

Assignment 3

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Design of the data structure:

The data is stored in mongoDB database in form of JSON.

For *API database*, the structure of the data is as below:

```
[
  {
    "id": <id_value>,
    "title": <title_value>,
    "summary": <summary_value>,
    "rating": <rating_value>,
    "name": <name_value>,
    "label": <label_value>,
    "author": <author_value>,
    "description": <description_value>,
    "type": <type_value>,
    "downloads": <downloads_value>,
    "useCount": <useCount_value>,
    "sampleUrl": <sampleUrl_value>,
    "downloadUrl": <downloadUrl_value>,
    "dateModified": <dateModified_value>,
    "remoteFeed": <remoteFeed_value>,
    "numComments": <numComments_value>,
    "commentsUrl": <commentsUrl_value>,
    "tags": [array of tags_value],
    "category": <category_value>,
    "protocols": <protocols_value>,
    "serviceEndpoint": <serviceEndpoint_value>,
    "version": <version_value>,
    "wsdl": <wsdl_value>,
    "dataFormats": <dataFormats_value>,
    "apigroups": <apigroups_value>,
    "example": <example_value>,
    "clientInstall": <clientInstall_value>,
    "authentication": <authentication_value>,
    "ssl": <ssl_value>,
    "readonly": <readonly_value>,
    "vendorApiKits": <vendorApiKits_value>,
    "communityApiKits": <communityApiKits_value>,
    "blog": <blog_value>,
    "forum": <forum_value>,
    "support": <support_value>,
    "accountReq": <accountReq_value>,
  }
]
```

```

        "commercial": <commercial_value>,
        "provider": <provider_value>,
        "managedBy": <managedBy_value>,
        "nonCommercial": <noncommercial_value>,
        "dataLicensing": <dataLicensing_value>,
        "fees": <fees_value>,
        "limits": <limits_value>,
        "terms": <terms_value>,
        "company": <company_value>,
        "updated": <updated_value>
    }
]

```

For ***Mashup database***, the structure of the data is as below:

```

[
    {
        "id": <id_value>,
        "title": <title_value>,
        "summary": <summary_value>,
        "rating": <rating_value>,
        "name": <name_value>,
        "label": <label_value>,
        "author": <author_value>,
        "description": <description_value>,
        "type": <type_value>,
        "downloads": <downloads_value>,
        "useCount": <useCount_value>,
        "sampleUrl": <sampleUrl_value>,
        "downloadUrl": <downloadUrl_value>,
        "dateModified": <dateModified_value>,
        "numComments": <numComments_value>,
        "commentsUrl": <commentsUrl_value>,
        "tags": [array of tags_value],
        "apis": [
            "name": <api_name>,
            "url": <api_url>
        ]
        "updated": <updated_value>
    }
]

```

Screenshots of data in database:

API Database:

```
Command Prompt - mongo.exe
> use programmableWebDB;
switched to db programmableWebDB
> db.apiDB.find()
{ "_id": "ObjectID('5f838ed36238b12a988dbc11')", "id": "http://www.programmableweb.com/api/the-global-proteome-machine", "title": "The Global Proteome Machine", "summary": "Proteome data fo
biomedical research", "rating": "4.4", "name": "The Global Proteome Machine", "label": "The Global Proteome Machine", "author": "", "description": "The Global Proteome Machine is an a
ttempt to create knowledge from proteomics data and reuse it to solve biomedical research problems. The Global Proteome Machine Database was built to use GPM data to help validate peptide MS/M
S spectra and protein coverage patterns. The Global Proteome Machine Database API provides RESTful access to commonly required information based on data from the GPM Database. Responses are JS
ON formatted.", "type": "1", "downloads": "", "useCount": "", "sampleUrl": "http://wiki.thegpm.org/wiki/GPMD_REST", "dateModified": "2012-12-17T09:51:40Z", "remoteFe
ed": "", "numComments": "", "commentsUrl": "http://api.programmableweb.com/apis/the-global-proteome-machine/comments", "tags": [ "database", "science" ], "category": "Science", "protocols
": "REST", "serviceEndpoint": "http://gpmdb.thegpm.org/", "version": "", "wsdl": "", "dataFormats": "JSON", "apiGroups": "", "example": "", "clientInstall": "", "authentication": "",
"ssl": "", "readonly": "", "vendorApiKits": "", "communityApiKits": "", "blog": "", "forum": "", "support": "", "accountReq": "No", "commercial": "", "provider": "http://www.thegpm.o
rg/", "managedBy": "", "nonCommercial": "", "dataLicensing": "", "fees": "", "limits": "", "terms": "", "company": "", "updated": "2012-12-17T09:51:40Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc13')", "id": "http://www.programmableweb.com/apis/csc-e-sim", "title": "eSCC e-Sim", "summary": "Modern world simulator information service", "ratin
g": "5.0", "name": "eSCC e-Sim", "label": "eSCC e-Sim", "author": "", "description": "e-Sim is an online modern world simulation wherein the player becomes a citizen of one of 50 virtua
l countries. Players can take on a role such as soldier or business owner in order to affect the politics, economics, and military standing of their country. #eSCC is a developer group that h
as created an unofficial REST API for retrieving information from e-Sim. Available information relates to citizens, battles, markets, taxes, parties, military units, regions, and more.", "type
": "1", "downloads": "", "useCount": "", "sampleUrl": "http://www.cscpro.org/2013/12/welcome-esim-api-v3/", "dateModified": "2013-06-08T05:35:07Z", "remoteFeed": "",
"numComments": "", "commentsUrl": "http://api.programmableweb.com/apis/csc-e-sim/comments", "tags": "games", "category": "Games", "protocols": "REST", "serviceEndpoint": "http://api.cscpro.o
rg/esim/", "version": "", "wsdl": "", "dataFormats": "XML, JSON", "apiGroups": "", "example": "", "clientInstall": "", "authentication": "", "ssl": "", "readonly": "", "vendorApiK
its": "", "communityApiKits": "", "blog": "", "forum": "", "support": "", "accountReq": "", "commercial": "", "provider": "http://www.cscpro.org/", "managedBy": "#eSCC", "nonCommercial
": "", "dataLicensing": "", "fees": "", "limits": "", "terms": "", "company": "", "updated": "2013-06-08T05:35:07Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc15')", "id": "http://www.programmableweb.com/api/blue", "title": "#blue", "summary": "Text messaging storage service", "rating": "4.5", "name": "#
blue", "label": "#blue", "author": "", "description": "#blue is a service that stores text messages in a conversational style. With this API, client apps can, on behalf of users, do almost
anything that can be done through the #blue website. This includes reading and sending messages, creating and updating contacts, and marking messages as favorites. The service is only availabl
e to 02 subscribers in the UK at this time. The API uses RESTful calls and responses are formatted in JSON.", "type": "1", "downloads": "", "useCount": "", "sampleUrl": "https://api.hashbu
le.com/doc/home", "downloadUrl": "", "dateModified": "2011-04-23T03:49:34Z", "remoteFeed": "", "numComments": "", "commentsUrl": "http://api.programmableweb.com/apis/blue/comments", "tags
": [ "deadpool", "messaging", "sms", "uk", ], "category": "Messaging", "protocols": "REST", "serviceEndpoint": "", "version": "", "wsdl": "", "dataFormats": "JSON", "apiGroups": "", "ex
ample": "", "clientInstall": "", "authentication": "OAuth", "ssl": "Yes", "readonly": "", "vendorApiKits": "", "communityApiKits": "", "blog": "", "forum": "", "support": "", "accoun
tReq": "Yes", "commercial": "", "provider": "http://hashblue.com/", "managedBy": "", "nonCommercial": "", "dataLicensing": "", "fees": "Free", "limits": "", "terms": "https://hashbu
le.com/terms", "company": "22", "updated": "2011-04-23T03:49:34Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc16')", "id": "http://www.programmableweb.com/api/gah-people", "title": "#Gah People", "summary": "FreeNode IRC channel user-finding service", "ratin
g": "4.3", "name": "#Gah People", "label": "#Gah People", "author": "", "description": "#Gah People helps people from the FreeNode IRC channel #gah to discover one another. The website&a
mp;#039; XML-RPC API can be used to retrieve a list of all people on #gah or to retrieve people based on several factors that may include a search string, whether they have blogs, or whether t
hey have RSS feeds. You can also use the API to find all specified persons.", "type": "1", "downloads": "", "useCount": "", "sampleUrl": "http://api.gahpeople.com/gah/people", "dateModifie
d": "2013-02-01T05:21:43Z", "remoteFeed": "", "numComments": "", "commentsUrl": "http://api.programmableweb.com/apis/gah-people/comments", "tags": [ "Internet", "social", ], "category": "Social", "protocols": "XML-RPC", "serviceEndpoint": "http://gah.pablotron.org/api/0.1/", "version": "", "wsdl": "", "dataFormats": "XML", "apiG
roups": "", "example": "", "clientInstall": "", "authentication": "", "ssl": "", "readonly": "", "vendorApiKits": "Ruby", "communityApiKits": "", "blog": "", "forum": "", "support":
"", "accountReq": "No", "commercial": "", "provider": "http://pablotron.org/", "managedBy": "Paul Duncan", "nonCommercial": "", "dataLicensing": "", "fees": "", "limits": "", "terms":
"" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc18')", "id": "http://www.programmableweb.com/api/net-daily-fact", "title": ".NET Daily Fact", "summary": ".NET Daily Fact widget", "rating": "4.5"
, "name": ".NET Daily Fact", "label": ".NET Daily Fact", "author": "", "description": "This SOAP-based API allows the user to place a widget on their website that returns a fact of the day
reflecting all aspects of the .NET platform.", "type": "1", "downloads": "", "useCount": "", "sampleUrl": "http://www.xmlme.com/MSDailyNet.aspx", "downloadUrl": "", "dateModified": "201
2-01-10T02:14:26Z", "remoteFeed": "", "numComments": "", "commentsUrl": "http://api.programmableweb.com/apis/net-daily-fact/comments", "tags": [ "DotNet", "Internet", "programming", "Rand
om", ], "category": "Internet", "protocols": "SOAP", "serviceEndpoint": "http://xmlme.com/WebServices", "version": "", "wsdl": "http://www.xmlme.com/MSDailyNet.asmx?wsdl", "dataFormats":
"XML", "apiGroups": "", "example": "", "clientInstall": "No", "authentication": "None", "ssl": "", "readonly": "", "vendorApiKits": "", "communityApiKits": "", "blog": "", "forum": ""
", "support": "", "accountReq": "No", "commercial": "", "provider": "http://www.seanco.com/", "managedBy": "Seanco Technology, Inc.", "nonCommercial": "", "dataLicensing": "Unspecified"
, "fees": "None", "limits": "None given", "terms": "Not given", "company": "", "updated": "2012-01-10T02:14:26Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc1a')", "id": "http://www.programmableweb.com/api/tel", "title": ".tel", "summary": "Access to .tel DNS", "rating": "5.0", "name": ".tel", "label
": ".tel", "author": "", "description": "The .tel domain uses the DNS to store contact information. To turn data into a public web service, use SOAP or
HTTP. Client applications using this SOAP interface can write and read data in .tel domains. With the API, apps can: Con&#amp;#039;tact; sure all types of contact data: phone, mobile, e-mail, v
er HTTP. Client applications using this SOAP interface can write and read data in .tel domains. With the API, apps can: Con&#amp;#039;tact; sure all types of contact data: phone, mobile, e-mail, v
```

Mashup Database:

```
Command Prompt - mongo.exe
> use programmableWebDB;
switched to db programmableWebDB
> db.mashupDB.find()
{ "_id": "ObjectID('5f838ed36238b12a988dbc12')", "id": "http://www.programmableweb.com/mashup/-22", "title": "", "summary": "", "rating": "3.8", "name": "", "label": "", "author": "Unkno
wn", "description": "", "type": "1", "downloads": "0", "useCount": "0", "sampleUrl": "http://www.easypeasyphotos.net", "dateModified": "2011-10-09T14:35:06Z", "numComments": "0", "commen
tsUrl": "http://api.programmableweb.com/mashups/-22/comments", "tags": "", "apis": [ { "name": "Flickr", "url": "http://www.programmableweb.com/api/flickr" }, { "name": "Google Maps", "u
rl": "http://www.programmableweb.com/api/google-maps" } ], "updated": "2011-10-09T14:35:06Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc14')", "id": "http://www.programmableweb.com/mashup/compare-prices-info", "title": "Compare-Prices.info", "summary": "This site is a demo to show t
he functionality of the Shoppilla.com API. Supports the US and UK API versions.", "rating": "4.2", "name": "Compare-Prices.info", "label": "Compare-Prices.info", "author": "Unknown", "
description": "This site is a demo to show the functionality of the Shoppilla.com API. Supports the US and UK API versions.", "type": "", "downloads": "0", "useCount": "2170", "sampleUrl
": "http://www.compare-prices.info", "dateModified": "2009-02-10T00:35:01Z", "numComments": "2", "commentsUrl": "http://api.programmableweb.com/mashups/compare-prices.info/comments", "ta
gs": [ "affiliate", "eBay", "money", "Program", "shopping", "Shoppilla" ], "apis": [ { "name": "Shoppilla", "url": "http://www.programmableweb.com/api/shoppilla" }, "updated": "2009-02-1
0T00:35:01Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc17')", "id": "http://www.programmableweb.com/mashup/mobile-emulator", "title": "Mobile Emulator", "summary": "This is a mashup built by page2images
API. With this tool, you can preview how your website will display on a mobile device included iPhone4, iPhones, Android phones, windows phones, blackberry phone and tablets.", "rating": "5.
0", "name": "Mobile Emulator", "label": "Mobile Emulator", "author": "Unknown", "description": "This is a mashup built by page2images API. With this tool, you can preview how your websit
e will display on a mobile device included iPhone4, iPhones, Android phones, windows phones, blackberry phone and tablets.", "type": "", "downloads": "0", "useCount": "0", "sampleUrl": "ht
tp://www.page2images.com/mobile-phone-emulator", "dateModified": "2013-10-23T10:44:20Z", "numComments": "1", "commentsUrl": "http://api.programmableweb.com/mashup/mobile-emulator/comments"
, "tags": [ "design", "images", "mobile", "Preview", "tools" ], "apis": [ { "name": "Page2Images", "url": "http://www.programmableweb.com/api/page2images" }, "updated": "2013-10-23T10:4
4:20Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc19')", "id": "http://www.programmableweb.com/mashup/shopping.com-api-3-demo-for-all-markets", "title": "Shopping.com API 3 Demo for All Markets", "s
ummary": "This site is a demo to show the functionality of the Shopping.com API version 3. Includes all local US,UK,DE,FR,AU.", "rating": "4.9", "name": "Shopping.com API 3 Demo for All Ma
rkets", "label": "Shopping.com API 3 Demo for All Markets", "author": "Unknown", "description": "This site is a demo to show the functionality of the Shopping.com API version 3. Includes a
ll local US,UK,DE,FR,AU.", "type": "", "downloads": "0", "useCount": "3034", "sampleUrl": "http://www.get-cash-back.com", "dateModified": "2007-08-20T21:00:06Z", "numComments": "0", "comm
entsUrl": "http://api.programmableweb.com/mashups/shopping.com-api-3-demo-for-all-markets/comments", "tags": [ "affiliate", "amazon", "publisher", "Ready", "shop", "shopping" ], "apis": [ {
"name": "Shopping.com", "url": "http://www.programmableweb.com/api/shopping.com" }, "updated": "2007-08-20T21:00:06Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc1b')", "id": "http://www.programmableweb.com/mashup/api-christmas", "title": "API Christmas", "summary": "API Christmas is the Nativity Story, rem
ixed through digital media.", "rating": "4.7", "name": "API Christmas", "label": "API Christmas", "author": "Unknown", "description": "API Christmas is the Nativity Story, remixed thro
ugh digital media.", "type": "", "downloads": "0", "useCount": "0", "sampleUrl": "http://apichristmas.com/", "dateModified": "2012-12-25T18:34:23Z", "numComments": "0", "commentsUrl": "
http://api.programmableweb.com/mashups/api-christmas/comments", "tags": [ "aggregate", "christmas", "fun", "photo", "social" ], "apis": [ { "name": "Instagram", "url": "http://www.progra
mmableweb.com/api/instagram" }, "updated": "2012-12-25T18:34:23Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc1d')", "id": "http://www.programmableweb.com/mashup/askstuff-worldcat-twitter-search", "title": "#Ask4Stuff: WorldCat Twitter Search", "summary": "
Ask4Stuff is a new, Twitter-based service that returns a WorldCat search when you send a tweet with the tag #Ask4Stuff.", "rating": "3.5", "name": "#Ask4Stuff: WorldCat Twitter Search", "la
bel": "#Ask4Stuff: WorldCat Twitter Search", "author": "Unknown", "description": "Ask4Stuff is a new, Twitter-based service that returns a WorldCat search when you send a tweet with the ta
g #Ask4Stuff.", "type": "", "downloads": "0", "useCount": "337", "sampleUrl": "http://community.oclc.org/cooperative/2010/06/sometimes-the-internet-is-just-not-big-enough-for-me.html", "da
teModified": "2010-07-22T21:35:06Z", "numComments": "0", "commentsUrl": "http://api.programmableweb.com/mashups/ask4stuff-worldcat-twitter-search/comments", "tags": [ "books", "library",
"search", "Twitter" ], "apis": [ { "name": "Twitter", "url": "http://www.programmableweb.com/api/twitter" }, { "name": "WorldCat Search", "url": "http://www.programmableweb.com/api/worldca
t-search" } ], "updated": "2010-07-22T21:35:06Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc1f')", "id": "http://www.programmableweb.com/mashup/beermap-the-top-2500-beers-on-twitter", "title": "#BeerMap - The Top 2,500 Beers on Twitter", "su
mmary": "To discover the most popular beer in over 15000 cities across the US, Canada, the UK, and Ireland, PeekAnalytics mapped the consumer followers of over 2500 beer and microbrewery Twit
ter accounts.", "rating": "5.0", "name": "#BeerMap - The Top 2,500 Beers on Twitter", "label": "#BeerMap - The Top 2,500 Beers on Twitter", "author": "Unknown", "description": "To discover
the most popular beer in over 15000 cities across the US, Canada, the UK, and Ireland, PeekAnalytics mapped the consumer followers of over 2500 beer and microbrewery Twitter accounts.", "typ
e": "", "downloads": "0", "useCount": "0", "sampleUrl": "http://peekanalytics.com/beermap", "dateModified": "2013-09-20T09:30:37Z", "numComments": "0", "commentsUrl": "http://api.progr
ammableweb.com/mashups/beermap-the-top-2500-beers-on-twitter/comments", "tags": [ "analytics", "beer", "Fun", "peekanalytics" ], "apis": [ { "name": "Google Maps", "url": "http://www.progr
ammableweb.com/api/google-maps" }, { "name": "PeekYou Social Analytics", "url": "http://www.programmableweb.com/api/peekyou-social-analytics" }, { "name": "Twitter", "url": "http://www.pro
grammableweb.com/api/twitter" }, "updated": "2013-09-20T09:30:37Z" }
{ "_id": "ObjectID('5f838ed46238b12a988dbc1f')", "id": "http://www.programmableweb.com/mashup/docus-pound-docs", "title": "#docs (&quot;pound doc&quot;)", "summary": "Lets a business
share docs from their Microsoft SkyDrive over SNS via Twilio. Go to the app which is running on Windows Azure, set which SkyDrive account to use, and select a public file to share over SNS. C
ustomers (incl. potential customers) can call the Twilio number associated with the #docs deployment and text, set, get, link&quot;link&quot; to get a link to whatever doc you&#amp;#039;re currently s
haring (for deals, specials, marketing info, etc.). For the sample #docs deployment, call my Twilio number (415)599-2671, enter passcode &quot;7392-3266&quot;, and message &quot;i
i
```

Testing scenarios of query system:

Query system for updated year = 2014 for API search:

The screenshot shows a web browser window with the URL `file:///C:/pooja%20data/RIT%20sem%204/Topics%20in%20DM%20-%20Web%20Services/Web%20Services%20Assignments/Assignment_3/code/homepag...`. The page title is "Programmable Web Database Search". Below the title, there are search filters: "API Search", " Mashup Search", and " Keywords Search". The "API Search" filter is selected. The search results are displayed in a table with columns: "2014", "Protocols", "Category", and "Tags". The "2014" column contains a dropdown menu with "Select one..." and "Rating". The "Find APIs" button is visible. The search results list includes "Yodlee Interactive", "LaCuenta", "InvoicesOnline", "RoninApp", "SmallInvoice", "National Terrorism Advisory System", "C3PI RxImageAccess", "Health and Human Services", "Syndication", and "PopClogs". The "LaCuenta" entry is selected, and its details are shown on the right. The details include: ID: `http://www.programmableweb.com/api/lacuenta`, Title: "LaCuenta", Summary: "Business Invoice Service", Rating: "LaCuenta", Author: "---", Description: "LaCuenta is an invoicing service used to create and manage custom invoices with on computers or iPads. Users can scan products, manage stock and print receipts with the integrated point of sales system. The LaCuenta API uses REST calls, returns JSON, and allows users to get API keys, interact with printers, create documents, create customers, and perform other calls. An account is required with service.", Type: "1", Downloads: "---", Use count: "---", Sample URL: `http://www.lacuenta.com/wiki/`, Download URL: "---", Date Modified: "2014-01-01 08:16:28", Remote Feed: "---", Number of Comments: "---", Comments URL: `http://api.programmableweb.com/apis/lacuenta/comments`, Tags: "accounting,analytics.financial.invoicing.merchant.sales".

Verification with database:

```
Command Prompt - mongo.exe
> db.apis.find({'updated': {'$gte': '2014-01-01T00:00:00Z', '$lt': '2015-01-01T00:00:00Z'}});
({ "id": "ObjectID('58f38eda6238b12a988de411')", "id": "http://www.programmableweb.com/api/yodlee-interactive", "title": "Yodlee Interactive", "summary": "Personal Financial Data Service", "rating": "Yodlee Interactive", "label": "Yodlee Interactive", "author": "", "description": "Yodlee is a financial service provider that serves banks and financial services firms. The service aims to provide a clear financial picture of consumers to optimize sales and solutions to best suit customer needs. The Yodlee Interactive API is a REST based service that allows third-party applications to interact with the Yodlee platform to create and manipulate customer data. The API can be used to categorize transactions, reduce fraud, drive activation, enable new FinApps, and grow a user base. An account is required with service.", "type": "1", "downloads": "", "useCount": "", "sampleUrl": "http://developer.yodlee.com", "downloadUrl": "", "dateModified": "2014-01-01T08:15:57Z", "remoteFeed": "", "numComments": "", "commentsUrl": "http://api.programmableweb.com/apis/yodlee-interactive/comments", "tags": [ "analytics", "consumer", "database", "financial", "merchant", "sales" ], "category": "Financial", "protocols": "REST", "serviceEndpoint": "", "version": "", "wsdl": "", "dataFormats": "JSON", "apiGroups": "", "example": "", "clientInstall": "", "authentication": "HTTP Basic Authentication over SSL", "ssl": "", "readOnly": "", "vendorApiKits": "", "communityApiKits": "", "blog": "", "forum": "", "support": "http://www.yodlee.com/support/", "accountReq": "Yes", "commercial": "Yes", "provider": "http://www.yodlee.com", "managedBy": "", "nonCommercial": "", "dataLicensing": "" }, { "id": "ObjectID('58f38eda6238b12a988de367')", "id": "http://www.programmableweb.com/api/lacuenta", "title": "LaCuenta", "summary": "Business Invoice Service", "rating": "LaCuenta", "label": "LaCuenta", "author": "", "description": "LaCuenta is an invoicing service used to create and manage custom invoices with on computers or iPads. Users can scan products, manage stock and print receipts with the integrated point of sales system. The LaCuenta API uses REST calls, returns JSON, and allows users to get API keys, interact with printers, create documents, create customers, and perform other calls. An account is required with service.", "type": "1", "downloads": "", "useCount": "", "sampleUrl": "http://www.lacuenta.com/wiki/", "downloadUrl": "", "dateModified": "2014-01-01T08:16:28Z", "remoteFeed": "", "numComments": "", "commentsUrl": "http://api.programmableweb.com/apis/lacuenta/comments", "tags": [ "accounting", "analytics", "financial", "invoicing", "merchant", "sales" ], "category": "Financial", "protocols": "REST", "serviceEndpoint": "", "version": "", "wsdl": "", "dataFormats": "JSON", "apiGroups": "", "example": "", "clientInstall": "", "authentication": "", "ssl": "", "readOnly": "", "vendorApiKits": "", "communityApiKits": "", "blog": "", "forum": "", "support": "http://www.lacuenta.com", "accountReq": "Yes", "commercial": "Yes", "provider": "http://www.lacuenta.com", "managedBy": "", "nonCommercial": "", "dataLicensing": "", "fees": "", "limits": "", "terms": "" }, { "id": "ObjectID('58f38eda6238b12a988de40b')", "id": "http://www.programmableweb.com/api/invoicesonline", "title": "InvoicesOnline", "summary": "Business Invoice Service", "rating": "InvoicesOnline", "label": "InvoicesOnline", "author": "", "description": "InvoicesOnline is an invoicing service designed for small business that also offers a customer database feature. The InvoicesOnline API allows users to integrate the invoicing service into third-party applications. The service uses REST calls and returns JSON. An account is required with service.", "type": "1", "downloads": "", "useCount": "", "sampleUrl": "https://www.invoicesonline.co.za/api-documentation", "downloadUrl": "", "dateModified": "2014-01-01T08:18:45Z", "remoteFeed": "", "numComments": "", "commentsUrl": "http://api.programmableweb.com/apis/invoicesonline/comments", "tags": [ "accounting", "analytics", "financial", "invoicing", "merchant", "sales" ], "category": "Financial", "protocols": "REST", "serviceEndpoint": "", "version": "", "wsdl": "", "dataFormats": "JSON", "apiGroups": "", "example": "", "clientInstall": "", "authentication": "", "ssl": "", "readOnly": "", "vendorApiKits": "", "communityApiKits": "", "blog": "", "forum": "", "support": "info@invoicesonline.co.za", "accountReq": "Yes", "commercial": "Yes", "provider": "http://www.invoicesonline.co.za", "managedBy": "", "nonCommercial": "", "dataLicensing": "", "fees": "", "limits": "", "terms": "", "company": "", "updated": "2014-01-01T08:18:45Z" }, { "id": "ObjectID('58f38eda6238b12a988df7fb')", "id": "http://www.programmableweb.com/api/roninapp", "title": "RoninApp", "summary": "Online Invoicing and Time Tracking Service", "rating": "RoninApp", "label": "RoninApp", "author": "", "description": "Ronin is a time tracking and invoice service designed for small businesses and freelance workers. Ronin manages client expenses, invoices and estimates. The RoninApp API provides programmatic access to account data through REST calls and returns JSON or JSOUP. An account is required with service. An SSL is used for authentication.", "type": "1", "downloads": "", "useCount": "", "sampleUrl": "http://www.roninapp.com/api", "downloadUrl": "", "dateModified": "2014-01-01T08:19:15Z", "remoteFeed": "", "numComments": "", "commentsUrl": "http://api.programmableweb.com/apis/roninapp/comments", "tags": [ "accounting", "analytics", "financial", "invoicing", "merchant", "sales" ], "category": "Financial", "protocols": "REST", "serviceEndpoint": "", "version": "", "wsdl": "", "dataFormats": "JSON, JSOUP", "apiGroups": "", "example": "", "clientInstall": "", "authentication": "HTTP Basic Authentication over SSL", "ssl": "Yes", "readOnly": "Yes", "vendorApiKits": "", "communityApiKits": "PHP, Dialog", "forum": "", "support": "support@roninapp.com", "accountReq": "", "commercial": "", "provider": "http://www.roninapp.com", "managedBy": "", "nonCommercial": "", "dataLicensing": "", "fees": "", "limits": "", "terms": "" }
```

Query system for updated year = 2014 and protocols = REST for API search:

homepage.html

file:///C:/pooja%20data/RIT%20sem%204/Topics%20in%20DM%20-%20Web%20Services/Web%20Services%20Assignments/Assignment_3/code/homepag...

Programmable Web Database Search

API Search Mashup Search Keywords Search

2014 REST Category Tags

Select one... Rating Find APIs

Yodlee Interactive
LaCuenta
InvoicesOnline
RoninApp
SmallInvoice
C3PI RxImageAccess
Health and Human Services Syndication
PopClogs
RBL Watcher

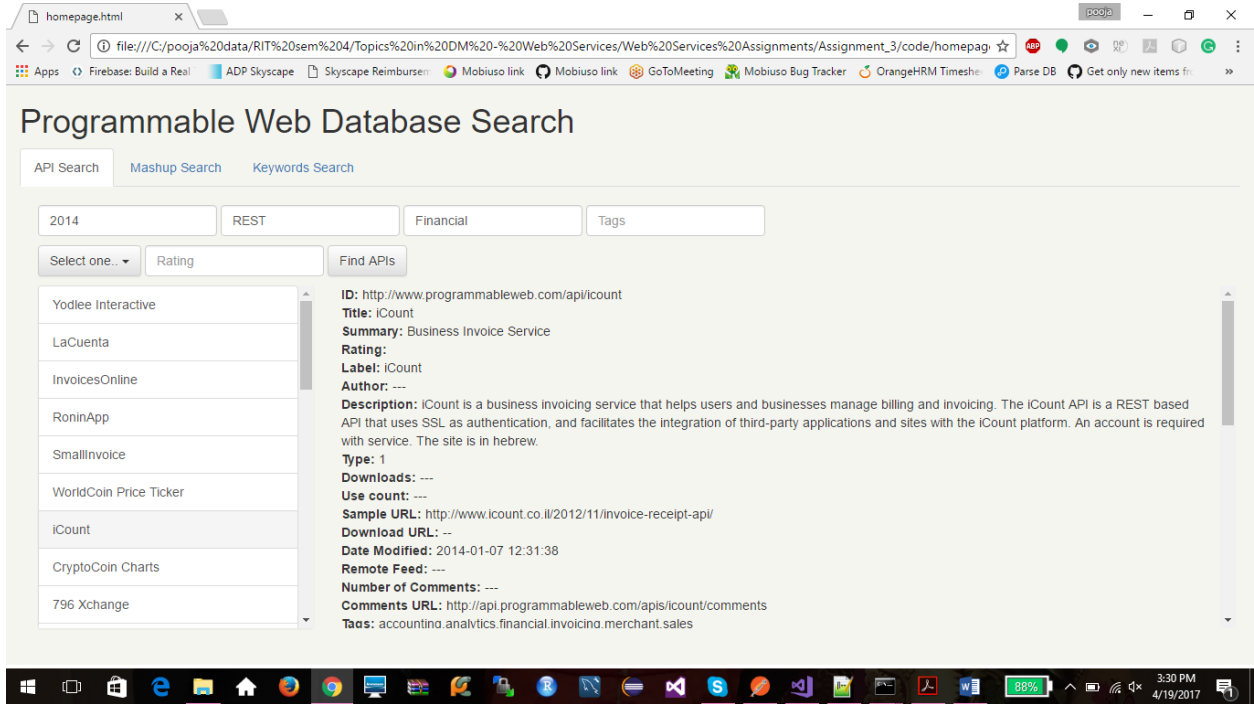
ID: http://www.programmableweb.com/api/smallinvoice
Title: SmallInvoice
Summary: Business Invoice Service
Rating: ---
Label: SmallInvoice
Author: ---
Description: SmallInvoice is an invoice service designed for small and medium sized businesses, as well as freelance workers. The base service is free to use, and additional tiers of service are available. The SmallInvoice API uses REST calls and allows users to perform tasks involving user accounts and invoices. Sample calls include creating invoices, submitting invoices, accepting offers, drafting receipts, and other calls. An account is required with service.
Type: 1
Downloads: ---
Use count: ---
Sample URL: http://www.smallinvoice.de/api/general/overview
Download URL: ---
Date Modified: 2014-01-01 08:19:27
Remote Feed: ---
Number of Comments: ---
Comments URL: http://api.programmableweb.com/ais/smallinvoice/comments

89% 3:30 PM 4/19/2017

Verification with database:

```
Command Prompt - mongo.exe
> db.apis.find({'updated': {'$gte': '2014-01-01T00:00:00Z', '$lt': '2015-01-01T00:00:00Z'}, 'protocols': '/REST/i'})
{ "_id" : "58f38edc6238b12a988e0411", "id" : "http://www.programmableweb.com/api/yodlee-interactive", "title" : "Yodlee Interactive", "summary" : "Personal Financial Data Service", "rating" : "", "name" : "Yodlee Interactive", "label" : "Yodlee Interactive", "author" : "", "description" : "Yodlee is a financial service provider that serves banks and financial services firms. The service aims to provide a full financial picture of consumers to optimize sales and solutions to best suit customer needs. The Yodlee Interactive API is a REST based service that allows third-party applications to interact with the Yodlee platform to create and manipulate customer data. The API can be used to categorize transactions, reduce fraud, drive activation, enable new FinApps, and grow a user base. An account is required with service.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "http://developer.yodlee.com", "downloadUrl" : "", "dateModified" : "2014-01-01T08:15:57Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/yodlee-interactive/comments", "tags" : [ "analytics", "consumer", "database", "financial", "merchant", "sales" ], "category" : "Financial", "protocols" : "REST", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "JSON", "apigroups" : "", "example" : "", "clientInstall" : "", "authentication" : "HTTP Basic Authentication over SSL", "ssl" : "", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "http://www.yodlee.com/support/", "accountReq" : "Yes", "commercial" : "", "provider" : "http://www.yodlee.com", "managedBy" : "", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-01T08:15:57Z" }
{ "_id" : "58f38ed86238b12a988de367", "id" : "http://www.programmableweb.com/api/lacuenta", "title" : "LaCuenta", "summary" : "Business Invoice Service", "rating" : "", "name" : "LaCuenta", "label" : "LaCuenta", "author" : "", "description" : "LaCuenta is an invoicing service used to create and manage custom invoices with on computers or iPads. Users can scan products, manage stock and print receipts with the integrated point of sales system. The LaCuenta API uses REST calls, returns JSON, and allows users to get API keys, interact with printers, create documents, create customers, and perform other calls. An account is required with service.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "http://www.lacuenta.com/wiki/", "downloadUrl" : "", "dateModified" : "2014-01-01T08:16:28Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/lacuenta/comments", "tags" : [ "accounting", "analytics", "financial", "invoicing", "merchant", "sales" ], "category" : "Financial", "protocols" : "REST", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "JSON", "apigroups" : "", "example" : "", "clientInstall" : "", "authentication" : "", "ssl" : "", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "support@lacuenta.com", "accountReq" : "Yes", "commercial" : "", "provider" : "http://www.lacuenta.com", "managedBy" : "", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-01T08:16:28Z" }
{ "_id" : "58f38eda6238b12a988de04b", "id" : "http://www.programmableweb.com/api/invoicesonline", "title" : "InvoicesOnline", "summary" : "Business Invoice Service", "rating" : "", "name" : "InvoicesOnline", "label" : "InvoicesOnline", "author" : "", "description" : "InvoicesOnline is an invoicing service designed for small business that also offers a customer database feature. The InvoicesOnline API allows users to integrate the invoicing service into third-party applications. The service uses REST calls and returns JSON. An account is required with service.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "https://www.invoicesonline.co.za/api-documentation", "downloadUrl" : "", "dateModified" : "2014-01-01T08:18:45Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/invoicesonline/comments", "tags" : [ "accounting", "analytics", "financial", "invoicing", "merchant", "sales" ], "category" : "Financial", "protocols" : "REST", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "JSON", "apigroups" : "", "example" : "", "clientInstall" : "", "authentication" : "", "ssl" : "", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "info@invoicesonline.co.za", "accountReq" : "Yes", "commercial" : "", "provider" : "http://www.invoicesonline.co.za", "managedBy" : "", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-01T08:18:45Z" }
{ "_id" : "58f38eda6238b12a988df7b", "id" : "http://www.programmableweb.com/api/roninapp", "title" : "RoninApp", "summary" : "Online Invoicing and Time Tracking Service", "rating" : "", "name" : "RoninApp", "label" : "RoninApp", "author" : "", "description" : "Ronin is a time tracking and invoice service designed for small businesses and freelance workers. Ronin manages client projects, invoices and estimates. The RoninApp API provides programmatic access to account data through REST calls and a returns JSON or JSONP. An account is required with service, and SSL is used for authentication.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "http://www.roninapp.com/api", "downloadUrl" : "", "dateModified" : "2014-01-01T08:19:15Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/roninapp/comments", "tags" : [ "accounting", "analytics", "financial", "invoicing", "merchant", "sales" ], "category" : "Financial", "protocols" : "REST", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "JSON, JSONP", "apigroups" : "", "example" : "", "clientInstall" : "", "authentication" : "HTTP Basic Authentication over SSL", "ssl" : "Yes", "readonly" : "Yes", "vendorApiKits" : "", "communityApiKits" : "PHP", "blog" : "", "forum" : "", "support" : "support@roninapp.com", "accountReq" : "", "commercial" : "", "provider" : "http://www.roninapp.com", "managedBy" : "", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "" }
```


Query system for updated year = 2014, protocols = REST and category = Financial for API search:



Verification with database:

```

cmd: curl -s -H "Content-Type: application/json" -d '{"id": "2014-01-01T00:00:00Z", "sdt": "2015-01-01T00:00:00Z", "protocols": "/REST/1", "category": "/Financial/1/1", "rating": "1", "name": "Yodlee Interactive", "label": "Yodlee Interactive", "author": "Yodlee Interactive", "description": "Yodlee is a financial service provider that serves banks and financial services firms. The service aims to provide a full financial picture of consumers to optimize sales and solutions to best suit customer needs. The Yodlee Interactive API is a REST based service that also allows third party applications to access the Yodlee platform and manipulate customer data. The API can be used to create, update, delete, and retrieve customer data, drive a campaign, enable new FinApps to grow a user base. An account is required with service.", "type": "1", "downloads": "http://www.yodlee.com/api/yodleeinteractive", "useCount": "sampleUrl", "dateModified": "2014-01-01T00:00:00Z", "remoteFeed": "http://www.yodlee.com/api/yodleeinteractive/comments", "tags": ["analytics", "consumer", "database", "financial", "merchant", "sales"], "category": "Financial", "protocols": "REST", "serviceEndpoint": "http://www.yodlee.com/api/yodleeinteractive", "version": "1", "dataformats": "JSON", "apiGroups": "example", "clientInstall": "http://www.yodlee.com/support", "authentication": "HTTP Basic Authentication over SSL", "ssl": "true", "readOnly": "true", "vendorAPIKeys": "communityAPIKeys", "blog": "http://www.yodlee.com/support", "support": "http://www.yodlee.com/support", "accountReq": "Yes", "commercial": "true", "provider": "http://www.yodlee.com/api/yodleeinteractive", "managedBy": "http://www.yodlee.com/api/yodleeinteractive", "dataCensing": "http://www.yodlee.com/api/yodleeinteractive", "limits": "http://www.yodlee.com/api/yodleeinteractive", "terms": "http://www.yodlee.com/api/yodleeinteractive", "fees": "http://www.yodlee.com/api/yodleeinteractive", "updated": "2014-01-01T00:00:00Z"}'
id: "2014-01-01T00:00:00Z", "sdt": "2015-01-01T00:00:00Z", "protocols": "/REST/1", "category": "/Financial/1/1", "rating": "1", "name": "Yodlee Interactive", "label": "Yodlee Interactive", "author": "Yodlee Interactive", "description": "Yodlee is a financial service provider that serves banks and financial services firms. The service aims to provide a full financial picture of consumers to optimize sales and solutions to best suit customer needs. The Yodlee Interactive API is a REST based service that also allows third party applications to access the Yodlee platform and manipulate customer data. The API can be used to create, update, delete, and retrieve customer data, drive a campaign, enable new FinApps to grow a user base. An account is required with service.", "type": "1", "downloads": "http://www.yodlee.com/api/yodleeinteractive", "useCount": "sampleUrl", "dateModified": "2014-01-01T00:00:00Z", "remoteFeed": "http://www.yodlee.com/api/yodleeinteractive/comments", "tags": ["analytics", "consumer", "database", "financial", "merchant", "sales"], "category": "Financial", "protocols": "REST", "serviceEndpoint": "http://www.yodlee.com/api/yodleeinteractive", "version": "1", "dataformats": "JSON", "apiGroups": "example", "clientInstall": "http://www.yodlee.com/support", "authentication": "HTTP Basic Authentication over SSL", "ssl": "true", "readOnly": "true", "vendorAPIKeys": "communityAPIKeys", "blog": "http://www.yodlee.com/support", "support": "http://www.yodlee.com/support", "accountReq": "Yes", "commercial": "true", "provider": "http://www.yodlee.com/api/yodleeinteractive", "managedBy": "http://www.yodlee.com/api/yodleeinteractive", "dataCensing": "http://www.yodlee.com/api/yodleeinteractive", "limits": "http://www.yodlee.com/api/yodleeinteractive", "terms": "http://www.yodlee.com/api/yodleeinteractive", "fees": "http://www.yodlee.com/api/yodleeinteractive", "updated": "2014-01-01T00:00:00Z"}
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id: "2014-01-01T00:00:00Z", "sdt": "2015-01-01T00:00:00Z", "protocols": "/REST/1", "category": "/Business/1/1", "rating": "1", "name": "RoninApp", "label": "RoninApp", "author": "RoninApp", "description": "RoninApp is an online invoicing and time tracking service designed for small business and freelance workers. Ronin manages invoices, projects, invoices and estimates. The RoninApp API provides programmatic access to account data through REST calls and returns JSON or JSONP. An account is required with service, and SSL is used for authentication.", "type": "1", "downloads": "http://www.roninapp.com/api", "useCount": "sampleUrl", "dateModified": "2014-01-01T00:00:00Z", "remoteFeed": "http://www.roninapp.com/api/comments", "tags": ["accounting", "analytics", "financial", "invoicing", "merchant", "sales"], "category": "Business", "protocols": "REST", "serviceEndpoint": "http://www.roninapp.com/api", "version": "1", "dataformats": "JSON, JSONP", "apiGroups": "example", "clientInstall": "http://www.roninapp.com/api", "authentication": "HTTP Basic Authentication over SSL", "ssl": "true", "readOnly": "true", "vendorAPIKeys": "communityAPIKeys", "blog": "http://www.roninapp.com/api", "support": "http://www.roninapp.com/api", "accountReq": "Yes", "commercial": "true", "provider": "http://www.roninapp.com/api", "managedBy": "http://www.roninapp.com/api", "dataCensing": "http://www.roninapp.com/api", "limits": "http://www.roninapp.com/api", "terms": "http://www.roninapp.com/api", "fees": "http://www.roninapp.com/api", "updated": "2014-01-01T00:00:00Z"}
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```

Query system for updated year = 2014, protocols = REST, category = Financial and tags containing “sales”, “merchant” for API search:

homepage.html

file:///C:/pooja%20data/RIT%20sem%204/Topics%20in%20DM%20-%20Web%20Services/Web%20Services%20Assignments/Assignment_3/code/homepag

Apps | Firebase: Build a Real | ADP Skyscape | Skyscape Reimbursen | Mobius link | Mobius link | GoToMeeting | Mobius Bug Tracker | OrangeHRM Timeshe | Parse DB | Get only new items fr

Programmable Web Database Search

API Search | Mashup Search | Keywords Search

2014 | REST | Financial | sales merchant

Select one... | Rating | Find APIs

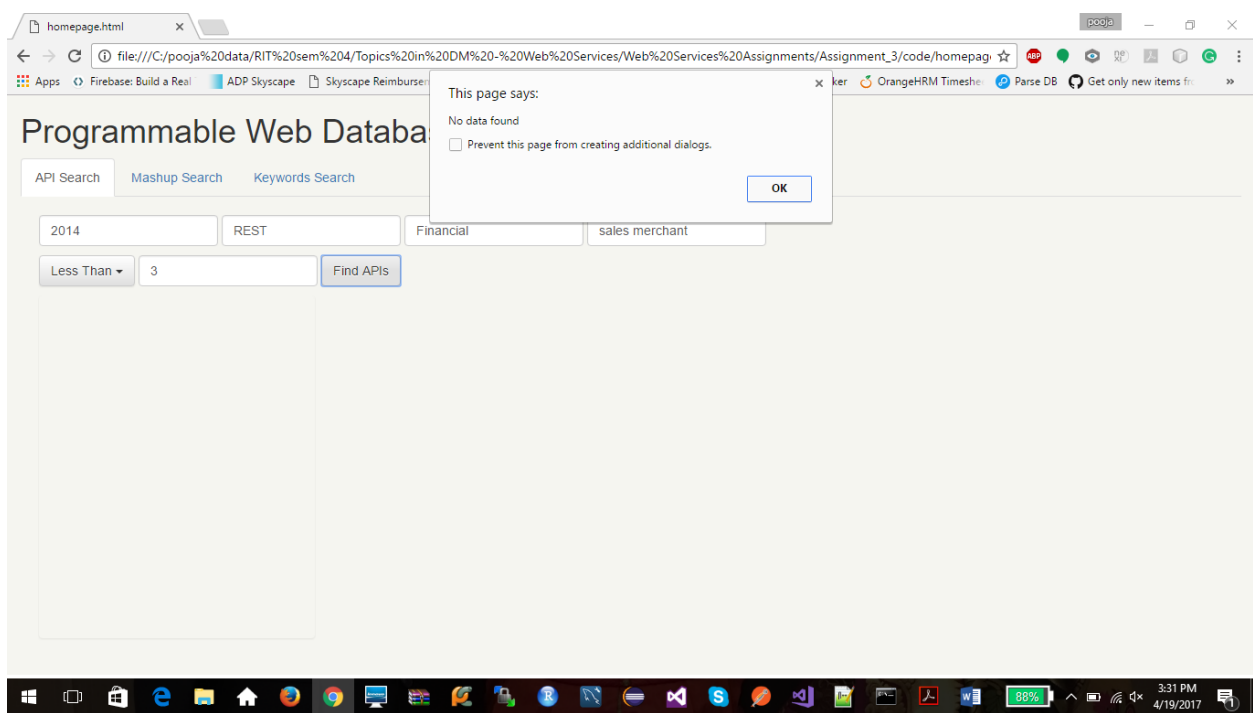
- Yodlee Interactive
- LaCuenta
- InvoicesOnline
- RoninApp
- SmallInvoice
- iCount
- Currenex

ID: http://www.programmableweb.com/api/currenex
Title: Currenex
Summary: Security Pricing Service
Rating:
Label: Currenex
Author: ---
Description: Currenex is a financial pricing service that offers Executable Streaming Prices (ESP), Algorithmic Trading, Benchmark Trading, Request For Streams (RFS), and brokerage functionality with integrated Straight Through Processing (STP). The Currenex API is available through REST calls, returning JSON for many of the functions, and follows the FIX standard. An account is required with service.
Type: 1
Downloads: ---
Use count: ---
Sample URL: http://currenex.com/trading_services_api_integration.html
Download URL: ---
Date Modified: 2014-01-21 12:45:05
Remote Feed: ---
Number of Comments: ---
Comments URL: http://api.programmableweb.com/apis/currenex/comments
Tags: analytics.financial.merchant.prices.sales.trading

Verification with database:

```
Command Prompt - mongo.exe
> db.apiDB.find({'updated': {'$gte': '2014-01-01T00:00:00Z', '$lt': '2015-01-01T00:00:00Z'}, 'protocols': '/REST/', 'category': '/Financial/', 'tags': {'$all': ['/sales/', '/merchant/']}});
{ "_id" : ObjectId("58f38ed6238b12a988e0411"), "id" : "http://www.programmableweb.com/api/yodlee-interactive", "title" : "Yodlee Interactive", "summary" : "Personal Financial Data Service", "rating" : "", "name" : "Yodlee Interactive", "label" : "Yodlee Interactive", "author" : "", "description" : "Yodlee is a financial service provider that serves banks and financial services firms. The service aims to provide a real-time financial picture of consumers to optimize sales and solutions to best suit customer needs. The Yodlee Interactive API is a REST based service that allows third-party applications to interact with the Yodlee platform to create and manipulate customer data. The API can be used to categorize transactions, reduce fraud, drive activation, enable new FinApps, and grow a user base. An account is required with service.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "http://developer.yodlee.com", "downloadUrl" : "", "dateModified" : "2014-01-01T08:15:57Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/yodlee-interactive/comments", "tags" : [ "analytics", "consumer", "database", "financial", "merchant", "sales" ], "category" : "Financial", "protocols" : "REST", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "JSON", "apigroups" : "", "example" : "", "clientInstall" : "", "authentication" : "HTTP Basic Authentication over SSL", "ssl" : "", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "http://www.yodlee.com/support/", "accountReq" : "Yes", "commercial" : "", "provider" : "http://www.yodlee.com", "managedBy" : "", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-01T08:15:57Z" }
{ "_id" : ObjectId("58f38ed6238b12a988e0367"), "id" : "http://www.programmableweb.com/api/lacuenta", "title" : "LaCuenta", "summary" : "Business Invoice Service", "rating" : "", "name" : "LaCuenta", "label" : "LaCuenta", "author" : "", "description" : "LaCuenta is an invoicing service used to create and manage custom invoices with on computers or iPads. Users can scan products, manage stock and print receipts with the integrated point of sales system. The Lacuenta API uses REST calls, returns JSON, and allows users to get API keys, interact with printers, create documents, create customers, and perform other calls. An account is required with service.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "http://www.lacuenta.com/wiki/", "downloadUrl" : "", "dateModified" : "2014-01-01T08:16:28Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/lacuenta/comments", "tags" : [ "accounting", "analytics", "financial", "invoicing", "merchant", "sales" ], "category" : "Financial", "protocols" : "REST", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "JSON", "apigroups" : "", "example" : "", "clientInstall" : "", "authentication" : "HTTP Basic Authentication over SSL", "ssl" : "", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "support@lacuenta.com", "accountReq" : "Yes", "commercial" : "", "provider" : "http://www.lacuenta.com", "managedBy" : "", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-01T08:16:28Z" }
{ "_id" : ObjectId("58f38ed6238b12a988e04b"), "id" : "http://www.programmableweb.com/api/invoicesonline", "title" : "InvoicesOnline", "summary" : "Business Invoice Service", "rating" : "", "name" : "InvoicesOnline", "label" : "InvoicesOnline", "author" : "", "description" : "InvoicesOnline is an invoicing service designed for small business that also offers a customer database feature. The InvoicesOnline API allows users to integrate the invoicing service into third-party applications. The service uses REST calls and returns JSON. An account is required with service.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "https://www.invoicesonline.co.za/api-documentation", "downloadUrl" : "", "dateModified" : "2014-01-01T08:18:45Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/invoicesonline/comments", "tags" : [ "accounting", "analytics", "financial", "invoicing", "merchant", "sales" ], "category" : "Financial", "protocols" : "REST", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "JSON", "apigroups" : "", "example" : "", "clientInstall" : "", "authentication" : "HTTP Basic Authentication over SSL", "ssl" : "", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "info@invoicesonline.co.za", "accountReq" : "Yes", "commercial" : "", "provider" : "http://www.invoicesonline.co.za", "managedBy" : "", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-01T08:18:45Z" }
{ "_id" : ObjectId("58f38eda6238b12a988d7fb"), "id" : "http://www.programmableweb.com/api/roninapp", "title" : "RoninApp", "summary" : "Online Invoicing and Time Tracking Service", "rating" : "", "name" : "RoninApp", "label" : "RoninApp", "author" : "", "description" : "Ronin is a time tracking and invoice service designed for small businesses and freelance workers. Ronin manages clients, projects, invoices and estimates. The RoninApp API provides programmatic access to account data through REST calls and returns JSON or JSONP. An account is required with service, and SSL is used for authentication.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "http://www.roninapp.com/api", "downloadUrl" : "", "dateModified" : "2014-01-01T08:19:15Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/roninapp/comments", "tags" : [ "accounting", "analytics", "financial", "invoicing", "merchant", "sales" ], "category" : "Financial", "protocols" : "REST", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "JSON", "apigroups" : "", "example" : "", "clientInstall" : "", "authentication" : "HTTP Basic Authentication over SSL", "ssl" : "Yes", "readonly" : "Yes", "vendorApiKits" : "", "communityApiKits" : "PHP", "blog" : "", "forum" : "", "support" : "support@roninapp.com", "accountReq" : "Yes", "commercial" : "Yes", "provider" : "http://www.roninapp.com", "managedBy" : "", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-01T08:19:15Z" }
```

Query system for updated year = 2014, protocols = REST, category = Financial and tags containing “sales”, “merchant” and ratings less than 3.0 for API search:



Verification with database:

```
Command Prompt - mongo.exe
> db.apis.find({"updated": {"$gte": "2014-01-01T00:00:00Z", "$lt": "2015-01-01T00:00:00Z"}, "protocols": "/REST/i", "category": "/financial/i", "tags": {"$all": ["/sales/i", "/merchant/i"]}, "rating": {"$lte": "3.0"}}).count();
0
>
```


Query system for updated year = 2014 and rating less than 3.2 for API search:

homepage.html x

file:///C:/pooja%20data/RIT%20sem%204/Topics%20in%20DM%20-%20Web%20Services/Web%20Services%20Assignments/Assignment_3/code/homepag...

Programmable Web Database Search

API Search Mashup Search Keywords Search

2014 Protocols Category Tags

Less Than 3.2 Find APIs

Adbeat

MobileDevHQ

FraudAssets

ID: http://www.programmableweb.com/api/mobiledevhq
Title: MobileDevHQ
Summary: Mobile application marketing platform
Rating: 1.0
Label: MobileDevHQ
Author: ---
Description: MobileDevHQ is a mobile application marketing platform. MobileDevHQ offers various features and services to application publishers, marketers, and developers to increase application downloads. The MobileDevHQ API allows developers to access and integrate the functionality of MobileDevHQ with other applications. Public documentation is not available; API access comes with account service.
Type: 1
Downloads: ---
Use count: ---
Sample URL: http://www.mobiledevhq.com/app_store_optimization/plans
Download URL: ---
Date Modified: 2014-01-18 12:57:11
Remote Feed: ---
Number of Comments: ---
Comments URL: http://api.programmableweb.com/apis/mobiledevhq/comments
Tags: advertising, application, enterprise, marketing, mobile

Verification with database:

```
Command Prompt - mongore
> use apiDB
> find({'updated': {'$gte': '2014-01-01T00:00:00Z', '$lt': '2015-01-01T00:00:00Z'}, 'rating': {'$ne': '', '$lt': '3.2'}})
{ "_id" : "ObjectID('58f38ed46238b12a988dd70')", "id" : "http://www.programmableweb.com/api/adbeat", "title" : "Adbeat", "summary" : "Advertising information service", "rating" : "1.0", "name" : "Adbeat", "label" : "Adbeat", "author" : "", "description" : "Adbeat is a service that furnishes users with useful information on other peoples&#amp;#039; ad campaigns. It can find the top u...", "downloadUrl" : "", "dateModified" : "2014-01-10T02:41:55Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/adbeat/comments", "tags" : [ "adver...", "enterprise" ], "category" : "Advertising", "protocols" : "REST", "serviceEndpoint" : "http://api.adbeat.com/v3/", "version" : "", "wsdl" : "", "dataFormats" : "JSON", "apiGroups" : "...", "example" : "", "clientInstall" : "", "authentication" : "", "ssl" : "", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "", "accountReq" : "", "commercial" : "", "provider" : "http://www.adbeat.com/", "managedBy" : "Adbeat", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-10T02:41:55Z" }
{ "_id" : "ObjectID('58f38ed6238b12a988de980')", "id" : "http://www.programmableweb.com/api/mobiledevhq", "title" : "MobileDevHQ", "summary" : "Mobile application marketing platform", "rating" : "1.0", "name" : "MobileDevHQ", "label" : "MobileDevHQ", "author" : "", "description" : "MobileDevHQ is a mobile application marketing platform. MobileDevHQ offers various features and servic...", "downloadUrl" : "", "dateModified" : "2014-01-18T12:57:11Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/mobiledevhq/comments", "tags" : [ "advertising", "application", "enterprise", "marketing", "mobile" ], "category" : "Enterprise", "protocols" : "", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "", "apiGroups" : "", "example" : "", "clientInstall" : "No", "authentication" : "", "ssl" : "", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "", "accountReq" : "Yes", "commercial" : "", "provider" : "http://www.mobiledevhq.com/", "managedBy" : "", "nonCommercial" : "", "dataLicensing" : "", "fees" : "http://www.mobiledevhq.com/app_store_optimization/plans", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-18T12:57:11Z" }
{ "_id" : "ObjectID('58f38ed76238b12a988dd741')", "id" : "http://www.programmableweb.com/api/fraudassets", "title" : "FraudAssets", "summary" : "BIN verification service", "rating" : "1.0", "name" : "FraudAssets", "label" : "FraudAssets", "author" : "", "description" : "FraudAssets is an online BIN database service that is designed to help card merchants identify and eliminate fraud risks from their business. The service manages a database of bank card data, and amalgamates information from a wide number of contributors and card handlers to maintain a comprehensive and accessible credit card fraud prevention tool. The FraudAssets API uses REST calls, returns XML, and allows users to submit BINs and get back the company information with which to verify the transaction. An account is required with service and an API Key is required for use.", "downloadUrl" : "", "dateModified" : "2014-02-06T04:06:53Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/fraudassets/comments", "tags" : [ "authentication", "creditcard", "financial", "security", "testing", "verification" ], "category" : "Security", "protocols" : "REST", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "XML", "apiGroups" : "", "example" : "", "clientInstall" : "", "authentication" : "", "ssl" : "No", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "info@fraudassets.com", "accountReq" : "Yes", "commercial" : "", "provider" : "http://www.fraudassets.com", "managedBy" : "", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-02-06T04:06:53Z" }
```

Query system for updated year = 2014, protocols = SOAP and ratings greater than 3.2 for API search:

homepage.html

Programmable Web Database Search

API Search Mashup Search Keywords Search

2014 SOAP Category Tags

Greater Than 3.2 Find APIs

UTBox

SMSCluster

BinDB

ID: <http://www.programmableweb.com/api/bindb>
Title: BinDB
Summary: Credit Card Fraud Prevention Service
Rating: 5.0
Label: BinDB
Author: ---
Description: BinDB is a bank identification number database that helps businesses identify credit and debit cards. The BINDB is widely used for fraud protection and credit card payment processing. BinDB provides a flexible API solutions to query the Issuer Identification Number database. An account is required to use the API.
Type: 1
Downloads: ---
Use count: ---
Sample URL: <https://www.bindb.com/custom-portal.html>
Download URL: ---
Date Modified: 2014-01-29 11:38:03
Remote Feed: ---
Number of Comments: ---
Comments URL: <http://api.programmableweb.com/apis/bindb/comments>
Tags: banking, financial, payments, security

Verification with database:

```
Command Prompt - mongo.exe
> db.apidb.find({'updated': {'$gte': '2014-01-01T00:00:00Z'}, '$lt': '2015-01-01T00:00:00Z'}, {'rating': {'$gt': '3.2'}, 'protocols': '/soap/i});
{ "_id" : ObjectId("58f38edc6238b12a988e09c"), "id" : "http://www.programmableweb.com/api/utbox", "title" : "UTBox", "summary" : "Bulk SMS service", "rating" : "4.0", "name" : "UTBox", "label" : "UTBox", "author" : "", "description" : "UTBox provides bulk SMS services that can be integrated into other applications via REST or SOAP API. In addition to sending and receiving SMS, the API allows users to programmatically get delivery receipts, query SMS statuses, set the call back URL, and more. Potential users can contact UTBox for API access.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "http://www.utbox.net/sms-email/sms-api/", "downloadUrl" : "", "dateModified" : "2014-01-17T01:12:29Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/utbox/comments", "tags" : [ "messaging", "sms" ], "category" : "Messaging", "protocols" : "REST, SOAP", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "XML", "apigroups" : "", "example" : "", "clientInstall" : "", "authentication" : "", "ssl" : "", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "", "accountReq" : "", "commercial" : "", "provider" : "http://www.utbox.net/", "managedBy" : "Utbox Pty. Ltd.", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-17T01:12:29Z" }
{ "_id" : ObjectId("58f38edc6238b12a988dfabd"), "id" : "http://www.programmableweb.com/api/smscluster", "title" : "SMSCluster", "summary" : "International bulk SMS service", "rating" : "4.0", "name" : "SMSCluster", "label" : "SMSCluster", "author" : "", "description" : "SMSCluster is an international SMS marketing service that enables users to send bulk SMS to recipients anywhere in the world. It can be used to send alerts, run a marketing campaign, celebrate an event, and perform other mass communication tasks. During development, users can make use of a simulation mode to avoid wasting funds on sending test SMS. The SMSCluster API allows users to send and receive messages as well as check the status of sent messages via REST, SMTP, or SOAP calls. Users can send up to 10,000 texts with a single API request. SMSCluster provides free sample scripts for its API in Java, Ruby, PHP, Python, Perl, and (in the near future) C#. The API type is '1'.", "downloads" : "", "useCount" : "", "sampleUrl" : "http://www.smscluster.com/service/bulk-sms-api.aspx", "downloadUrl" : "", "dateModified" : "2014-01-22T08:42:56Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/smscluster/comments", "tags" : [ "marketing", "messaging", "sms" ], "category" : "Messaging", "protocols" : "REST, SMTP, SOAP", "serviceEndpoint" : "http://sms.smscluster.com/api/", "version" : "", "wsdl" : "", "dataFormats" : "XML", "apigroups" : "", "example" : "", "clientInstall" : "", "authentication" : "", "ssl" : "", "readonly" : "", "vendorApiKits" : "", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "", "accountReq" : "", "commercial" : "", "provider" : "http://www.smscluster.com/", "managedBy" : "TheBasics Technologies", "nonCommercial" : "", "dataLicensing" : "", "fees" : "", "limits" : "", "terms" : "", "company" : "", "updated" : "2014-01-22T08:42:56Z" }
{ "_id" : ObjectId("58f38ed56238b12a988dc362"), "id" : "http://www.programmableweb.com/api/bindb", "title" : "BinDB", "summary" : "Credit Card Fraud Prevention Service", "rating" : "5.0", "name" : "BinDB", "label" : "BinDB", "author" : "", "description" : "BinDB is a bank identification number database that helps businesses identify credit and debit cards. The BINDB is widely used for fraud protection and credit card payment processing. BinDB provides a flexible API solutions to query the Issuer Identification Number database. An account is required to use the API.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "https://www.bindb.com/custom-portal.html", "downloadUrl" : "", "dateModified" : "2014-01-29T11:38:03Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/bindb/comments", "tags" : [ "banking", "financial", "payments", "security" ], "category" : "Security", "protocols" : "REST, SOAP", "serviceEndpoint" : "", "version" : "", "wsdl" : "", "dataFormats" : "XML, JSON", "apigroups" : "", "example" : "", "clientInstall" : "No", "authentication" : "API key, Basic Authentication over SSL, Username and password", "ssl" : "Yes", "readonly" : "Yes", "vendorApiKits" : "PHP, .NET, Perl, Python, Java", "communityApiKits" : "", "blog" : "", "forum" : "", "support" : "https://www.bindb.com/contact.html", "accountReq" : "Yes", "commercial" : "Yes", "provider" : "http://www.bindb.com", "managedBy" : "", "nonCommercial" : "No", "dataLicensing" : "Yes", "fees" : "$198 USD /month", "limits" : "No limits", "terms" : "Listed during registration", "company" : "", "updated" : "2014-01-29T11:38:03Z" }
```

Query system for updated year = 2014 for Mashup search:

homepage.html x

File:///C:/pooja%20data/RIT%20sem%204/Topics%20in%20DM%20-%20Web%20Services/Web%20Services%20Assignments/Assignment_3/code/homepag...

Programmable Web Database Search

API Search Mashup Search Keywords Search

2014 Used APIs Tags Find Mashups

Selectica Integration with DocuSign

Enterprise Networking Solutions & DocuSign

DocuSign for Outlook (Windows)

Bitcoin Calculator

V2 & DocuSign

FBS Data Integration with DocuSign

MCF Technology Solutions + DocuSign

Armanino + DocuSign

DocuSign + Apposite Technology

ID: http://www.programmableweb.com/mashup/v2-docusign

Title: V2 & DocuSign

Summary: V2 designs, builds and deploys CRM, operations and agile business analytics solutions on best-in-class Cloud platforms for global brands and high-growth organizations in the media & entertainment, advertising, sports, luxury and technology industries.

Rating: 3.0

Label: V2 & DocuSign

Author: Unknown

Description: V2 designs, builds and deploys CRM, operations and agile business analytics solutions on best-in-class Cloud platforms for global brands and high-growth organizations in the media & entertainment, advertising, sports, luxury and technology industries.

Type:

Downloads: 0

Use count: 0

Sample URL: https://www.docusign.com/partner/v2

Date Modified: 2014-01-10 00:59:31

Number of Comments: 1

Comments URL: http://api.programmableweb.com/mashups/v2-docusign/comments

Tags: DocuSign, esign, esignature, signature, V2

APIs used:

Name: DocuSign Enterprise URL: http://www.programmableweb.com/api/docusign-enterprise

Verification with database:

```
Command Prompt - mongo.exe
> use mashup0;
> find({"updated":{"$gte":"2014-01-01T00:00:00Z","$lt":"2015-01-01T00:00:00Z"}});
{"_id":"ObjectID('58f38ed6238b12a988dc55f')","id":"http://www.programmableweb.com/mashup/selectica-integration-with-docusign","title":"Selectica Integration with DocuSign","summary":"Streamline all your contract management processes, from request and authoring to negotiation and approval, with Selectica CLM. Selectica provides a one-click access to DocuSign and empowers you to finalize your most critical documents with confidence and ease. Using Selectica CLM with eSignature, you simply fill in the details for signatory parties, select documents to be signed, and leave Selectica to do the rest.", "rating": "5.0", "name": "Selectica Integration with DocuSign", "label": "Selectica Integration with DocuSign", "author": "Unknown", "description": "Streamline all your contract management processes, from request and authoring to negotiation and approval, with Selectica CLM. Selectica provides a one-click access to DocuSign and empowers you to finalize your most critical documents with confidence and ease. Using Selectica CLM with eSignature, you simply fill in the details for signatory parties, select documents to be signed, and leave Selectica to do the rest.", "type": "", "downloads": "0", "useCount": "0", "sampleUrl": "http://www.docusign.com/partner/selectica-contract-lifecycle-management-clm", "dateModified": "2014-01-02T03:51:22Z", "numComments": "1", "commentsUrl": "http://api.programmableweb.com/mashups/selectica-integration-with-docusign/comments", "tags": [ "DocuSign", "esign", "esignature", "Selectica", "signature" ], "apis": [ { "name": "DocuSign Enterprise", "url": "http://www.programmableweb.com/api/docusign-enterprise" } ], "updated": "2014-01-02T03:51:22Z" }
{"_id":"ObjectID('58f38ed6238b12a988dc932')","id":"http://www.programmableweb.com/mashup/enterprise-networking-solutions-docusign","title":"Enterprise Networking Solutions & DocuSign","summary":"ENS-Inc integrates DocuSign's eSignature and transaction management capabilities for many of California's state and local government agencies, accelerating speed-to-results, reducing operating costs, providing accurate and secure transactions, and meeting the needs of their constituency. DocuSign provides the easiest, fastest, and most secure way to send, sign, track, and store documents in the cloud. The security of DocuSign, the global standard for electronic signatures, comprises another piece of today's leading technologies ENS-Inc provides t","rating": "5.0", "name": "Enterprise Networking Solutions & DocuSign", "label": "Enterprise Networking Solutions & DocuSign", "author": "Unknown", "description": "ENS-Inc integrates DocuSign's eSignature and transaction management capabilities for many of California's state and local government agencies, accelerating speed-to-results, reducing operating costs, providing accurate and secure transactions, and meeting the needs of their constituency. DocuSign provides the easiest, fastest, and most secure way to send, sign, track, and store documents in the cloud. The security of DocuSign, the global standard for electronic signatures, comprises another piece of today's leading technologies ENS-Inc provides to protect mission critical data and apps, giving clients the confidence required to focus on the business of the bottom line.", "type": "", "downloads": "0", "useCount": "0", "sampleUrl": "https://www.docusign.com/partner/enterprise-networking-solutions-inc", "dateModified": "2014-01-04T08:20:18Z", "numComments": "1", "commentsUrl": "http://api.programmableweb.com/mashups/enterprise-networking-solutions-docusign/comments", "tags": [ "DocuSign", "ENS", "esign", "esignature", "signature" ], "apis": [ { "name": "DocuSign Enterprise", "url": "http://www.programmableweb.com/api/docusign-enterprise" } ], "updated": "2014-01-04T08:20:18Z" }
{"_id":"ObjectID('58f38ed6238b12a988dc765')","id":"http://www.programmableweb.com/mashup/docusign-for-outlook-windows","title":"DocuSign for Outlook (Windows)", "summary":"With DocuSign for Outlook, you can sign and return email attachments directly from the Outlook desktop client. Click &quot;Sign Attachments&quot; from the ribbon bar on an email message in Outlook to begin signing attachments with DocuSign. Simply drag and drop your signature, initials, or other information onto the documents. Outlook will then automatically create an email reply to the original sender with the signed documents attached.", "type": "", "downloads": "0", "useCount": "0", "sampleUrl": "http://www.docusign.com/partner/docusign-for-outlook-windows", "dateModified": "2014-01-06T07:24:36Z", "numComments": "1", "commentsUrl": "http://api.programmableweb.com/mashups/docusign-for-outlook-windows/comments", "tags": [ "DocuSign", "esign", "esignature", "outlook", "signature" ], "apis": [ { "name": "DocuSign Enterprise", "url": "http://www.programmableweb.com/api/docusign-enterprise" } ], "updated": "2014-01-06T07:24:36Z" }
{"_id":"ObjectID('58f38ed6238b12a988dc0a7')","id":"http://www.programmableweb.com/mashup/bitcoin-calculator","title":"Bitcoin Calculator", "summary":"Simply work out how much your bitcoin is worth in any national currency.", "rating": "5.0", "name": "Bitcoin Calculator", "label": "Bitcoin Calculator", "author": "Unknown", "description": "Simply work out how much your bitcoin is worth in any national currency.", "type": "", "downloads": "0", "useCount": "0", "sampleUrl": "http://www.coindesk.com/calculator/", "dateModified": "2014-01-08T04:52:42Z", "numComments": "1", "commentsUrl": "http://api.programmableweb.com/mashups/bitcoin-calculator/comments", "tags": [ "bitcoin", "calculator", "value" ], "apis": [ { "name": "CoinDesk", "url": "http://www.programmableweb.com/api/coindesk" } ], "updated": "2014-01-08T04:52:42Z" }
{"_id":"ObjectID('58f38ed6238b12a988dc062')","id":"http://www.programmableweb.com/mashup/v2-docusign","title":"V2 & DocuSign", "summary":"V2 designs, builds and deploys CRM, operations and agile business analytics solutions on best-in-class Cloud platforms for global brands and high-growth organizations in the media & entertainment, advertising, sports, luxury and
```

Query system for used APIs containing string “google books” for Mashup search:

The screenshot shows a web browser window with the address bar displaying a file path. The page title is "Programmable Web Database Search". Below the title, there are tabs for "API Search", "Mashup Search", and "Keywords Search". The "Mashup Search" tab is active, showing search results for "google books".

On the left, a list of mashups is shown, including "bookfriend", "Ewelike", "Free eBooks Search", "iKuExplorer", "Mash the Book", "Mobile Public Domain Books", "Noozly", "ReadWhale", and "Search The Web".

The right pane displays detailed information for the selected mashup, "Free eBooks Search". The information includes:

- ID:** http://www.programmableweb.com/mashup/free-ebooks-search
- Title:** Free eBooks Search
- Summary:** Google Books takes a couple of search steps to show if an ebook is available for free download in PDF or EPUB format. This app lets you find free eBooks from the Google Books collection in a single step.
- Rating:** 5.0
- Label:** Free eBooks Search
- Author:** Unknown
- Description:** Google Books takes a couple of search steps to show if an ebook is available for free download in PDF or EPUB format. This app lets you find free eBooks from the Google Books collection in a single step.
- Type:**
- Downloads:** 0
- Use count:** 0
- Sample URL:** http://aplab.azurewebsites.net/gb.aspx
- Date Modified:** 2013-03-14 05:59:34
- Number of Comments:** 0
- Comments URL:** http://api.programmableweb.com/mashups/free-ebooks-search/comments
- Tags:** amazon, books, ebooks, google, json
- APIs used:**
- Name:** Google Book Search Book Viewability URL: http://www.programmableweb.com/api/google-book-search-book-viewability

The taskbar at the bottom shows various application icons and system status, including the time 3:33 PM and date 4/19/2017.

Verification with database:

```
Command Prompt - mongo.exe
> use mashupDB; find({'apis.name': {'$all': {'google/i', '/books/i'}}});
{ "_id" : ObjectId("58f38ed6238b12a988dc13e"), "id" : "http://www.programmableweb.com/mashup/bookfriend", "title" : "bookfriend", "summary" : "bookfriend is an Android application which creat
es companion guides for any book instantly and seamlessly wherever you are.", "rating" : "5.0", "name" : "bookfriend", "label" : "bookfriend", "author" : "Unknown", "description" : "bookfriend
is an Android application which creates companion guides for any book instantly and seamlessly wherever you are.", "type" : "", "downloads" : "0", "useCount" : "0", "sampleUrl" : "http://www.
bookfriend.co.uk", "dateModified" : "2011-04-20T21:35:01Z", "numComments" : "0", "commentsUrl" : "http://api.programmableweb.com/mashups/bookfriend/comments", "tags" : [ "android", "books", "e
ducation", "mobile", "social" ], "apis" : [ { "name" : "BookBooth", "url" : "http://www.programmableweb.com/api/bookbooth" }, { "name" : "Flicker", "url" : "http://www.programmableweb.com/api/f
licker" }, { "name" : "Goodreads", "url" : "http://www.programmableweb.com/api/goodreads" }, { "name" : "Google Books", "url" : "http://www.programmableweb.com/api/google-books" }, { "name" : "
ISBN db", "url" : "http://www.programmableweb.com/api/isbn-db" }, { "name" : "LibraryThing", "url" : "http://www.programmableweb.com/api/librarything" }, { "name" : "Twitter", "url" : "http://
www.programmableweb.com/api/twitter" } ] }, "updated" : "2011-04-20T21:35:01Z" }
{ "_id" : ObjectId("58f38ed6238b12a988dc9ca"), "id" : "http://www.programmableweb.com/mashup/ewelike", "title" : "Ewelike", "summary" : "Ewelike is a free product information and price compar
ison site featuring reviews and commentary written and rated by users. Books, movies, video games, music, perfume.", "rating" : "5.0", "name" : "Ewelike", "label" : "Ewelike", "author" : "Unkn
own", "description" : "Ewelike is a free product information and price comparison site featuring reviews and commentary written and rated by users. Books, movies, video games, music, perfume.",
"type" : "", "downloads" : "0", "useCount" : "0", "sampleUrl" : "http://ewelike.com", "dateModified" : "2011-02-04T00:35:01Z", "numComments" : "1", "commentsUrl" : "http://api.programmablewe
b.com/mashups/ewelike/comments", "tags" : [ "search", "shopping" ], "apis" : [ { "name" : "Amazon Marketplace Web Service", "url" : "http://www.programmableweb.com/api/amazon-marketplace-web-s
ervice" }, { "name" : "Facebook Graph", "url" : "http://www.programmableweb.com/api/facebook-graph" }, { "name" : "Goodreads", "url" : "http://www.programmableweb.com/api/goodreads" }, { "name"
" : "Google AdSense", "url" : "http://www.programmableweb.com/api/google-adsense" }, { "name" : "Google Analytics", "url" : "http://www.programmableweb.com/api/google-analytics" }, { "name" : "
Google Base", "url" : "http://www.programmableweb.com/api/google-base" }, { "name" : "Google Books", "url" : "http://www.programmableweb.com/api/google-books" }, "updated" : "2011-02-04T00:
35:01Z" }
{ "_id" : ObjectId("58f38ed66238b12a988dcca7"), "id" : "http://www.programmableweb.com/mashup/free-ebooks-search", "title" : "Free eBooks Search", "summary" : "Google Books takes a couple of s
earch steps to show if an ebook is available for free download in PDF or EPUB format. This app lets you find free eBooks from the Google Books collection in a single step.", "rating" : "5.0",
"name" : "Free eBooks Search", "label" : "Free eBooks Search", "author" : "Unknown", "description" : "Google Books takes a couple of search steps to show if an ebook is available for free down
load in PDF or EPUB format. This app lets you find free eBooks from the Google Books collection in a single step.", "type" : "", "downloads" : "0", "useCount" : "0", "sampleUrl" : "http://aplab.azur
ebsites.net/gb.aspx", "dateModified" : "2013-03-14T05:59:34Z", "numComments" : "0", "commentsUrl" : "http://api.programmableweb.com/mashups/free-ebooks-search/comments", "tags" : [ "a
mazon", "books", "ebooks", "google", "json" ], "apis" : [ { "name" : "Google Book Search Book Viewability", "url" : "http://www.programmableweb.com/api/google-book-search-book-viewability" },
{ "name" : "Google Books", "url" : "http://www.programmableweb.com/api/google-books" } ], "updated" : "2013-03-14T05:59:34Z" }
{ "_id" : ObjectId("58f38ed6238b12a988d921b"), "id" : "http://www.programmableweb.com/mashup/ikuexplorer", "title" : "iKuExplorer", "summary" : "iKuExplorer is a desktop FREE personal product
ivity tool aimed to help users deal with the amount of information sources that use, letting link information freely, regardless where have it stored or its type, creating information sets that ca
n also be shared.", "rating" : "5.0", "name" : "iKuExplorer", "label" : "iKuExplorer", "author" : "Unknown", "description" : "iKuExplorer is a desktop FREE personal productivity tool aime
d to help users deal with the amount of information sources that use, letting link information freely, regardless where have it stored or its type, creating information sets that can also be
shared.", "type" : "", "downloads" : "0", "useCount" : "0", "sampleUrl" : "http://www.ikutech.com/products/ikuexplorer/download.html", "dateModified" : "2012-01-26T16:35:03Z", "numComments" :
"0", "commentsUrl" : "http://api.programmableweb.com/mashups/ikuexplorer/comments", "tags" : [ "productivity", "sharing", "tools" ], "apis" : [ { "name" : "Blogger", "url" : "http://www.progra
mmableweb.com/api/blogger" }, { "name" : "Flickr", "url" : "http://www.programmableweb.com/api/flickr" }, { "name" : "Google Books", "url" : "http://www.programmableweb.com/api/google-books" },
{ "name" : "Google Calendar", "url" : "http://www.programmableweb.com/api/google-calendar" }, { "name" : "Google Contacts", "url" : "http://www.programmableweb.com/api/google-contacts" }, {
"name" : "Google Documents List", "url" : "http://www.programmableweb.com/api/google-documents-list" }, { "name" : "Google Picasa", "url" : "http://www.programmableweb.com/api/google-picasa" },
{ "name" : "Google Sites", "url" : "http://www.programmableweb.com/api/google-sites" }, { "name" : "YouTube", "url" : "http://www.programmableweb.com/api/youtube" } ], "updated" : "2012-01-
26T16:35:03Z" }
{ "_id" : ObjectId("58f38ed76738b12a988d89e1"), "id" : "http://www.programmableweb.com/mashup/mash-the-book", "title" : "Mash the Book", "summary" : "A book navigator. Browse through tons of b
```


Query system for tags containing amazon and books for Mashup search :

The screenshot shows a web browser window with the address bar displaying a file path. The page title is "Programmable Web Database Search". Below the title, there are tabs for "API Search", "Mashup Search", and "Keywords Search". The "Mashup Search" tab is active, and the search results for "amazon books" are shown. The results list includes "Amazon widgets", "BookDip - Kindle Ebook Deals", "Free eBooks Search", "Hundred Zeros", "JungleThingy", and "The Book Stash". The details for "Amazon widgets" are expanded, showing its ID, title, summary, rating, label, author, description, type, downloads, use count, sample URL, date modified, number of comments, comments URL, tags, and APIs used.

Updated Year: [] Used APIs: [] amazon books Find Mashups

Amazon widgets

BookDip - Kindle Ebook Deals

Free eBooks Search

Hundred Zeros

JungleThingy

The Book Stash

ID: <http://www.programmableweb.com/mashup/amazon-widgets>
Title: Amazon widgets
Summary: Web widgets that display Amazon items and earn referral revenue through Amazon Associates. Browser is an Amazon mini browser. List displays wish lists, baby and wedding registries, List Mania lists. Latest and Greatest shows bestsellers and new releases.
Rating: 4.3
Label: Amazon widgets
Author: Unknown
Description: Web widgets that display Amazon items and earn referral revenue through Amazon Associates. Browser is an Amazon mini browser. List displays wish lists, baby and wedding registries, List Mania lists. Latest and Greatest shows bestsellers and new releases.
Type: ---
Downloads: ---
Use count: 6242
Sample URL: <http://www.widgizit.com>
Date Modified: 2007-06-20 00:00:11
Number of Comments: 0
Comments URL: <http://api.programmableweb.com/mashups/amazon-widgets/comments>
Tags: amazon,books,movies,music,shopping,widgets
APIs used:
Name: Amazon Product Advertising URL: <http://www.programmableweb.com/api/amazon-product-advertising>

Verification with database:

```
Command Prompt - mongo.exe
> use mashup08; find({'tags': {'$all': ['/amazon/', '/books/']}});
{"_id": "ObjectID('58f38ed6238b12a988dbd4f5')", "id": "http://www.programmableweb.com/mashup/amazon-widgets", "title": "Amazon widgets", "summary": "Web widgets that display Amazon items and earn referral revenue through Amazon Associates. Browser is an Amazon mini browser. List displays wish lists, baby and wedding registries, List Mania lists. Latest and Greatest shows bestsellers and new releases.", "rating": "4.3", "name": "Amazon widgets", "label": "Amazon widgets", "author": "Unknown", "description": "Web widgets that display Amazon items and earn referral revenue through Amazon Associates. Browser is an Amazon mini browser. List displays wish lists, baby and wedding registries, List Mania lists. Latest and Greatest shows bestsellers and new releases.", "type": "", "downloads": "0", "useCount": "6242", "sampleUrl": "http://www.widgizit.com", "dateModified": "2007-06-20T00:00:11Z", "numComments": "0", "commentsUrl": "http://api.programmableweb.com/mashups/amazon-widgets/comments", "tags": [ "amazon", "books", "movies", "music", "shopping", "widgets" ], "apis": [ { "name": "Amazon Product Advertising", "url": "http://www.programmableweb.com/api/amazon-product-advertising" }, { "name": "Google Homepage", "url": "http://www.programmableweb.com/api/google-homepage" }, { "name": "Netvibes", "url": "http://www.programmableweb.com/api/netvibes" } ], "updated": "2007-06-20T00:00:11Z" }
{"_id": "ObjectID('58f38ed6238b12a988dbd4f5')", "id": "http://www.programmableweb.com/mashup/bookdip-kindle-ebook-deals", "title": "BookDip - Kindle Ebook Deals", "summary": "BookDip uses the Amazon Product Advertising and WordPress APIs to scan, check and deliver discounted and free Kindle ebooks across all Amazon categories. Book deals are updated every 2 hours.", "rating": "3.5", "name": "BookDip - Kindle Ebook Deals", "label": "BookDip - Kindle Ebook Deals", "author": "Unknown", "description": "BookDip uses the Amazon Product Advertising and WordPress APIs to scan, check and deliver discounted and free Kindle ebooks across all Amazon categories. Book deals are updated every 2 hours.", "type": "", "downloads": "0", "useCount": "0", "sampleUrl": "http://www.bookdip.com/", "dateModified": "2013-09-07T11:18:39Z", "numComments": "0", "commentsUrl": "http://api.programmableweb.com/mashups/bookdip-kindle-ebook-deals/comments", "tags": [ "amazon", "bookdip", "deals", "ebooks", "kindle", "wordpress" ], "apis": [ { "name": "Amazon Product Advertising", "url": "http://www.programmableweb.com/api/amazon-product-advertising" }, { "name": "WordPress.org", "url": "http://www.programmableweb.com/api/wordpress.org" } ], "updated": "2013-09-07T11:18:39Z" }
{"_id": "ObjectID('58f38ed6238b12a988dbd4f5')", "id": "http://www.programmableweb.com/mashup/free-ebooks-search", "title": "Free eBooks Search", "summary": "Google Books takes a couple of search steps to show if an ebook is available for free download in PDF or EPUB format. This app lets you find free eBooks from the Google Books collection in a single step.", "rating": "5.0", "name": "Free eBooks Search", "label": "Free eBooks Search", "author": "Unknown", "description": "Google Books takes a couple of search steps to show if an ebook is available for free download in PDF or EPUB format. This app lets you find free eBooks from the Google Books collection in a single step.", "type": "", "downloads": "0", "useCount": "0", "sampleUrl": "http://api.azurewebsites.net/gb.aspx", "dateModified": "2013-03-14T05:59:34Z", "numComments": "0", "commentsUrl": "http://api.programmableweb.com/mashups/free-ebooks-search/comments", "tags": [ "amazon", "books", "ebooks", "google", "json" ], "apis": [ { "name": "Google Book Search Book Viewability", "url": "http://www.programmableweb.com/api/google-book-search-book-viewability" }, { "name": "Google Books", "url": "http://www.programmableweb.com/api/google-books" } ], "updated": "2013-03-14T05:59:34Z" }
{"_id": "ObjectID('58f38ed6238b12a988dbd4f5')", "id": "http://www.programmableweb.com/mashup/hundred-zeros", "title": "Hundred Zeros", "summary": "Hundred Zeros is a collection of Kindle ebooks that are currently free at Amazon. The listings are updated every hour so users have access to the latest and most up to date collection.", "rating": "3.0", "name": "Hundred Zeros", "label": "Hundred Zeros", "author": "Unknown", "description": "Hundred Zeros is a collection of Kindle ebooks that are currently free at Amazon. The listings are updated every hour so users have access to the latest and most up to date collection.", "type": "", "downloads": "0", "useCount": "0", "sampleUrl": "http://hundredzeros.com/", "dateModified": "2013-04-04T07:45:56Z", "numComments": "0", "commentsUrl": "http://api.programmableweb.com/mashups/hundred-zeros/comments", "tags": [ "amazon", "ebooks", "kindle", "wordpress" ], "apis": [ { "name": "Amazon Product Advertising- dupe", "url": "http://www.programmableweb.com/api/amazon-product-advertising-dupe" }, { "name": "WordPress.org", "url": "http://www.programmableweb.com/api/wordpress.org" } ], "updated": "2013-04-04T07:45:56Z" }
{"_id": "ObjectID('58f38ed6238b12a988dbd4f5')", "id": "http://www.programmableweb.com/mashup/junglethingy", "title": "JungleThingy", "summary": "Integrates Google Maps with Amazon eCommerce book search to provide a fast way of drilling down and finding books for a specific city or country in a visual way.", "rating": "5.0", "name": "JungleThingy", "label": "JungleThingy", "author": "Unknown", "description": "Integrates Google Maps with Amazon eCommerce book search to provide a fast way of drilling down and finding books for a specific city or country in a visual way.", "type": "", "downloads": "0", "useCount": "1663", "sampleUrl": "http://www.junglethingy.com", "dateModified": "2009-03-08T00:35:06Z", "numComments": "0", "commentsUrl": "http://api.programmableweb.com/mashups/junglethingy/comments", "tags": [ "amazon", "books", "deadpool", "mapping", "travel" ], "apis": [ { "name": "Amazon Product Advertising", "url": "http://www.programmableweb.com/api/amazon-product-advertising" }, { "name": "Google Maps", "url": "http://www.programmableweb.com/api/google-maps" } ], "updated": "2009-03-08T00:35:06Z" }
```


Query system for updated year = 2013 and tags containing amazon and books for Mashup search:

The screenshot shows a web browser window with the address bar displaying a file path. The page title is "Programmable Web Database Search". Below the title, there are three tabs: "API Search", "Mashup Search", and "Keywords Search". The "Mashup Search" tab is active. In the search area, the year "2013" is entered in the first field, "Used APIs" in the second, and "amazon books" in the third. A "Find Mashups" button is to the right. On the left, a list of search results is shown, with "BookDip - Kindle Ebook Deals" selected. The main content area displays details for this mashup:

- ID:** <http://www.programmableweb.com/mashup/bookdip-kindle-ebook-deals>
- Title:** BookDip - Kindle Ebook Deals
- Summary:** BookDip uses the Amazon Product Advertising and Wordpress API's to scan, check and deliver discounted and free Kindle ebooks across all Amazon categories. Book deals are updated every 2 hours.
- Rating:** 3.5
- Label:** BookDip - Kindle Ebook Deals
- Author:** Unknown
- Description:** BookDip uses the Amazon Product Advertising and Wordpress API's to scan, check and deliver discounted and free Kindle ebooks across all Amazon categories. Book deals are updated every 2 hours.
- Type:**
- Downloads:** 0
- Use count:** 0
- Sample URL:** <http://www.bookdip.com/>
- Date Modified:** 2013-09-07 11:18:39
- Number of Comments:** 0
- Comments URL:** <http://api.programmableweb.com/mashups/bookdip-kindle-ebook-deals/comments>
- Tags:** amazon,bookdip,deals,ebooks,kindle,wordpress
- APIs used:**
- Name:** Amazon Product Advertising **URL:** <http://www.proorammmableweb.com/aoi/amazon-product-advertising>

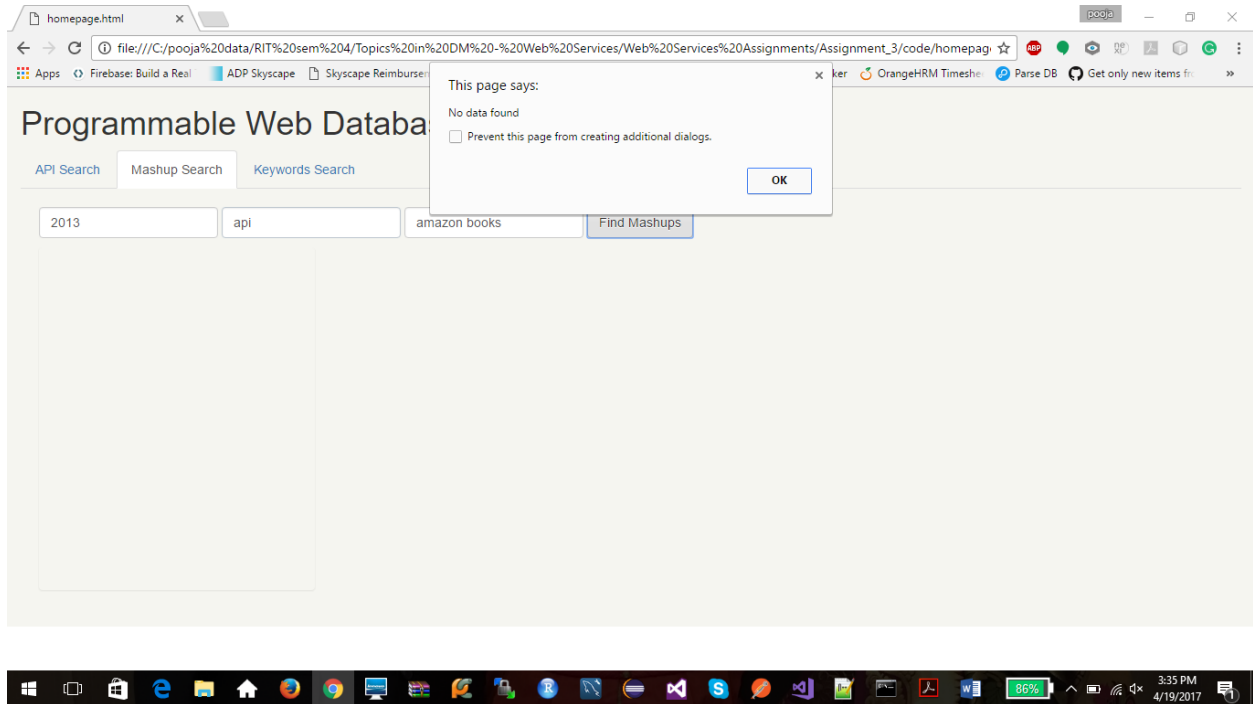
Verification with database:

The screenshot shows a Command Prompt window with the following text:

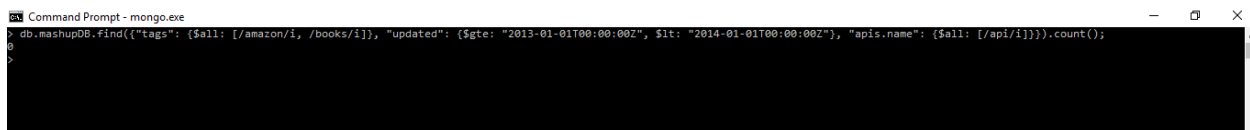
```
> db.mashup08.find({"tags": {"$all": ["/amazon/i, /books/i]}, "updated": {"$gte": "2013-01-01T00:00:00Z", "$lt": "2014-01-01T00:00:00Z"}});
```

The output shows a JSON document for the "BookDip - Kindle Ebook Deals" mashup, including its ID, title, summary, rating, label, author, description, type, downloads, use count, sample URL, date modified, number of comments, comments URL, tags, APIs used, and name. The name is "Amazon Product Advertising" and the URL is "http://www.proorammmableweb.com/aoi/amazon-product-advertising".

Query system for updated year = 2013, used APIs containing api and tags containing amazon and books for Mashup search:



Verification with database:



Query system for keywords search of google books:

homepage.html x

file:///C:/pooja%20data/RIT%20sem%204/Topics%20in%20DM%20-%20Web%20Services/Web%20Services%20Assignments/Assignment_3/code/homepag...

Programmable Web Database Search

API Search Mashup Search Keywords Search

google books Find Based on Keywords

- Free eBooks Search
- Great American Authors of the Nineteenth Century
- Public Domain Reprints
- Google Books

ID: http://www.programmableweb.com/mashup/public-domain-reprints
Title: Public Domain Reprints
Summary: Lets people reprint public domain books from Internet Archive and Google Books.
Rating: 5.0
Label: Public Domain Reprints
Author: Unknown
Description: Lets people reprint public domain books from Internet Archive and Google Books.
Type:
Downloads: 0
Use count: 3128
Sample URL: http://www.publicdomainreprints.org/
Date Modified: 2008-01-27 00:08:08
Number of Comments: 0
Comments URL: http://api.programmableweb.com/mashups/public-domain-reprints/comments
Tags: books,printing
APIs used:
Name: Amazon EC2 **URL:** http://www.programmableweb.com/api/amazon-ec2
Name: Internet Archive **URL:** http://www.programmableweb.com/api/internet-archive
Name: Lulu Publishing **URL:** http://www.programmableweb.com/api/lulu-publishing

Verification with database (mashup Database):

```
> db.mashupDB.find({'name': '/google books/i'}, {'summary': '/google books/i'}, {'description': '/google books/i'})
{ "_id" : ObjectId("58f38ed66238b12a988dcca7"), "id" : "http://www.programmableweb.com/mashup/free-ebooks-search", "title" : "Free eBooks Search", "summary" : "Google Books takes a couple of s
earch steps to show if an ebook is available for free download in PDF or EPUB format. This app lets you find free eBooks from the Google Books collection in a single step.", "rating" : "5.0",
"name" : "Free eBooks Search", "label" : "Free eBooks Search", "author" : "Unknown", "description" : "Google Books takes a couple of search steps to show if an ebook is available for free down
load in PDF or EPUB format. This app lets you find free eBooks from the Google Books collection in a single step.", "type" : "", "downloads" : "0", "useCount" : "0", "sampleUrl" : "http://appl
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Verification with database (api Database):

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Command Prompt - mongo.exe
> db.apiDB.find({$or: [{name: /google books/i}, {"summary": /google books/i}, {"description": /google books/i}]});
{ "_id" : ObjectId("58f3bed76238d12a988dd39"), "id" : "http://www.programmableweb.com/api/google-books", "title" : "Google Books", "summary" : "Book search services", "rating" : "4.7", "name" : "Google Books", "label" : "Google Books", "author" : "", "description" : "Use the Google Book Search Data API to get and modify Book Search content via feeds. Submit full-text searches for books and get book information, ratings, and reviews. Optionally get individual users&#039; library collections and public reviews. Submit authenticated requests to create and modify library collections, ratings, labels, reviews, and more.", "type" : "1", "downloads" : "", "useCount" : "", "sampleUrl" : "https://developers.google.com/books/docs/v1/using", "downloadUrl" : "", "dateModified" : "2008-09-30T04:28:30Z", "remoteFeed" : "", "numComments" : "", "commentsUrl" : "http://api.programmableweb.com/apis/google-books/comments", "tags" : [ "books", "reference", "search" ], "category" : "Reference", "protocols" : "REST, JavaScript", "serviceEndpoint" : "https://www.googleapis.com/books/v1", "version" : "", "msdl" : "", "dataformats" : "JSON", "apigroups" : "", "example" : "", "clientinstall" : "No", "authentication" : "API Key, OAuth", "ssl" : "Yes", "readonly" : "Yes", "vendorApikits" : "Java, PHP, Python, Ruby, .NET", "communityApikits" : "", "blog" : "", "forum" : "http://www.google.com/support/forum/p/booksearch-apis?hl=en", "support" : "", "accountReq" : "Yes", "commercial" : "", "provider" : "http://google.com", "managedBy" : "", "nonCommercial" : "", "datalicensing" : "", "fees" : "None", "limits" : "None specified", "terms" : "https://code.google.com/apis/books/terms.html", "company" : "2", "updated" : "2008-09-30T04:28:30Z" }
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