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>,
```

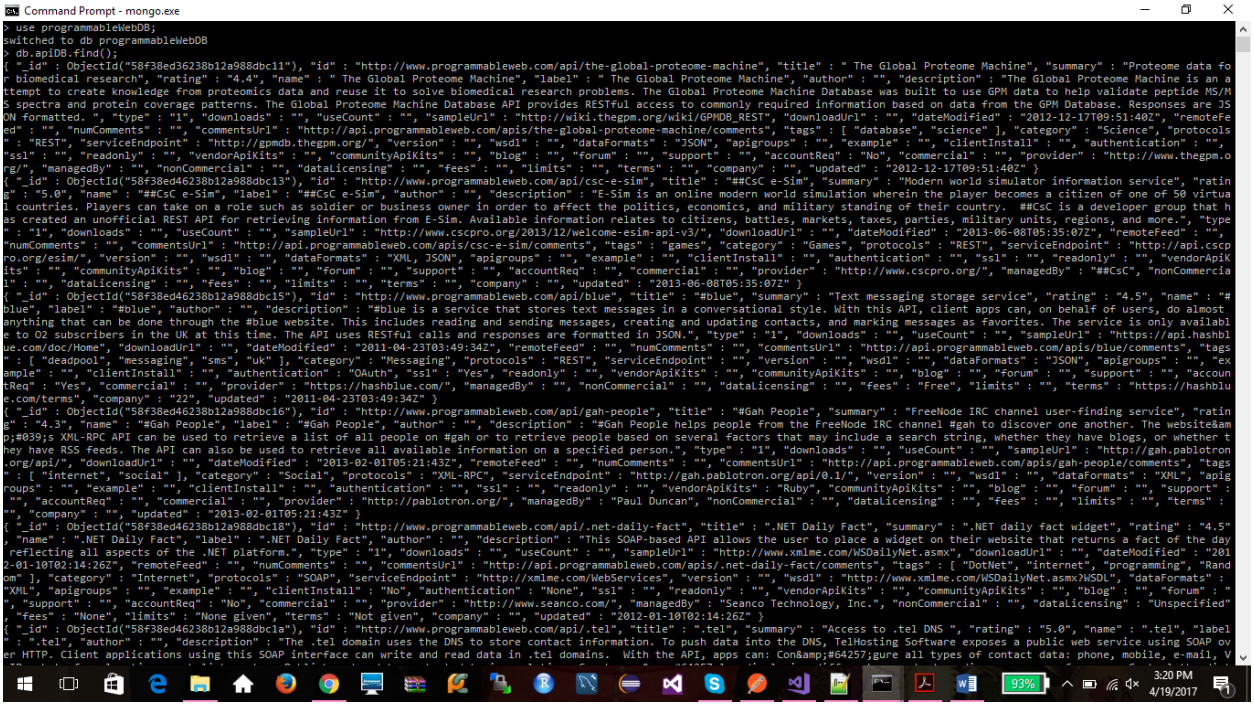
```
            “commercial”: <commercial_value>,
            “provider”: <provider_value>,
            “managedBy”: <managedBy_value>,
            “nonCommercial”: <noncommercial_value>,
            “dataLicensing”: <dataLicensing_value>,
            “fees”: <fees_value>,
            “limits”: <limits_value>,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

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

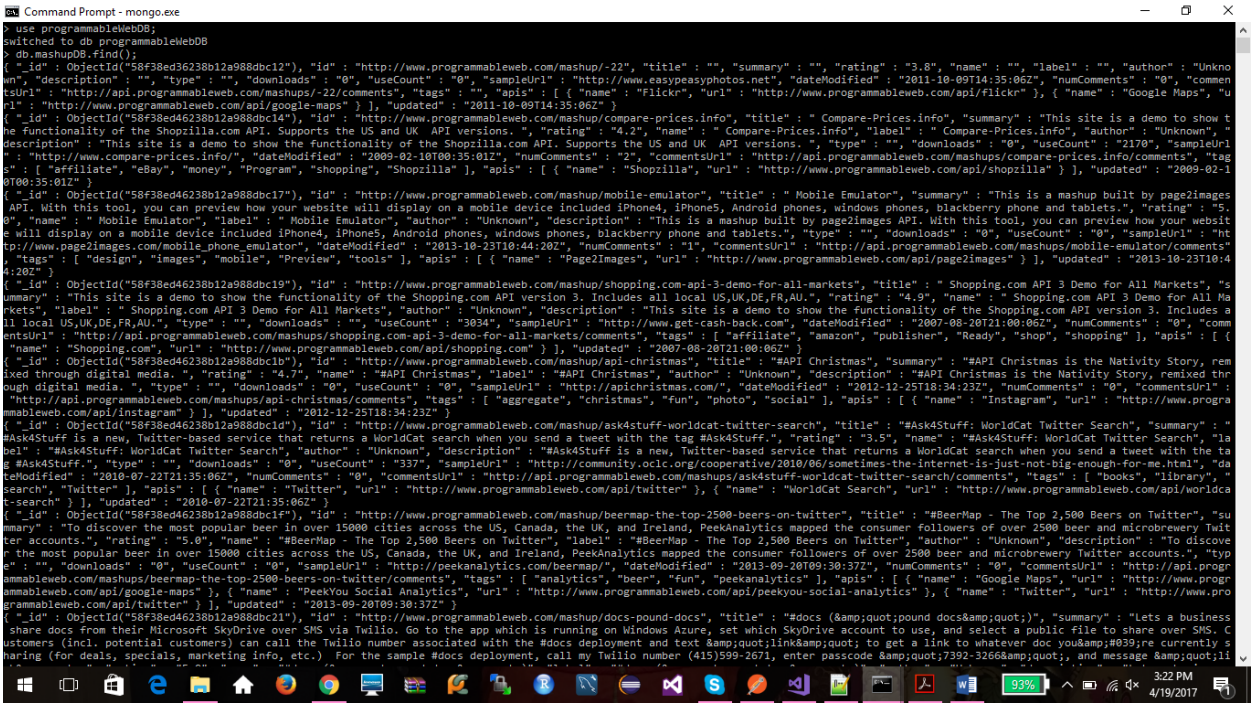
```
[
        {
            “id”: <id_value>,
            “title”: <title_value>,
            “summary”: <summary_value>,
            “rating”: <rating_value>,
            “name”: <name_value>,
            “label”: <label_value>,
            “author”: <author_value>,
            “description”: <description_value>,
            “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:

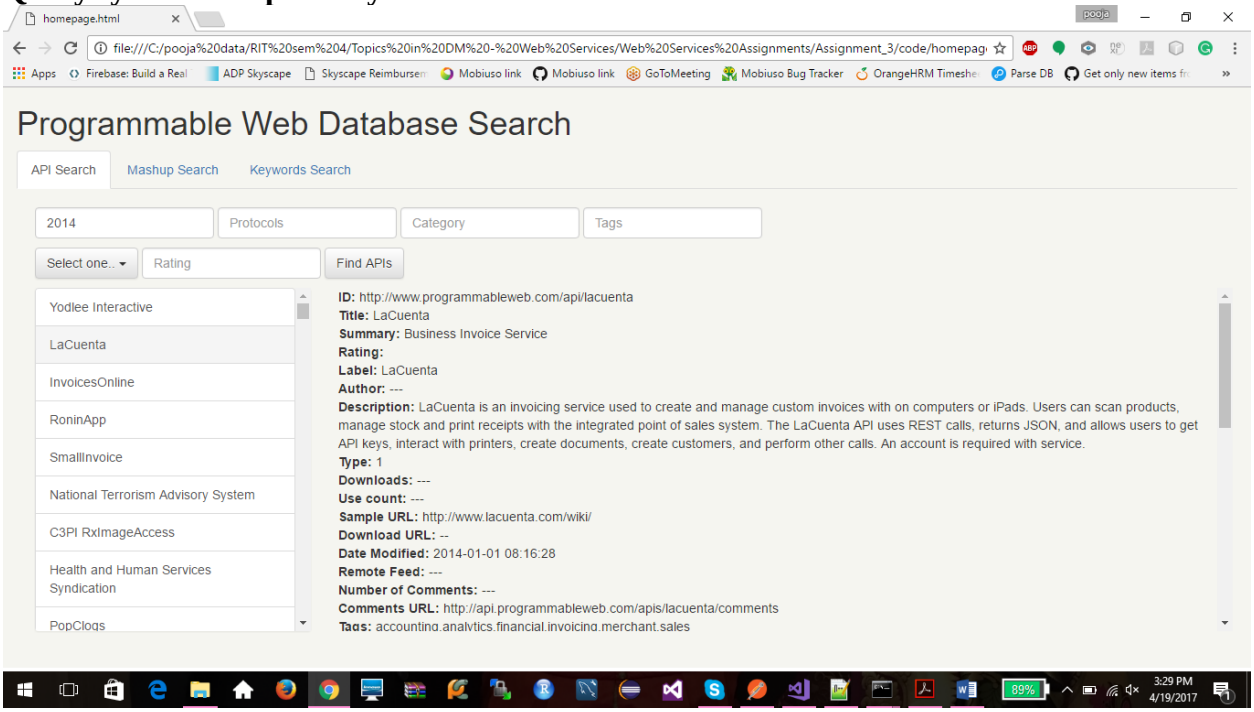


Mashup Database:



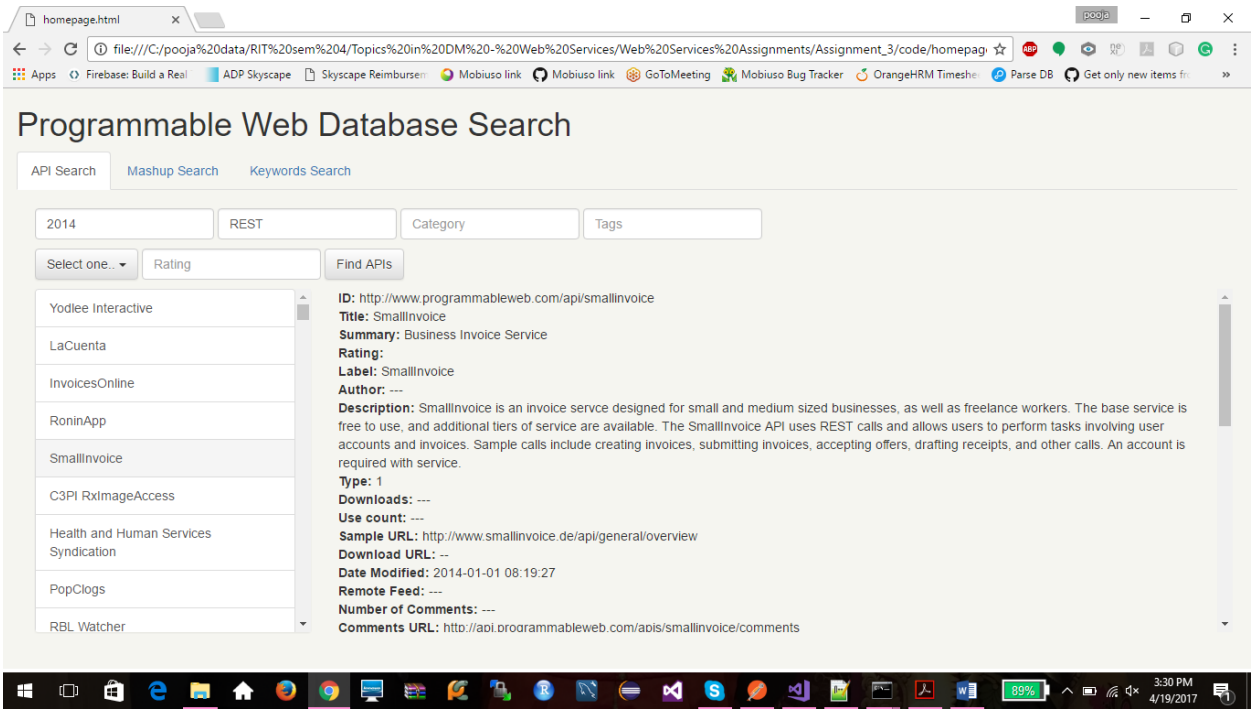
Testing scenarios of query system:

Query system for updated year = 2014 for API search:



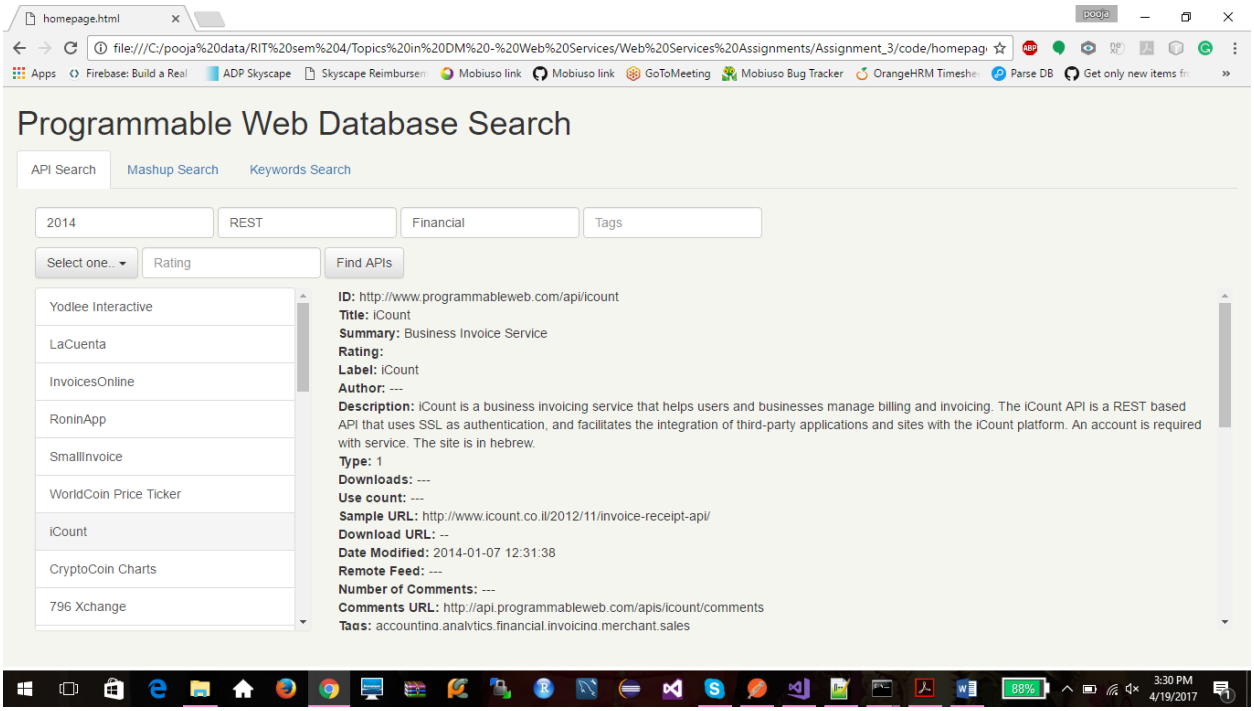
Verification with database:

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

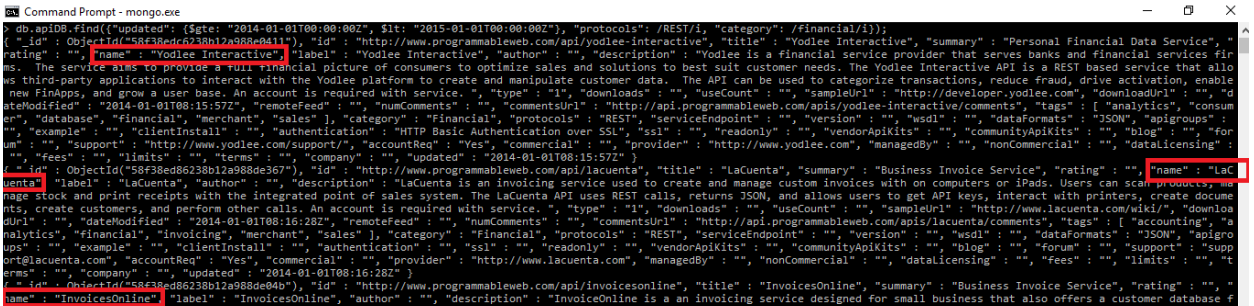


Verification with database:

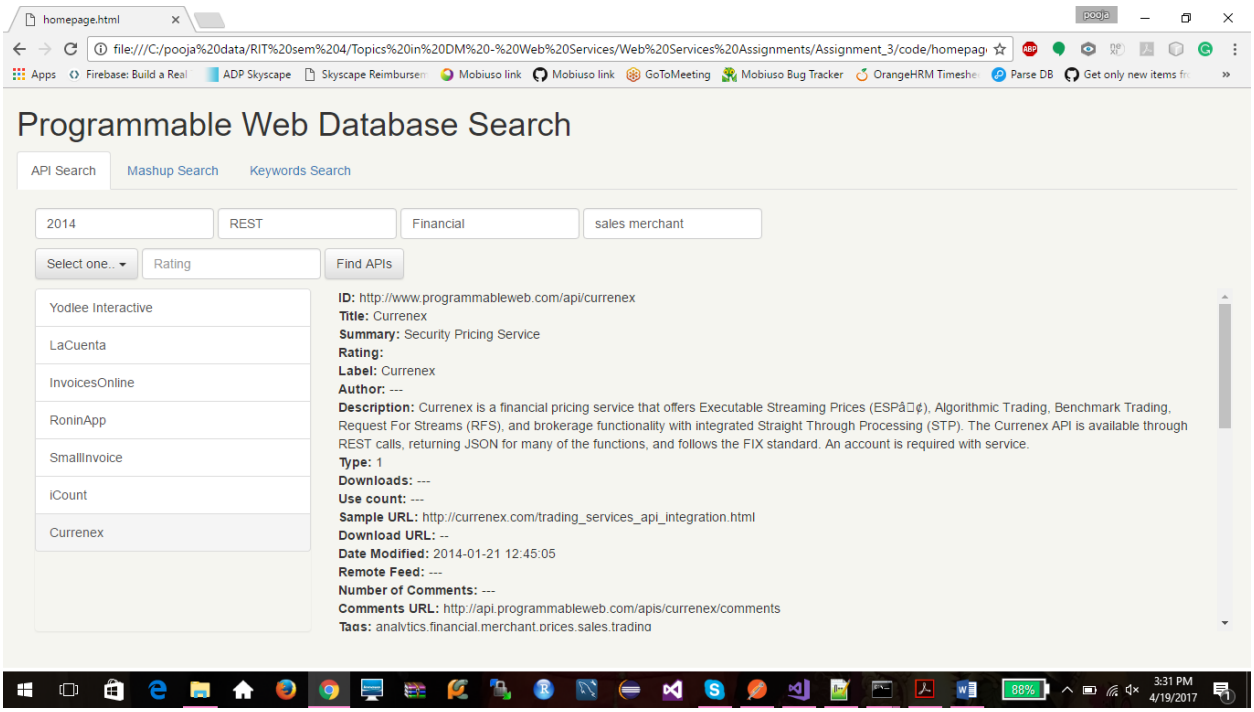
Query system for updated year = 2014, protocols = REST and category = Financial for API search:



Verification with database:

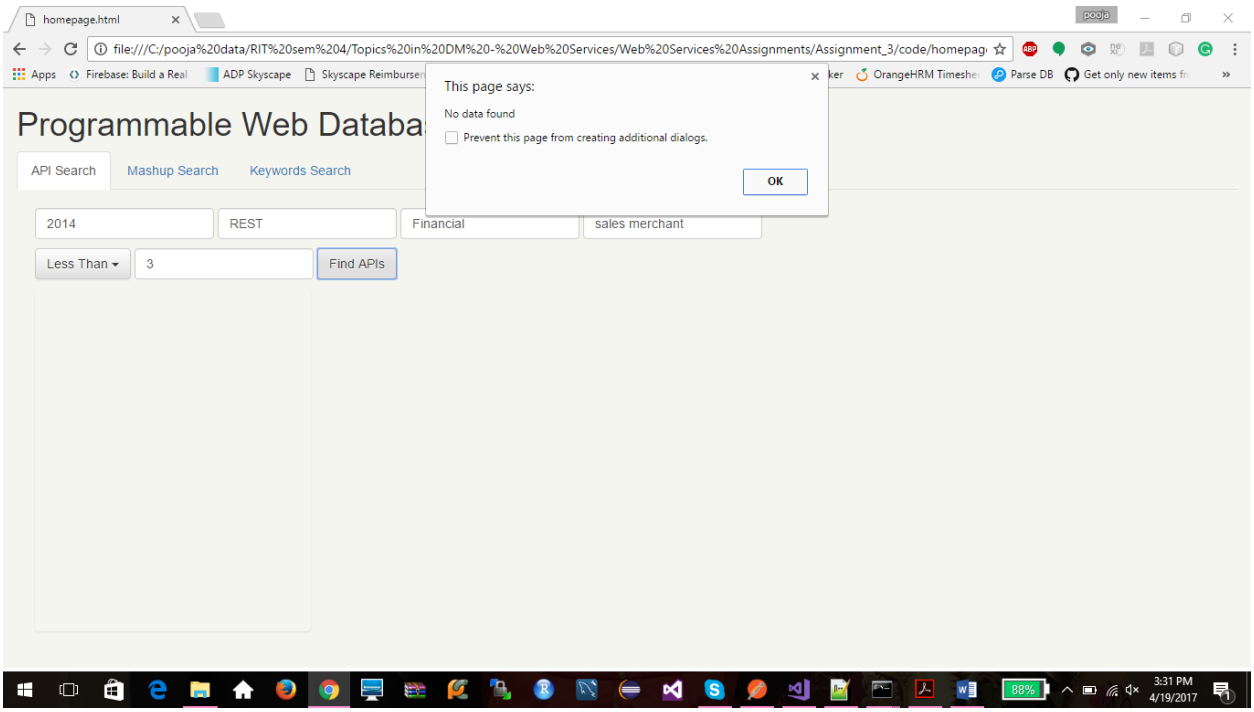


Query system for updated year = 2014, protocols = REST, category = Financial and tags containing “sales’, “merchant” for API search:

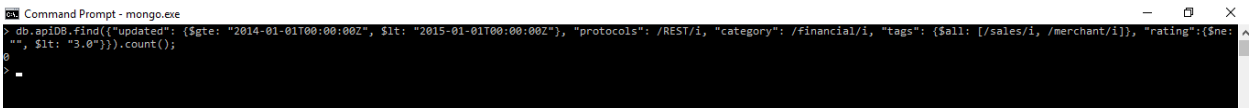


Verification with database:

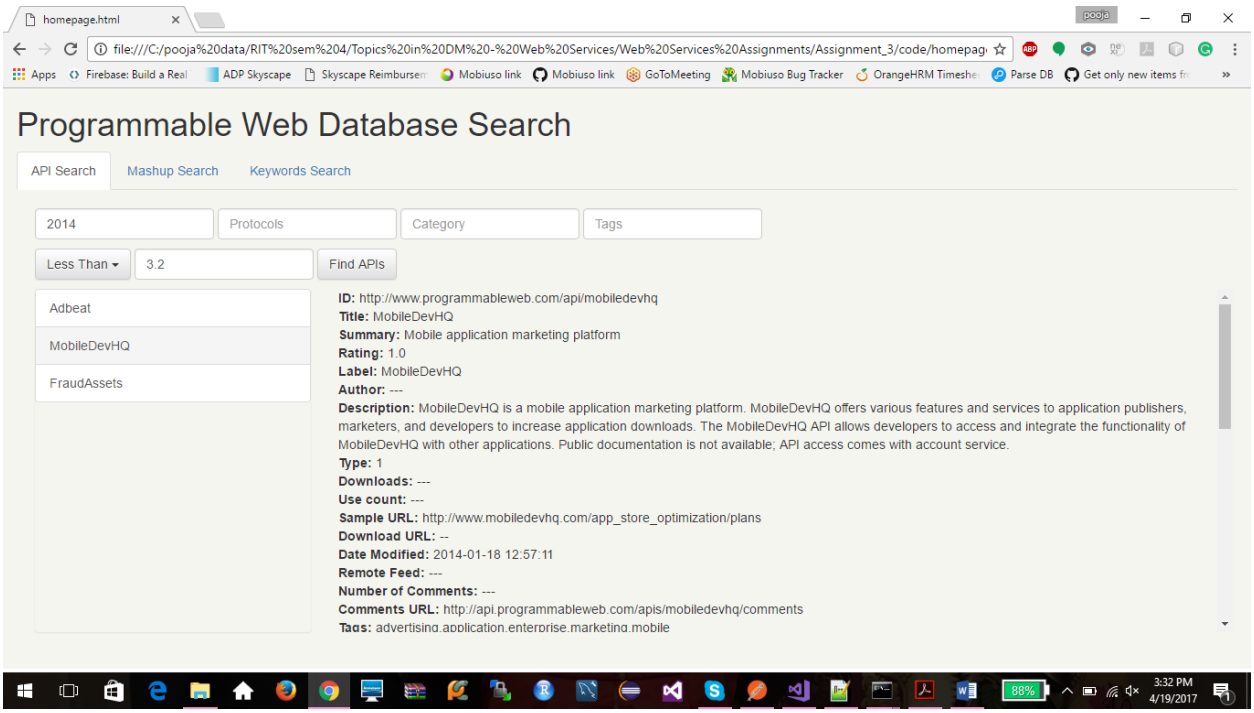
Query system for updated year = 2014, protocols = REST, category = Financial and tags containing “sales’, “merchant” and ratings less than 3.0 for API search:



Verification with database:

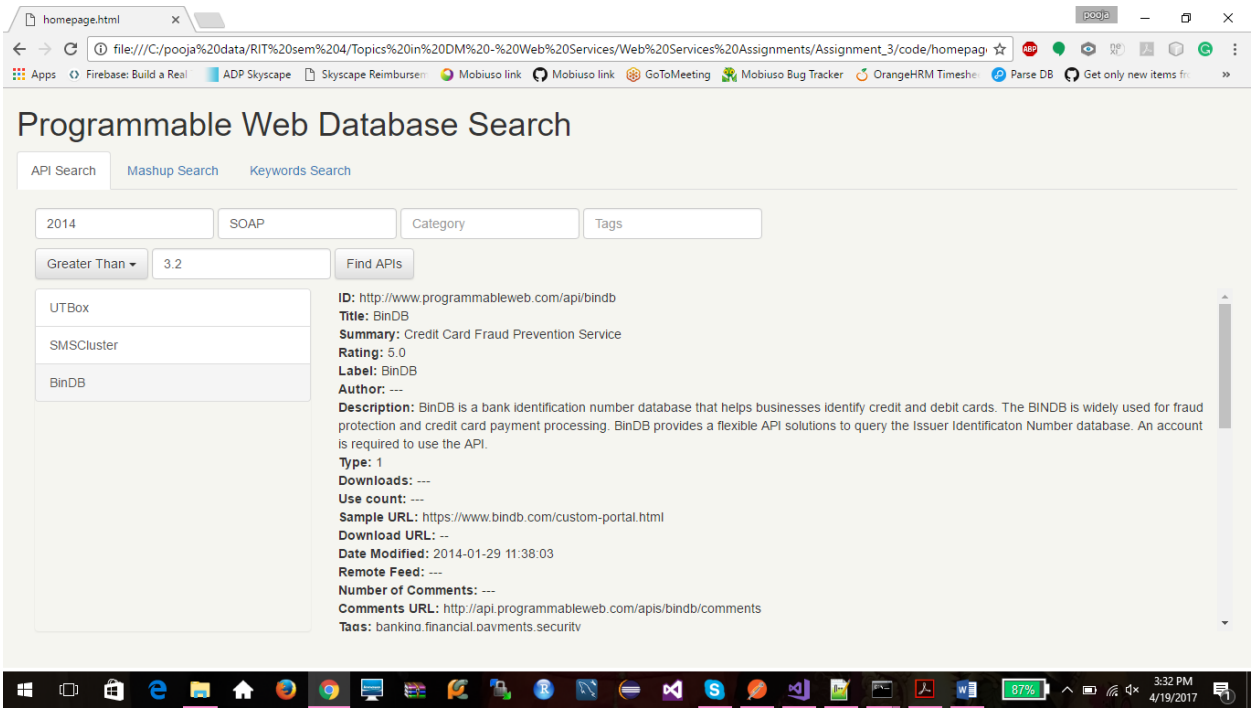


Query system for updated year = 2014 and rating less than 3.2 for API search:



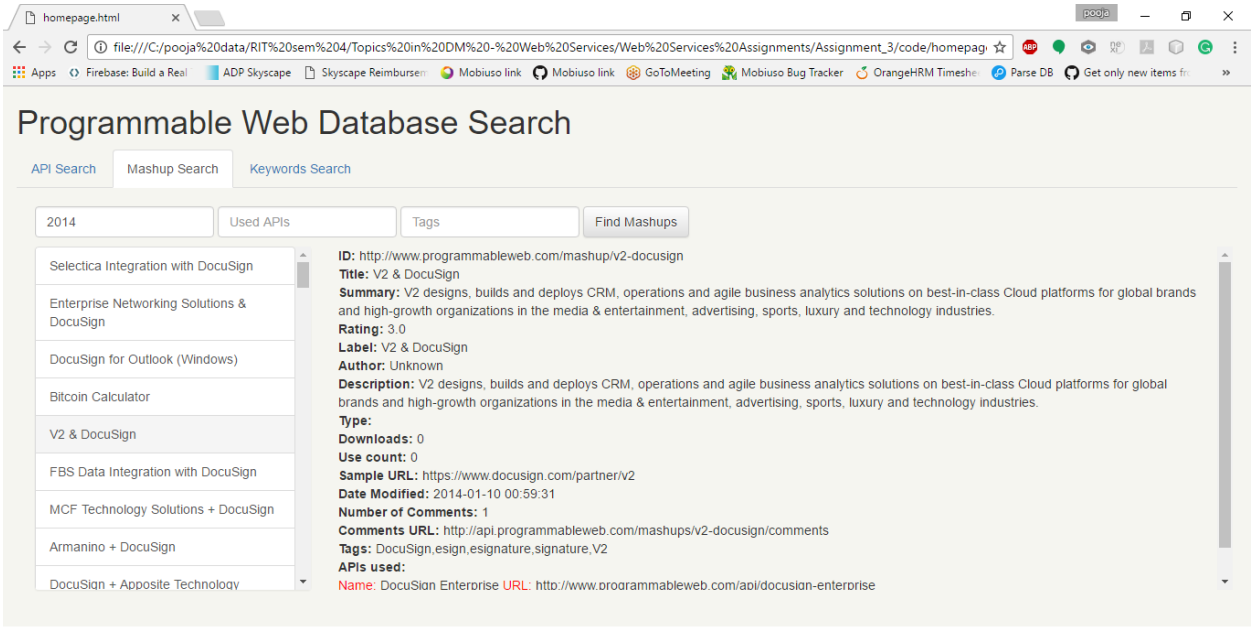
Verification with database:

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

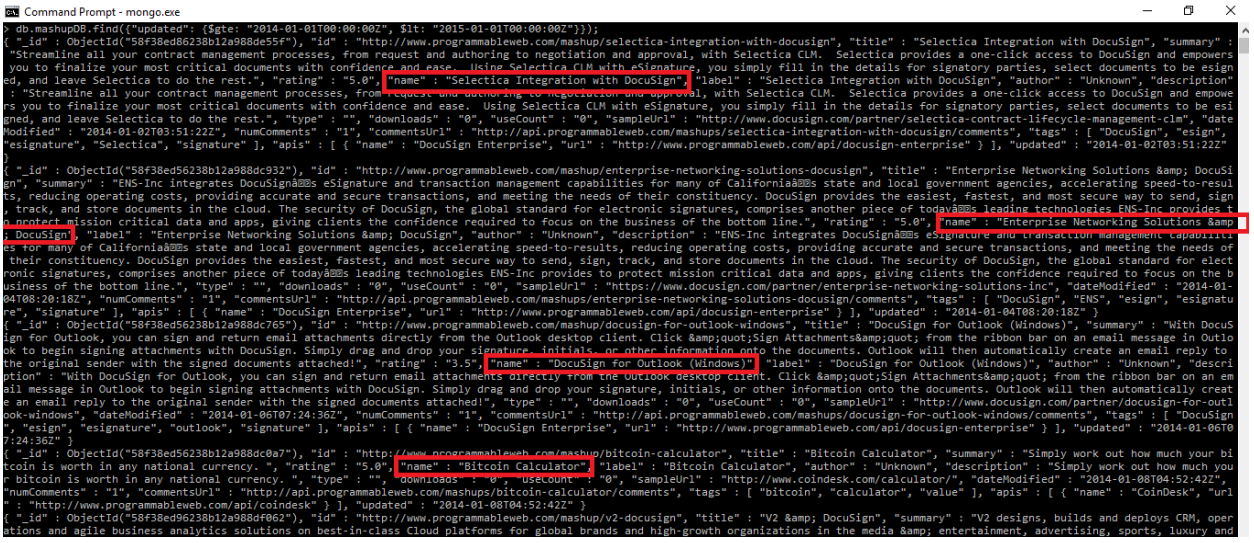


Verification with database:

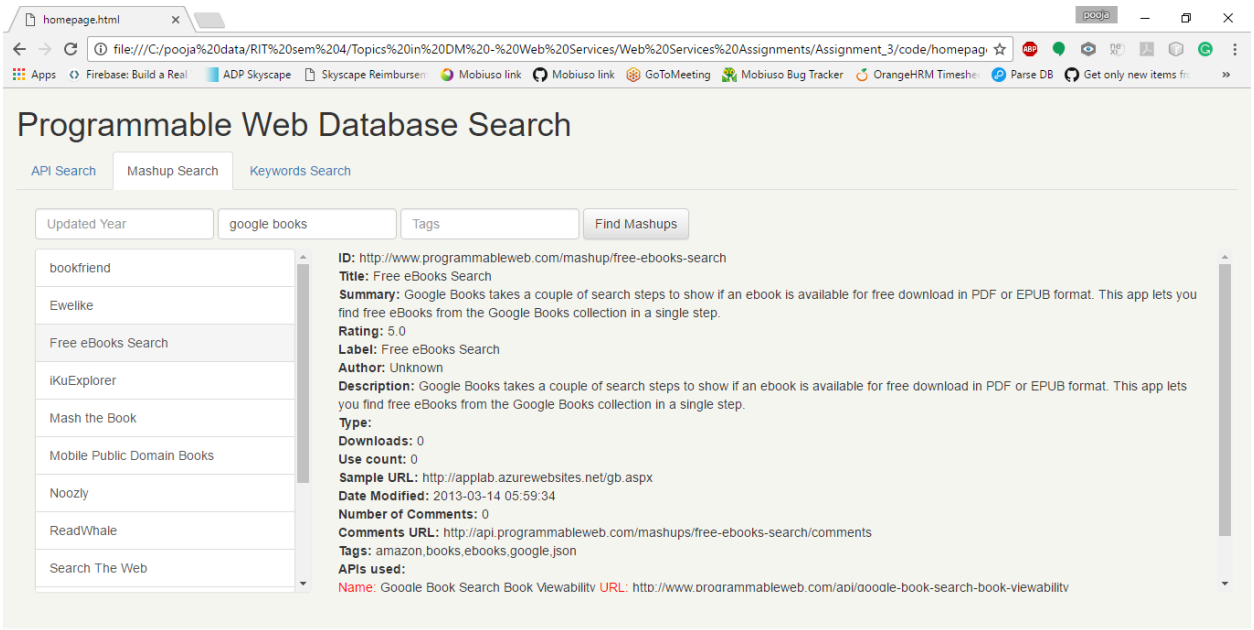
Query system for updated year = 2014 for Mashup search:



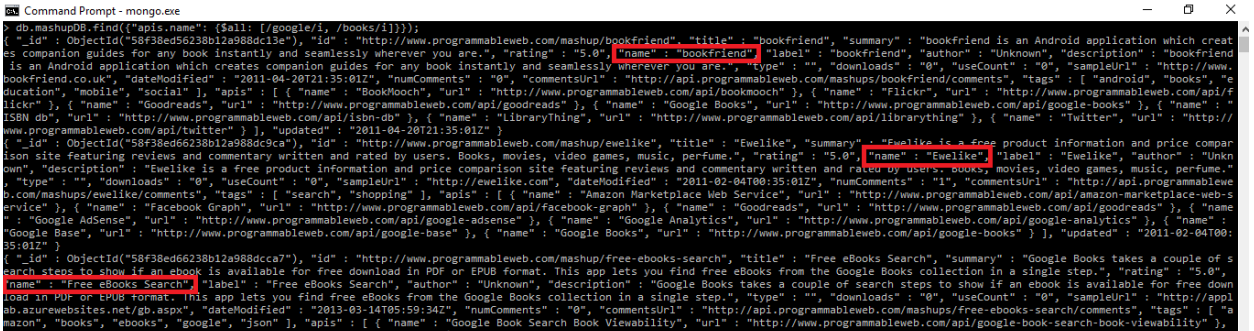
Verification with database:



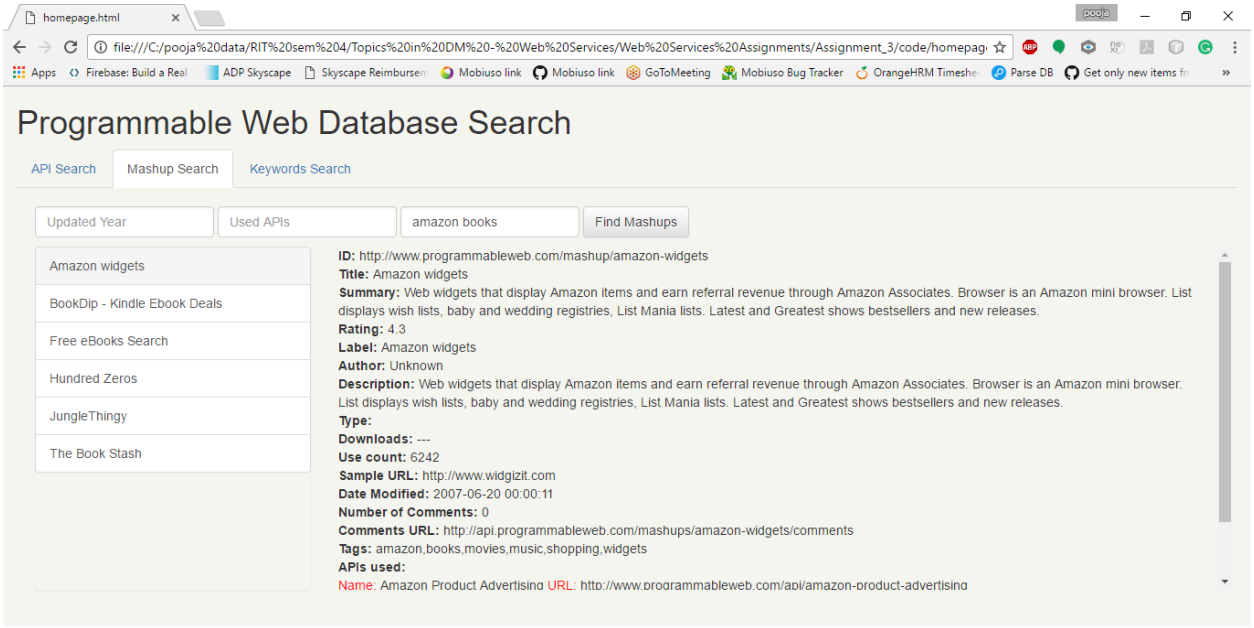
Query system for used APIs containing string “google books” for Mashup search:



Verification with database:

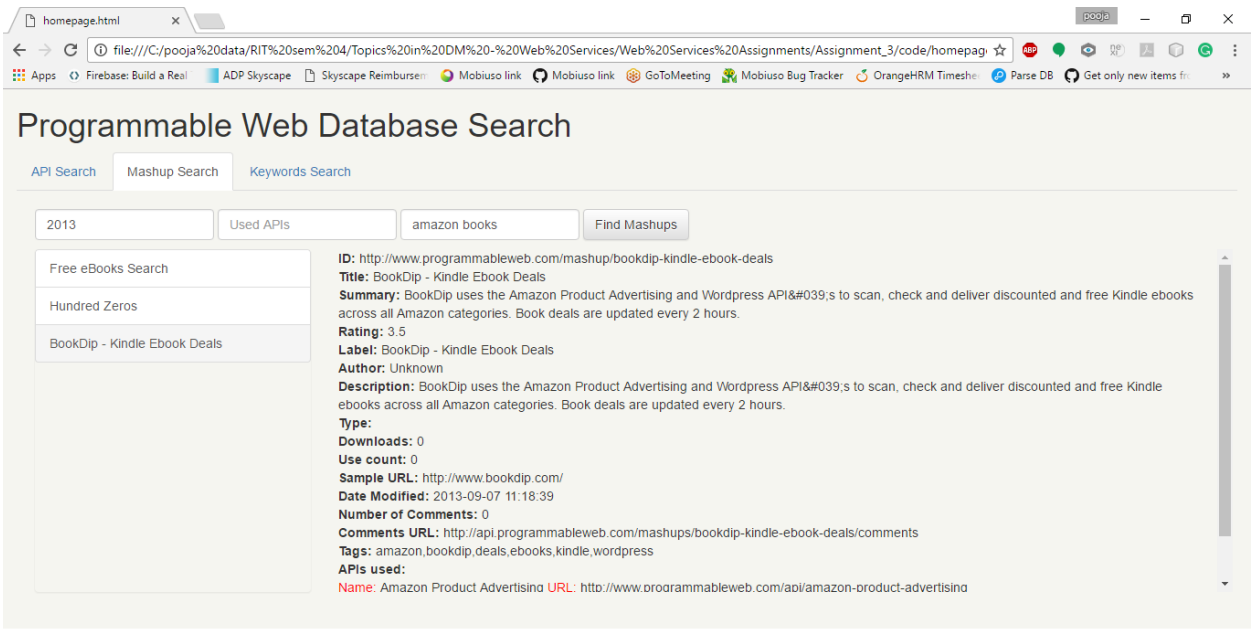


Query system for tags containing amazon and books for Mashup search :

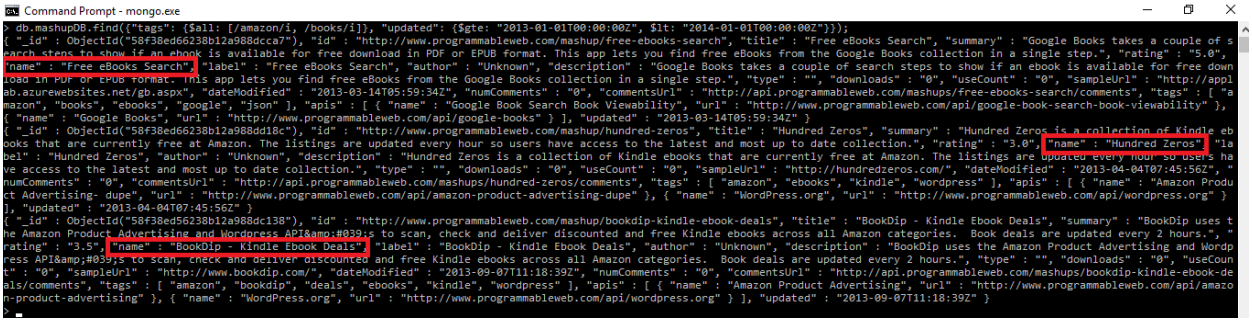


Verification with database:

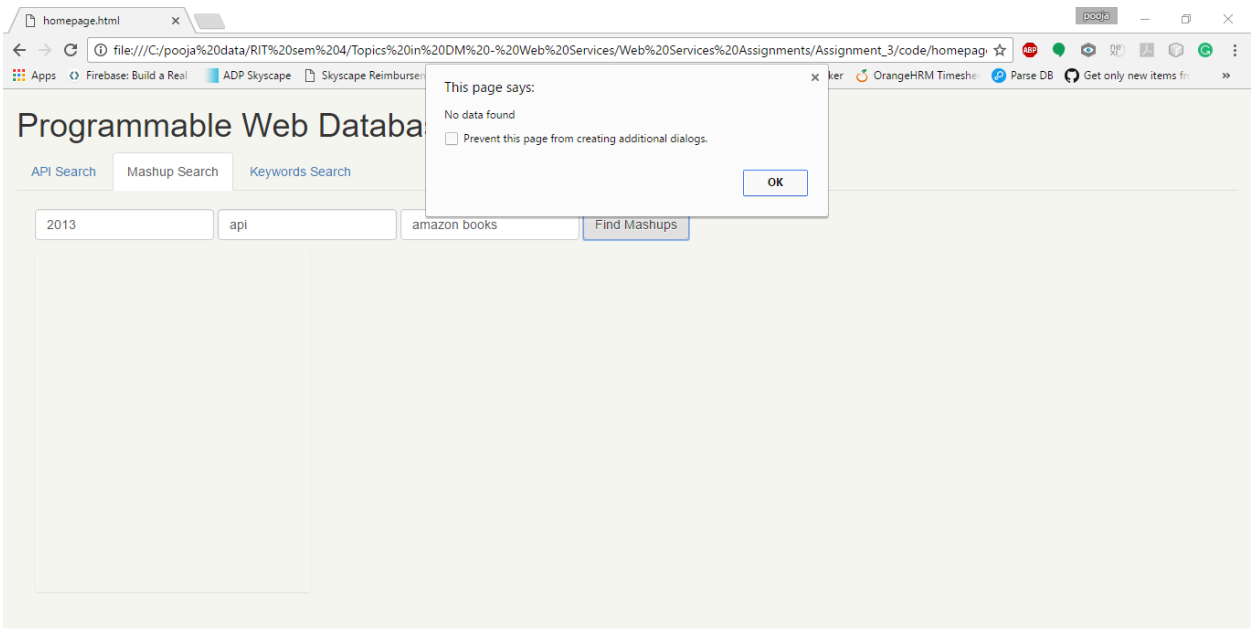
Query system for updated year = 2013 and tags containing amazon and books for Mashup search:



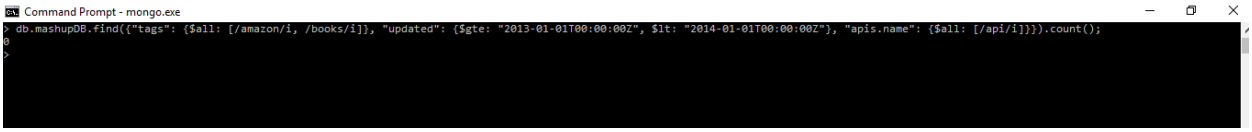
Verification with database:



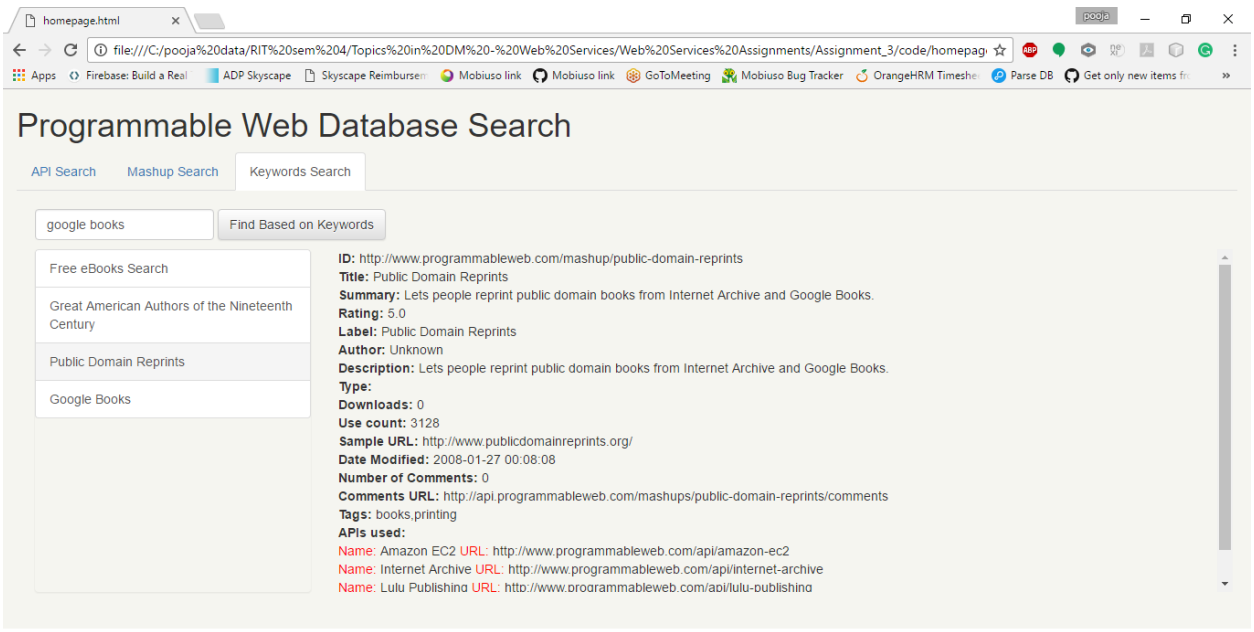
Query system for updated year = 2013, used APIs containing api and tags containing amazon and books for Mashup search:



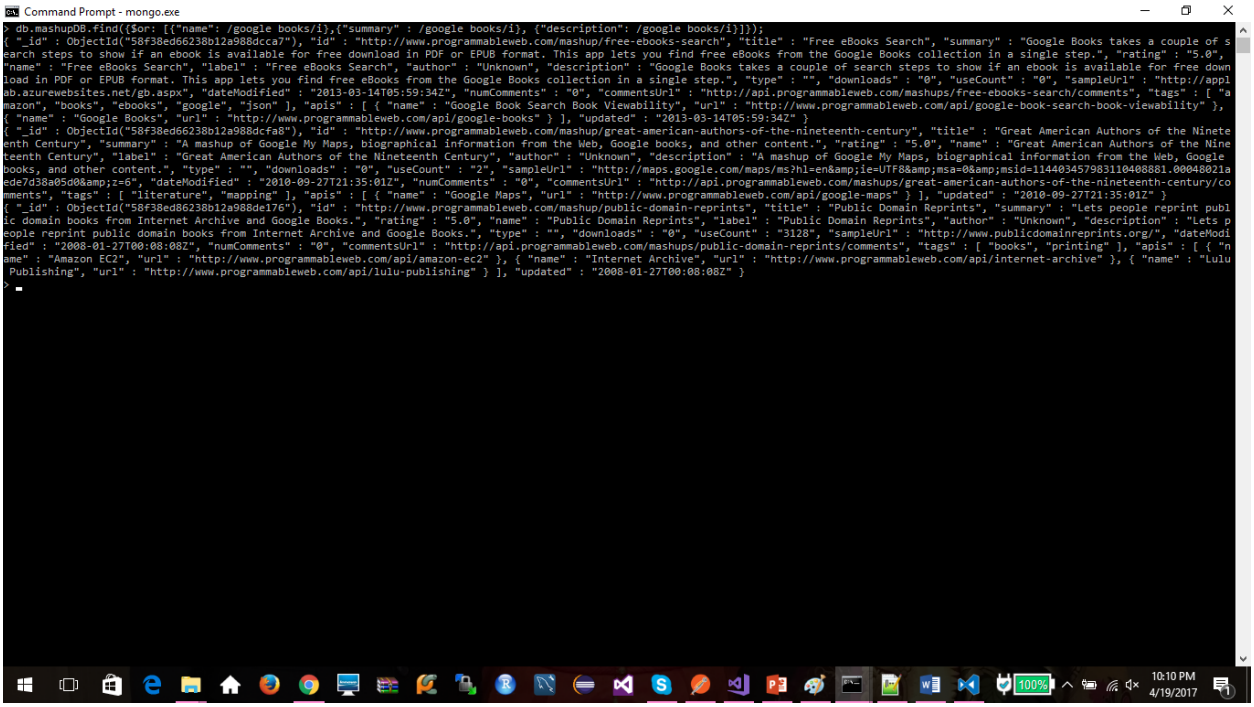
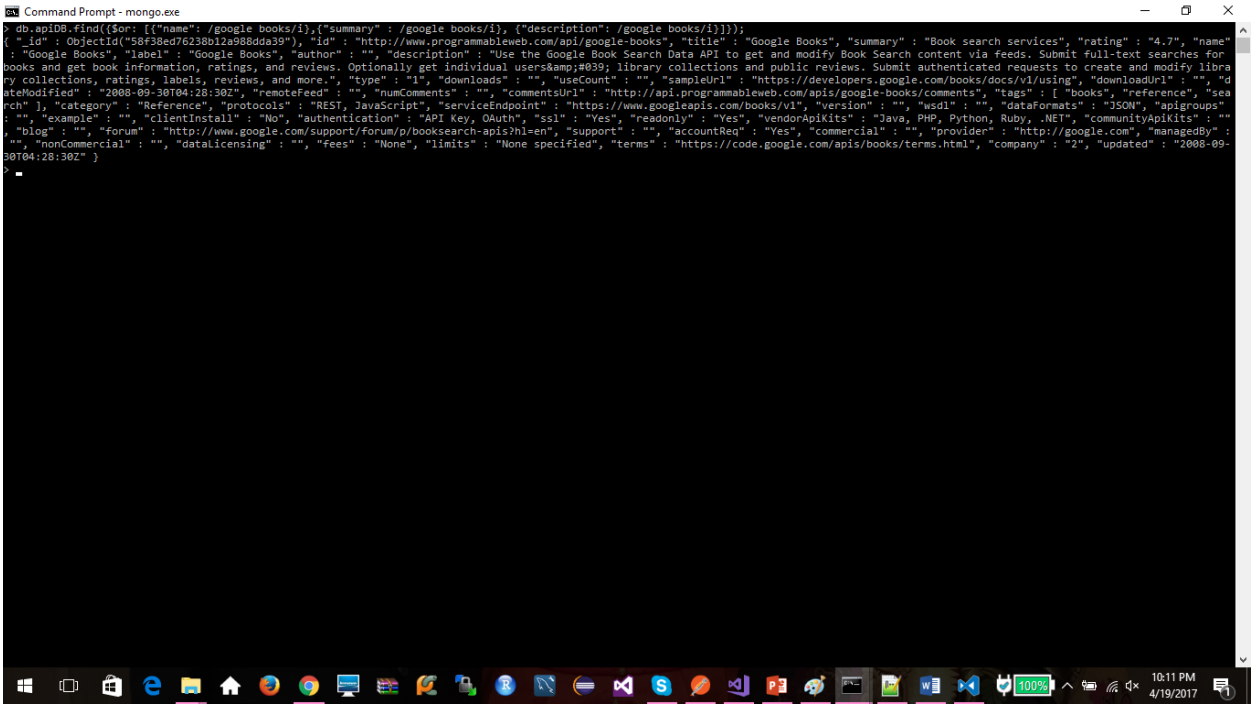
Verification with database:



Query system for keywords search of google books:



Verification with database (mashup Database):



Verification with database (api Database):