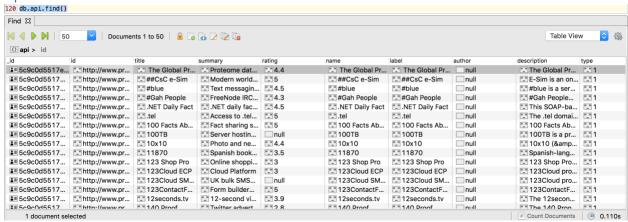
Parsing the files and creating database:

I have used python to parse the api and mashup file into a csv. I have then imported the file into mongo db

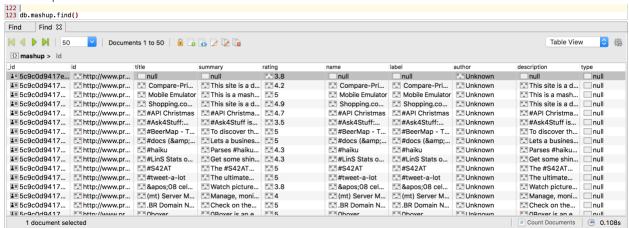
Loading data in mongo db:

I have used Studio 3t for mongo db. Please find the screenshot of the loaded collections in to the database. The "_id" is a mongo assigned id and it has been handled in backend before displaying it on the UI.

Api collection Structure:



Mashup Collection Structure:



Backend:

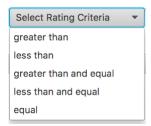
I am using java to develop the backend. I have created two separate classes for api and mashup collection. The mongo db is connected using a driver and the connection is made through Mongo Client. It is essential to have the mongo server up and running in order to query the collection.

I am using BasicDBObject to create the queries. Below is an example code of creating an "or Query" along with regular expression.

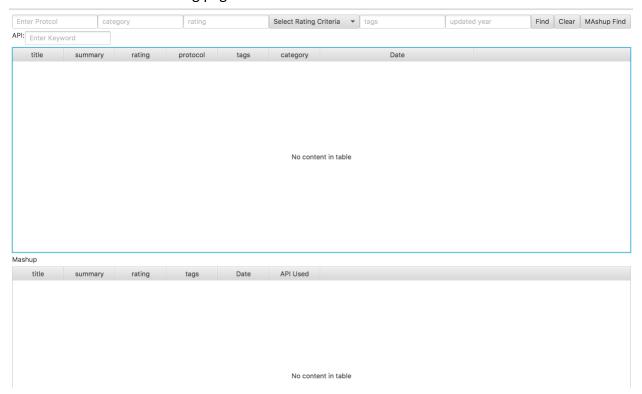
```
BasicDBObject andQuery = new BasicDBObject();
List<BasicDBObject> obj = new ArrayList<BasicDBObject>();
List<BasicDBObject> obj_keyword = new ArrayList<BasicDBObject>();
obj.add(new BasicDBObject((new BasicDBObject("title", new BasicDBObject("$regex", Pattern.quote(keyWordSelected)))));
obj.add(new BasicDBObject((new BasicDBObject("summary", new BasicDBObject("$regex", Pattern.quote(keyWordSelected)))));
obj.add(new BasicDBObject((new BasicDBObject("description", new BasicDBObject("$regex", Pattern.quote(keyWordSelected)))));
andQuery.put("$or", obj);
```

User Interface:

I have used Java FX to create the User Interface. Java fx is java GUI tool kit, is CSS Stylable and can be deployed to web. The steps to do this is in the README file. The rating criteria can be greater than(gt), less than(lt), greater than equal to(gte) and less than equal(lte) to. The user can put mongo expressions gt, lt, gte and lte as well:



Please find below the landing page of the UI.

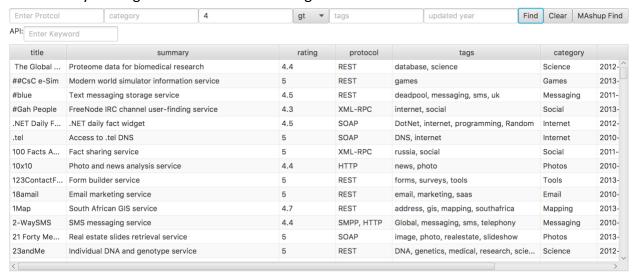


User can select the criteria using the text fields or dropdown.

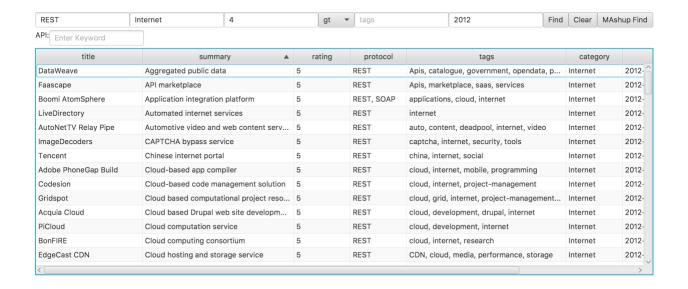
I have used regular expression to perform the keyword search. Find button query the API collection, "Clear" button clears the data present in both table views and "Find Mashup" button run the query for mashup data and display the results in mashup table view. The table columns are made resizable in order to read the whole text conveniently. Please find below the results of the query system. All the null enteries are handled and displayed as null.

Testing the query system:

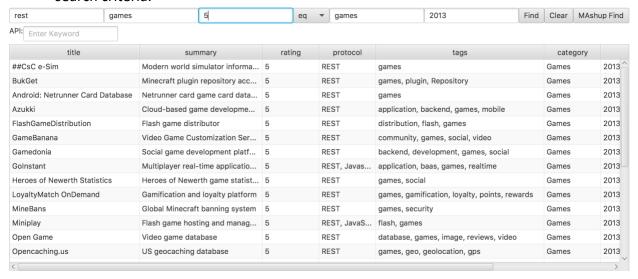
1) Querying apis with rating greater than 4. It can be seen that number of search results are large because of lesser search constraints. The number of search results can be estimated by looking at the scroll bar on the right of the table.



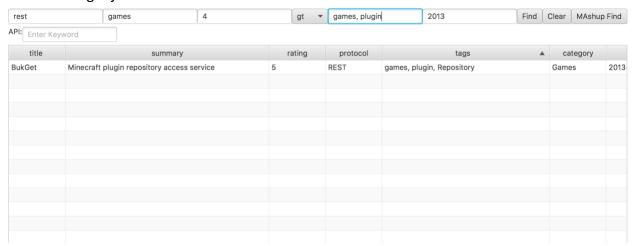
2) Querying api when protocol selected = "REST", category = "Internet", Rating = greater than "4", and updated year = 2012. Below result is displayed in the API table.
As now we have some specific search criteria. The number of search results has narrowed down



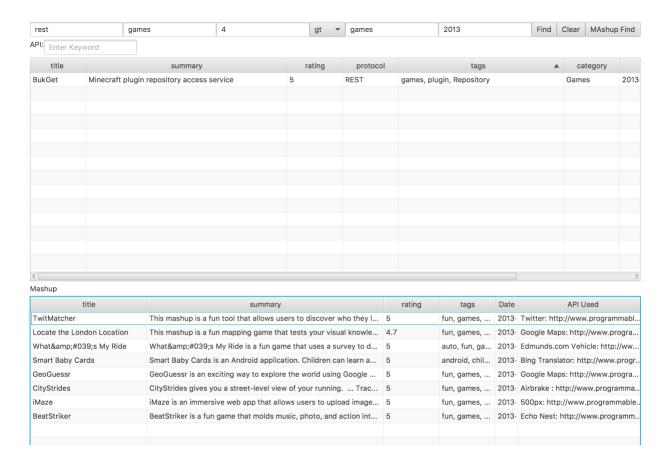
3) Querying api When protocol selected = "rest", category = "games", Rating = equal to 5, and updated year = 2013. Below result is displayed in the API table. The dataset includes all protocols in CAPS. This test case proves that the search is case insensitive. It can be seen that search results are now fewer because of the specific search criteria.



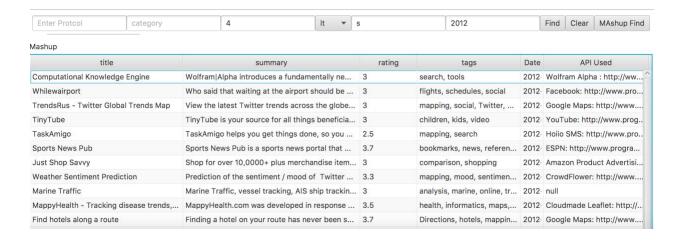
4) Now when I increase the tags from games to "games, plugin" with rating greater than 4. I will get just one search result.



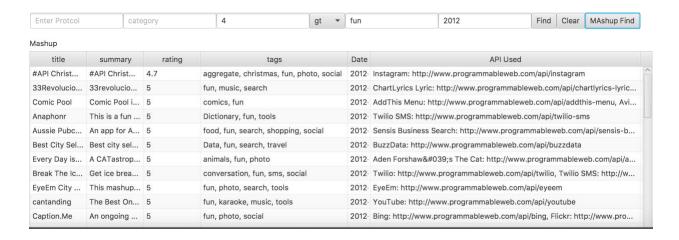
5) Querying mashup with same search criteria as [4]:



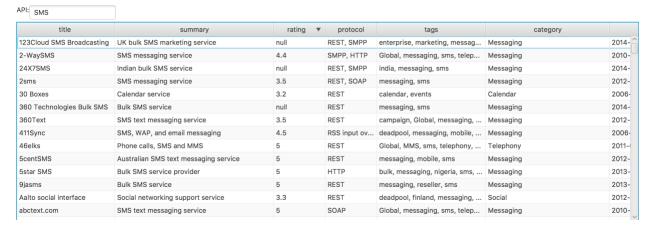
6) Querying Mashup with tag = "s", year = 2012 and rating = less than 4. (tags uses regular expression)



7) Querying Mashup with tag = "fun", year = 2012 and rating = greater than 4



8) Keyword based search in api: for SMS



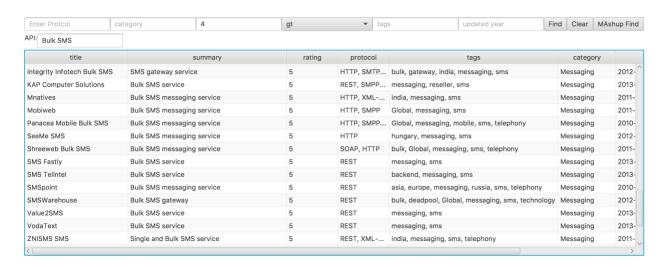
9) Keyword Search in mashup: for word "SMS"

Mashup					
title	summary	rating	tags		API Used
Zaggle ZMS	ZMS is a free SMS gateway with a retro 8BIT user interface. ZMS enabl	5	messaging, mobile, sms, telephony	2011-	Google App Engine: http
Zipments	Zipments is a community of couriers that will deliver items when and w	5	courier, messaging, mobile, shopping	2011-	Twilio: http://www.progr
Zen SMS	$\label{thm:constraint} \mbox{Zen-SMS is a customized Zendesk integration that automatically sends}$	5	deadpool, messaging, mobile, reference	2011-	Twilio: http://www.progr
YouCall MD	YouCall MD is a medical answering service using VOIP and SMS softwa $\label{eq:control}$	5	medical, messaging, telephony, Voice	2011-	Google App Engine: http
drop2phone	With drop2phone, you can send SMS notes to a drop and also receive n	5	deadpool, messaging, sms, telephony	2010	Drop.io: http://www.pro.
Amazon SNS and Nex	With Amazon SNS and Nexmo you can reach users in the US and in $\operatorname{mo} \ldots$	5	messaging, mobile, sms	2011-	Nexmo Wholesale SMS:

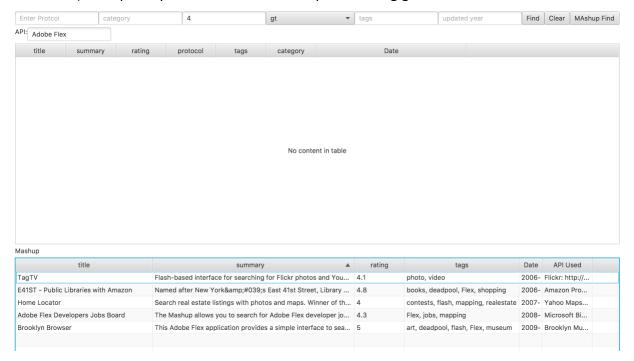
10) Keyword search in API for multiple keywords:

title	summary	rating	protocol	tags	category	
123Cloud SMS Broadcasting	UK bulk SMS marketing service	null	REST, SMPP	enterprise,	Messaging	2014
24X7SMS	Indian bulk SMS service	null	REST, SMPP	india, messa	Messaging	2014
360 Technologies Bulk SMS	Bulk SMS service	null	REST	messaging,	Messaging	2014
5star SMS	Bulk SMS service provider	5	HTTP	bulk, messa	Messaging	2013
9jasms	Bulk SMS service	5	REST	messaging,	Messaging	2013
BulkSMSVilla	Nigerian bulk SMS service	5	REST	messaging,	Messaging	2013
Burst SMS	Bulk SMS messaging service	null	REST	marketing,	Messaging	2013
Africa's Talking	African based SMS messaging service	3.5	null	africa, Keny	Messaging	2012
bytehand	Russian bulk SMS service	5	REST	messaging,	Messaging	2013
CDYNE SMS Notify	SMS messaging service	5	SOAP	Global, mes	Messaging	2010
Cellcom SmsGate	Hebrew bulk SMS service	5	SOAP	messaging,	Messaging	2012
ASPSMS	SMS messaging service	5	HTTP	messaging,	Messaging	2012
Clockwork SMS	Bulk SMS messaging service	5	REST, SOAP	bulk, Global,	Messaging	2010
ComposeSMS	Bulk SMS service	5	REST	messaging,	Messaging	2013

11) Multiple keywords for API with rating greater than 4



12) Multiple keyword search for mashup with rating greater than 4



Files Submitted:

- a) A Python file which parse the data and store it in csv
- b) A folder named "Parsed_Files" which has csv to import in Studio 3T(mongo db)
- c) A folder names "Query_files" which has a csv format query results from both the colections
- d) A folder named "mongo" which has source code.
- e) A folder named configuration files which has all the necessary library and config files to be configured.