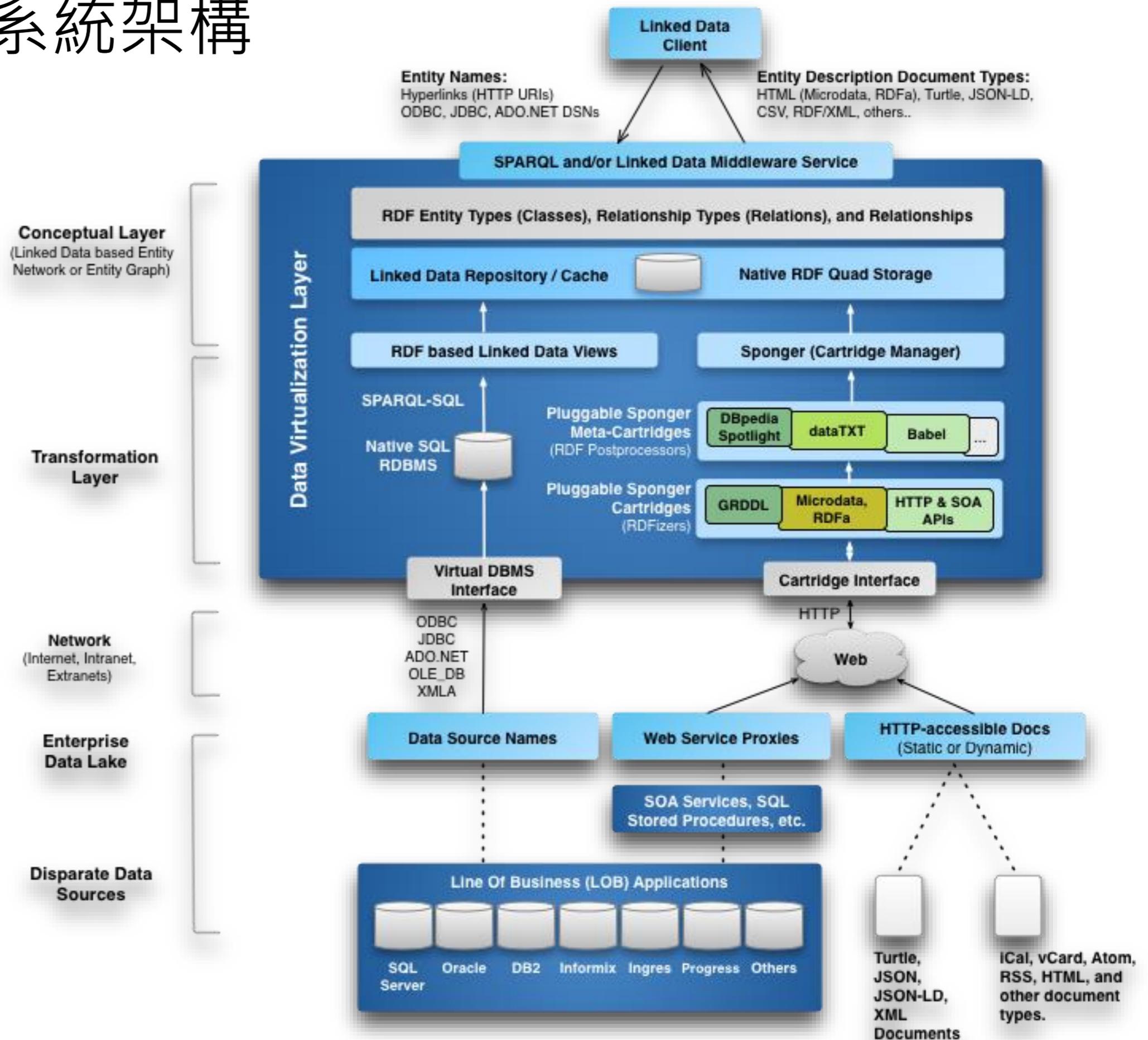


Virtuoso Universal Server

- Virtuoso Universal Server 是一個資料近用的中介軟體，並且混合許多資料庫引擎於一個系統中，包含傳統關連式資料庫系統 (RMDBS)、物件關連式資料庫(ORDBMS)、虛擬資料庫、RDF、XML、純文字，網路應用伺服器功能和檔案伺服器功能，Virtuoso 之所以自稱為universal server，是因為它可以具有單一多執行緒(multithread)伺服器處理，能夠執行多個協定(protocols)
- 開源版的Virtuoso Universal Server 也就是大家熟知的OpenLink Virtuoso
- Virtuoso Universal Server 事實上就是為了鏈結資料(Linked Data)需求所設計的資料庫伺服器
- 以下簡稱Virtuoso

Virtuoso 系統架構



Virtuoso安裝

- 開源版
 - 下載開源碼自行安裝
 - <https://github.com/openlink/virtuoso-opensource>
 - Windows有Binaries 的安裝檔
 - Ubuntu 上 apt-get install
 - OSX 上 brew install virtuoso
 - 更詳細安裝可參照 <http://geocyber.org/blog/?p=1417>
- 商業版
 - 於官網下載軟體後解壓縮於/etc/virtuoso，並授權檔(virtuoso.lic)存放於/etc/oplmgr
 - 在 /etc/virtuoso 中找到 install.sh，並安裝(sh install.sh)
 - 安裝後若沒有啟動，在/etc/virtuoso/bin中，以virtuoso-start.sh啟動Virtuoso

Virtuoso Conductor

系統進入畫面

Not Secure | lod.nchc.org.tw:8890/conductor/

VIRTUOSO CONDUCTOR

not logged in | Home

Home System Admin Database Replication Web Application Server XML Web Services Linked Data NNTP

Login into Database

Account
dba

Password
...

Remember me

Login

Interactive SQL (ISQL)
OpenLink Data Spaces
Virtuoso Start Menu

Documentation (web)
Tutorials (web)

Virtuoso Web Site

Enterprise Data Management
Enterprise Information Integration
Web Services Platform
Business Process Integration
Enterprise Collaboration

- Virtuoso啟動後，透過8890埠提供服務
- Virtuoso服務所預設之super user為dba

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Virtuoso系統資訊

← → ↻ 🏠 ⓘ Not Secure | lod.nchc.org.tw:8890/conductor/sys_info.vsp?sid=... ☆

VIRTUOSO CONDUCTOR logged in as dba | [Log out](#) | [Home](#)

[Home](#) [System Admin](#) [Database](#) [Replication](#) [Web Application Server](#) [XML](#) [Web Services](#) [Linked Data](#) [NNTP](#)

[Dashboard](#) [Security](#) [User Accounts](#) [Scheduler](#) [Parameters](#) [Registry](#) [Packages](#) [Backup](#) [Monitor](#)

System Info

[Refresh](#) Page Refreshed 2018-09-16 13:00 [Preferences](#)

General

Up Since: **2018-08-09 11:39**
Time Zone: **GMT +480 min.**
Version: **08.01.3307**
Install Directory: **/home/dongpo/virtuoso/database/**
Host: **lod-vm**

HTTP Server

Connections: **3637**
HTTP Requests: **4074**
Accepts Queued: **10**
Accepts requested: **0**

Diagnostics

Profiling: **Turned OFF**

Database Server

Disk Reads: **80025**
Disk Writes: **55223**
Last Backup: **unknown**
Log Filename: **virtuoso.trx**
Clients Connected: **0**

Space Allocation

Master Database: **180.00 MB, 86.35 MB free, 152.00 KB remap**
Temp Database: **12.00 MB, 11.96 MB free**
Transaction Log File: **virtuoso.trx 6.21 KB**

License

Server: **OpenLink Virtuoso VDB Server**
Platform: **Linux**
Maximum Licensed Client: **#ERR#**
Connections:
Build Date: **Apr 24 2018**
License Owner: **#ERR#**

Disk

Read ahead **77%**, **0%** in last 15 s

Index	Reads	Hit %
S	410	0
SOURCES	97	0
SOURCES	61	358

Locks

119 waits, **0** deadlocks

Index	Wait (msec)	Wait %
RO_VAL	4584	0
SYS_DAV_QUEUE	18	0
ADMIN_SESSION	0	0

Clients

0 clients, **0** connects since start
1 threads running, **0** waiting, **0** in network IO

Account	Connections	bytes in	bytes out	Threads
---------	-------------	----------	-----------	---------

Version: 08.01.3307
Build: Apr 24 2018

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- System Admin > Dashboard

Virtuoso用戶管理

Version: 08.01.3307
Build: Apr 24 2018

System Admin > User Accounts

Login name	Description	Last Login	Last Edit	
dav	WebDAV System Administrator			Edit
dba		Less than a minute ago	Less than a minute ago	Edit
dongpo	dongpo			Edit Delete
nobody				Edit Delete
steven	steven			Edit Delete

產銷履歷資料



政府資料開放平臺
DATA.GOV.TW

登入/註冊

全部資料集

互動專區

最新消息

諮詢小組

關於平臺

首頁 » 資料集 » 產銷履歷

產銷履歷

- Published on <https://data.gov.tw/dataset/7556>
- Released via CC-BY 4.0

資料集評分:



平均 2.4 (7 人次投票)

資料集描述:

資料提供包括：追蹤碼、農民經營業者、組織代碼、產品名稱、產地、生產者名稱、包裝日期、驗證機構、驗證有效日期、通路商資訊、詳細栽種流程、詳細履歷資料、詳細加工流程、其他驗證資訊、農產品產地地段地號、原料追溯碼網址、一籤一碼追溯碼等欄位資訊。

主要欄位說明:

ProductName; OrgID; Producer; Place; FarmerName; PackDate;
CertificationName; ValidDate; StoreInfo; Tracecode; LandSecNO;
ParentTraceCode; TraceCodelist; Log_UpdateTime; OperationDetail;
ResumeDetail; ProcessDetail; CertificateDetail

資料資源:

JSON



檢視資料

資料提供包括：追蹤碼、農民經營業者、組織.....

CSV



檢視資料

資料提供包括：追蹤碼、農民經營業者、組織.....

XML



檢視資料

資料提供包括：追蹤碼、農民經營業者、組織.....

提供機關:

行政院農業委員會

提供機關聯絡人:

李先生 (0223126979)

產銷履歷資料

- 產銷履歷資料約從 2015/1/4 開始
- 幾乎天天更新，除了假日
- 目前已超過一百萬筆資料

```
- {  
  ProductName: "檸檬-產銷履歷檸檬(產銷履歷檸檬)",  
  OrgID: "136947",  
  Producer: "原龍合作社",  
  Place: "屏東縣竹田鄉新田段",  
  FarmerName: "李榮倫",  
  PackDate: "2017/03/10",  
  CertificationName: "國立屏東科技大學",  
  ValidDate: "2019/03/29",  
  StoreInfo: "■ 超市：惠康Wellcome超市(全台各分店), ■ 量販店：愛買(全台各分店)家樂福(全台各分店)全聯福利中心(全台各分店)好市多(Costco)(無提供相關資訊)",  
  Tracecode: "1060310104200045",  
  LandSecNO: "TC0336,31520000;TC0336,22590000;TC0336,26460000",  
  ParentTraceCode: "",  
  TraceCodelist: "1060310104200045",  
  OperationDetail: "http://data.coa.gov.tw:80/Service/OpenData/Resume/OperationDetail\_Plus.aspx?Tracecode=1060310104200045",  
  ResumeDetail: "http://data.coa.gov.tw:80/Service/OpenData/Resume/ResumeDetail\_Plus.aspx?Tracecode=1060310104200045",  
  ProcessDetail: "http://data.coa.gov.tw:80/Service/OpenData/Resume/ProcessDetail\_Plus.aspx?Tracecode=1060310104200045",  
  CertificateDetail: "http://data.coa.gov.tw:80/Service/OpenData/Resume/CertificateDetail\_Plus.aspx?Tracecode=1060310104200045"  
},
```

產銷履歷資料

1. 產品名稱
2. OrgID
3. 農產品經營業者
4. 產地
5. 生產者姓名
6. 包裝日期/出貨日期
7. 驗證單位
8. 驗證有效日期
9. 通路商資訊
10. 追蹤碼
11. 農產品產地地段地號
12. 原料追溯碼網址
13. 一籤一碼追溯碼
14. 更新時間
15. 詳細栽種流程
16. 詳細履歷資料
17. 詳細加工流程
18. 其他驗證資訊

```
- {  
  ProductName: "檸檬-產銷履歷檸檬(產銷履歷檸檬)",  
  OrgID: "136947",  
  Producer: "原龍合作社",  
  Place: "屏東縣竹田鄉新田段",  
  FarmerName: "李榮倫",  
  PackDate: "2017/03/10",  
  CertificationName: "國立屏東科技大學",  
  ValidDate: "2019/03/29",  
  StoreInfo: "■ 超市: 惠康Wellcome超市(全台各分店), ■ 量販店: 愛買(全市多(Costco)(無提供相關資訊)",  
  Tracecode: "1060310104200045",  
  LandSecNO: "TC0336,31520000;TC0336,22590000;TC0336,26460000",  
  ParentTraceCode: "",  
  TraceCodeList: "1060310104200045",  
  OperationDetail: "http://data.coa.gov.tw:80/Service/OpenData/Tracecode=1060310104200045",  
  ResumeDetail: "http://data.coa.gov.tw:80/Service/OpenData/ResumeDetail=1060310104200045",  
  ProcessDetail: "http://data.coa.gov.tw:80/Service/OpenData/ProcessDetail=1060310104200045",  
  CertificateDetail: "http://data.coa.gov.tw:80/Service/OpenData/CertificateDetail=1060310104200045"  
},
```

資料清理與結構化

- 雖然產銷履歷資料是以JSON釋出，看似結構化，其實資料內容並未充份正規化。

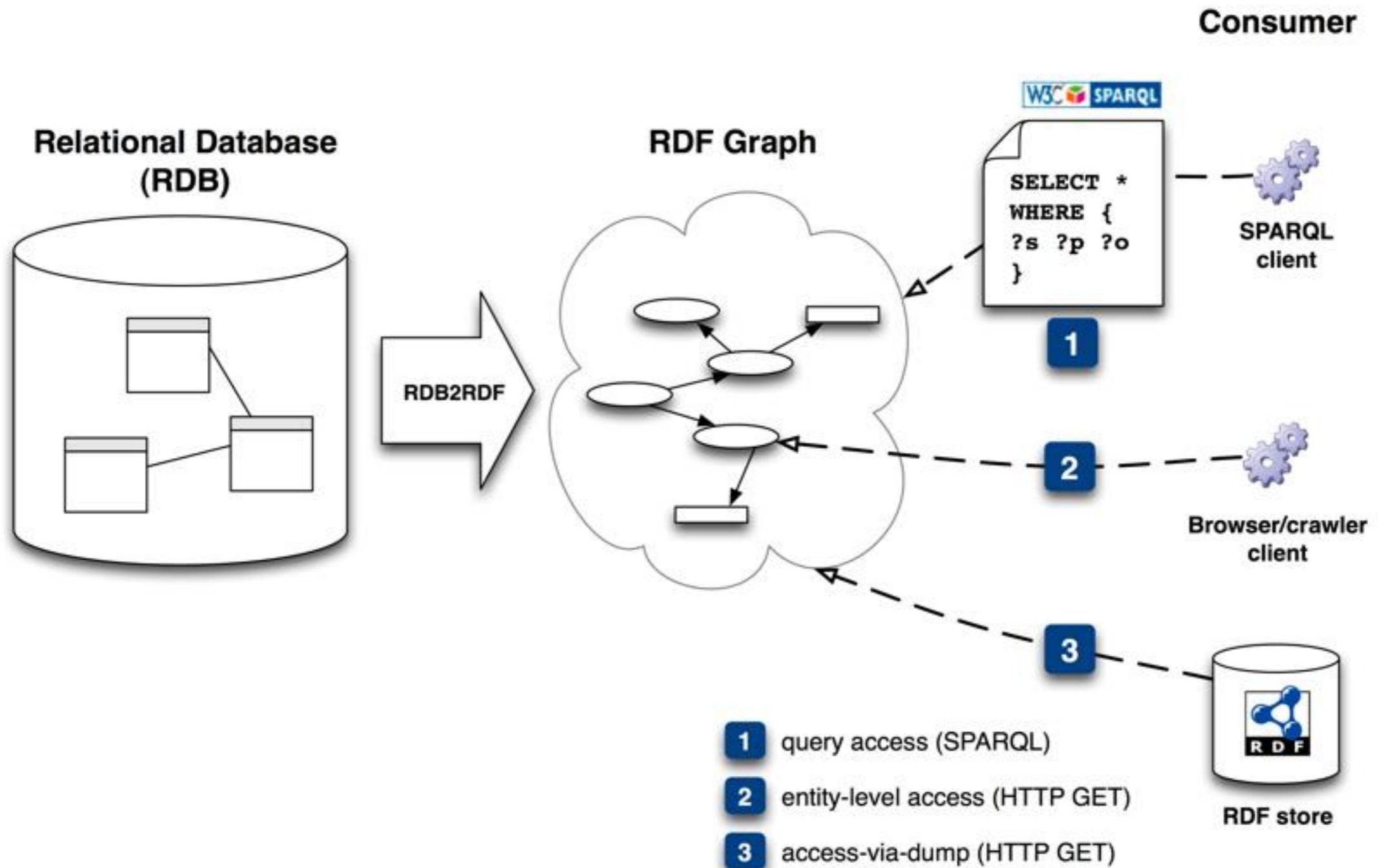
作物名稱包含在產品名稱，並且沒有標準化，一種作用可能會有各種名稱

```
- {  
  ProductName: "檸檬-產銷履歷檸檬(產銷履歷檸檬)",  
  OrgID: "136947",  
  Producer: "原龍合作社",  
  Place: "屏東縣竹田鄉新田段",  
  FarmerName: "李榮倫",  
  PackDate: "2017/03/10",  
  CertificationName: "國立屏東科技大學",  
  ValidDate: "2019/03/29",  
  StoreInfo: "■ 超市：惠康Wellcome超市(全台各分店), ■ 量販店：愛買(全台各分店)家樂福(全台各分店)全聯福利中心(全台各分店)好市多(Costco)(無提供相關資訊)",  
  Tracecode: "1060310104200045",  
  LandSecNO: "TC0336,31520000;TC0336,22590000;TC0336,26460000",  
  ParentTraceCode: "",  
  TraceCodeList: "1060310104200045",  
  OperationDetail: "http://data.coa.gov.tw:80/Service/OpenData/Resume/Tracecode=1060310104200045",  
  ResumeDetail: "http://data.coa.gov.tw:80/Service/OpenData/Resume/Tracecode=1060310104200045",  
  ProcessDetail: "http://data.coa.gov.tw:80/Service/OpenData/Resume/ProcessDetail\_Plus.aspx?Tracecode=1060310104200045",  
  CertificateDetail: "http://data.coa.gov.tw:80/Service/OpenData/Resume/CertificateDetail\_Plus.aspx?Tracecode=1060310104200045"  
},
```

商店資訊過於籠統，無法點對點的鏈結資料，例如，「惠康Wellcome超市(全台分店)」是指226家全台分店

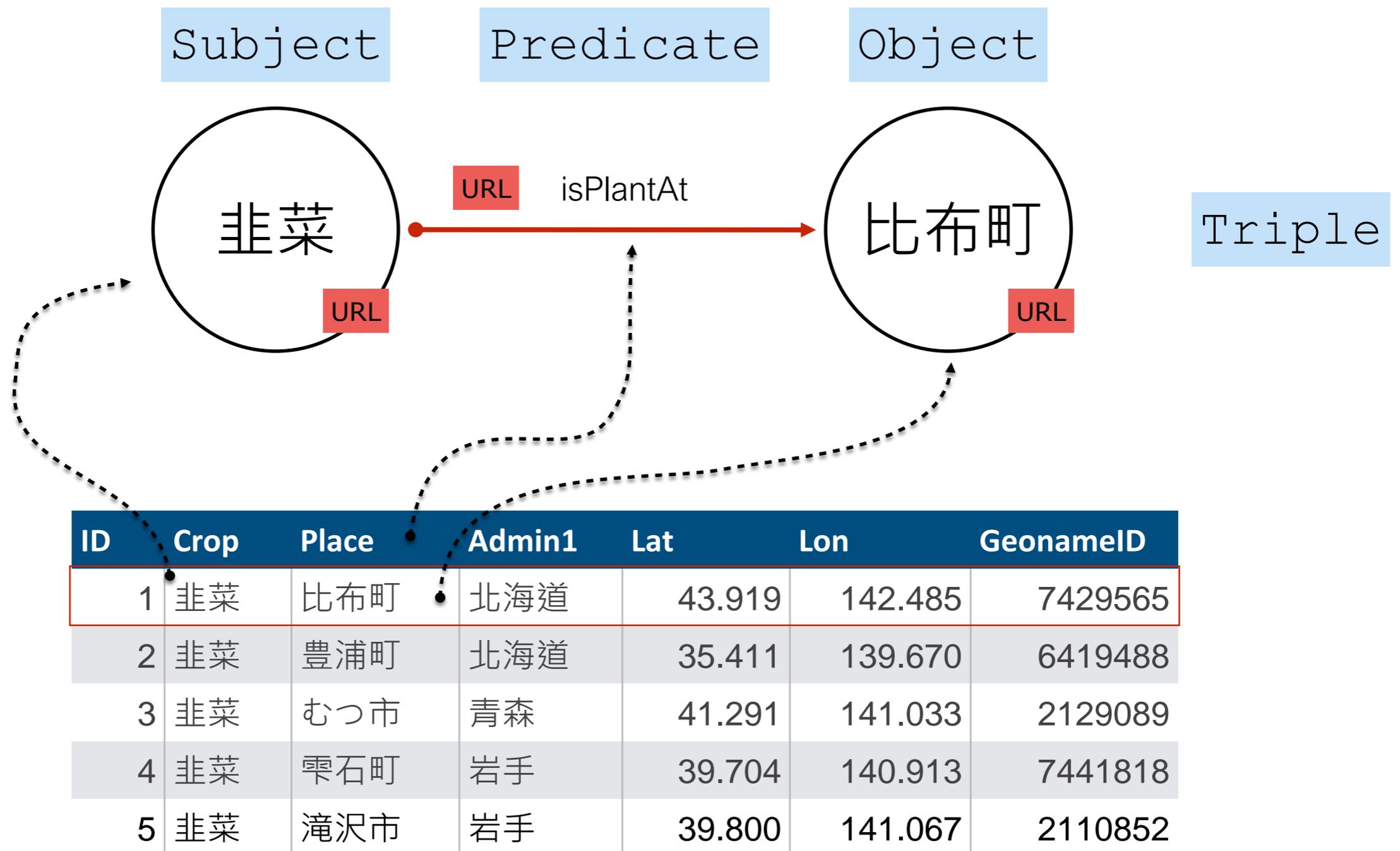
地籍號碼指涉地理空間，但不易操作，需要轉換為地理座標

RDB2RDF



RDB2RDF

RDB2RDF是指將正規化後的儲放在關連式資料庫中的資料轉換為「資源描述架構」(Resource Description Framework, RDF)



資料上傳

- 轉換後的RDF可利用Virtuoso Conductor的介面上傳資料

The screenshot shows the Virtuoso Conductor web interface. The browser address bar displays the URL: `lod.nchc.org.tw:8890/conductor/rdf_import.vsp?sid=d4e08349...`. The page title is "VIRTUOSO CONDUCTOR". The user is logged in as "dba" and can click "Log out" or "Home". The navigation menu includes: Home, System Admin, Database, Replication, Web Application Server, XML, Web Services, Linked Data, and NNTP. The "Linked Data" menu is expanded, showing options: SPARQL, Sponger, Statistics, Graphs, Schemas, Namespaces, Views, OAuth Service Binding, R2RML, and Quad Store Upload. The "Quad Store Upload" page is active, showing three options: "File*" (selected), "Resource URL*", and "Create graph explicitly". The "File*" option has a "Choose File" button and the filename "tapStores.nt". The "Resource URL*" option has a text input field containing "http://store.linkedopendata.tw/". The "Create graph explicitly" option has a text input field for "Named Graph IRI*" containing "http://localhost:8890/DAV". There are "Cancel" and "Upload" buttons at the bottom of the form. The footer of the page reads "Copyright © 1998-2018 OpenLink Software".

- Linked Data > Quad Store Upload

Virtuoso的Facet viewer

← → ↻ 🏠 ⓘ Not Secure | lod.nchc.org.tw:8890/fct/ ☆

OPENLINK
SOFTWARE

Not logged in : [Login](#)

Text Search | Entity Label Lookup | Entity URI Lookup

[Featured](#) | [Demo Queries](#) | [About](#)

Precision Search & Find

Search Text 蘿蔔

Hint: You can [add this engine](#) in search bar of an OpenSearch - capable browser

Faceted Search & Find service v1.17_git5 as of Apr 24 2018

POWERED BY **VIRTUOSO** LINKINGOPENDATA
RISC SWES Community Project

[OpenLink Virtuoso](#) version 08.01.3307 as of Apr 24 2018, on Linux (i686-generic-linux-glibc25-64), Single-Server Edition (3 GB total memory)

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Virtuoso Faceted Browser Copyright © 2009-2018 OpenLink Software

查詢顯示符合「蘿蔔」字串的結果

OPENLINK SOFTWARE Not logged in : Login

Displaying Ranked Entity Names and Text summaries where:

[?s1](#) has [any Attribute](#) with Value "蘿蔔" [Drop](#).

[View query as SPARQL](#) [Facet permalink](#)
[View as a Pivot collection\(edit query\)](#) [Query limit](#) 500 [Paged Snapshot](#)

Go to: Show 20 1 - 20 of 861 total ◀ ▶

Entity	Title	Named Graph	
tap:TraceableAgricul...Product/10601060999	胡蘿蔔-紅蘿蔔(紅蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 紅蘿蔔 紅蘿蔔.
tap:TraceableAgricul...Product/10601090266	胡蘿蔔-紅蘿蔔(紅蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 紅蘿蔔 紅蘿蔔.
tap:TraceableAgricul...Product/10601200428	胡蘿蔔-紅蘿蔔(紅蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 紅蘿蔔 紅蘿蔔.
tap:TraceableAgricul...ct/1060119053100040	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...Product/10602080104	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...ct/1060213082400061	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...Product/10602150721	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...Product/10602210360	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...ct/1060227047800009	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...Product/1060106913	胡蘿蔔-紅蘿蔔(紅蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 紅蘿蔔 紅蘿蔔.
tap:TraceableAgricul...Product/10601090736	胡蘿蔔-紅蘿蔔(紅蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 紅蘿蔔 紅蘿蔔.
tap:TraceableAgricul...ct/1060111072400017	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...Product/10601131023	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...ct/1060122055000050	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...ct/1060202070700062	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...ct/1060213081400036	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...ct/1060213087100044	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...ct/1060214091100038	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...Product/10602200528	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.
tap:TraceableAgricul...Product/10602200658	胡蘿蔔-胡蘿蔔(胡蘿蔔)	http://tap.linkedopendata.tw/	胡蘿蔔 胡蘿蔔 胡蘿蔔.

Go to: Show 20 1 - 20 of 861 total ◀ ▶

Complete result - 861 processed in 26 msec.
Resource utilization: 2.311K rnd 830 seq 1.263K same seg 63 same pg 0 same par 0 disk 0 spec disk 0B / 0 messages 0 fork

Entity Relationship Filters

Type
Attributes
Values
Distinct (Count)
Places

Options
Save
Featured Queries
New Search

每一個實體皆以一個HTTP URI指稱

Subject

在這個文件中所描述的實體，是以HTTP URL辨識，在HTML中以HyperLink呈現

Predicate

實體的屬性，每一個屬性皆以HTTP URI呈現

Object

屬性的值，每一個皆以HTTP URI或Literal呈現

OPENLINK SOFTWARE Logged in as: dba | Logout

Facets Description Metadata Settings

About: 甘藍-履歷高麗菜(履歷高麗菜) [Goto](#) [Sponge](#) [NotDistinct](#) [Permalink](#)

An Entity of Type : [tap:TraceableAgriculturalProduct](#), within Data Space : [140.110.240.68:8890](#) associated with source [document\(s\)](#)

Type: [tap:TraceableAgriculturalProduct](#) Command: [Start New Facet](#) Go

Attributes	Values
rdf:type	tap:TraceableAgriculturalProduct
rdfs:label	甘藍-履歷高麗菜(履歷高麗菜)
tap:certificateDetail	http://data.coa.gov.tw:80/Service/OpenData/Resume/CertificateDetail_Plus.aspx?Tracecode=1060106921
tap:hasATracecode	1060106921
tap:isCertifiedBy	環球國際驗證股份有限公司
tap:isMadeBy	鍾義雄
tap:isProducedAt	雲林縣二崙鄉大庄段
tap:isProducedBy	紅豆農產行
tap:operationDetail	http://data.coa.gov.tw:80/Service/OpenData/Resume/OperationDetail_Plus.aspx?Tracecode=1060106921
tap:processDetail	http://data.coa.gov.tw:80/Service/OpenData/Resume/ProcessDetail_Plus.aspx?Tracecode=1060106921
tap:referTo	tap:Crop/甘藍
tap:resumeDetail	http://data.coa.gov.tw:80/Service/OpenData/Resume/ResumeDetail_Plus.aspx?Tracecode=1060106921
LansSecNo	PC0320,0R270000
is tap:isReferredTo of	甘藍
is tap:make of	鍾義雄
is tap:member of	甘藍-履歷高麗菜(履歷高麗菜)
is tap:produce of	紅豆農產行

Faceted Search & Find service v1.17_git5 as of Apr 24 2018

以owl:sameAs連結資料

OPENLINK SOFTWARE Not logged in : Login

Facets (new session) Description Metadata Settings

About: 家樂福大直店 [Goto](#) [Sponge](#) [NotDistinct](#) [Permalink](#)

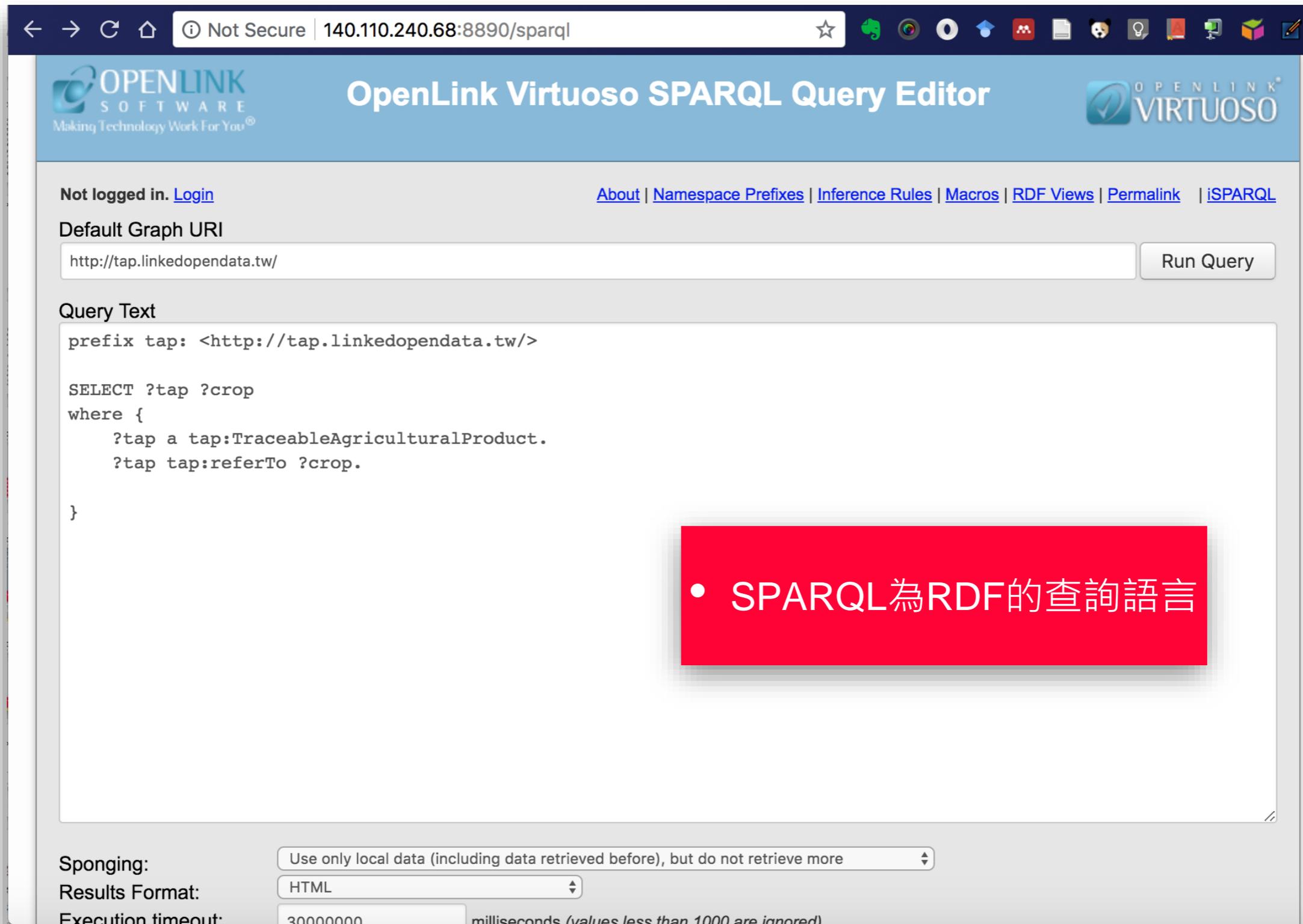
An Entity of Type : [tap:Store](#), within Data Space : [lod.nchc.org.tw:8890](#) associated with source [document\(s\)](#)

Type: [tap:Store](#)

Attributes	Values
rdf:type	tap:Store
sameAs	http://data.gcis.nat.gov.tw/od/data/api/5F64D864-61CB-4D0D-8AD9-492047CC1EA6? http://data.fda.gov.tw/lod/tfda/FoodCompanyRegistration_VIEW/DATA_SN/11237201
rdfs:label	家樂福大直店
http://www.w3.org/2006/vcard/hasAddress	104 台北市 中山區 樂群三路218號
tap:hasAWeblink	http://tapinfo.coa.gov.tw/work/tapinfo.php?func=where_buy&id=1
tap:is_member_of	家樂福
tap:sell	tap:resource/Crop/印度棗 tap:resource/Crop/地瓜 tap:resource/Crop/大蒜 tap:resource/Crop/文蛤 tap:resource/Crop/杏鮑菇 »more»
ogcgs:hasGeometry	http://store.linkedopendata.tw/Point/2
geo:lat	25.0823185(xsd:double)
geo:long	121.5580697(xsd:double)
is tap member of	家樂福

- 鏈結資料以owl:sameAs來連結網路中相同的實體，
 - 「經濟部工商登記」中的「家樂福大直店」
 - 「衛福部食品業者登錄」中的「家樂福大直店」

SPARQL 查詢



← → ↻ 🏠 ⓘ Not Secure | 140.110.240.68:8890/sparql

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OpenLink Virtuoso SPARQL Query Editor

OPENLINK VIRTUOSO

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Default Graph URI

Query Text

```
prefix tap: <http://tap.linkedopendata.tw/>

SELECT ?tap ?crop
where {
  ?tap a tap:TraceableAgriculturalProduct.
  ?tap tap:referTo ?crop.
}
```

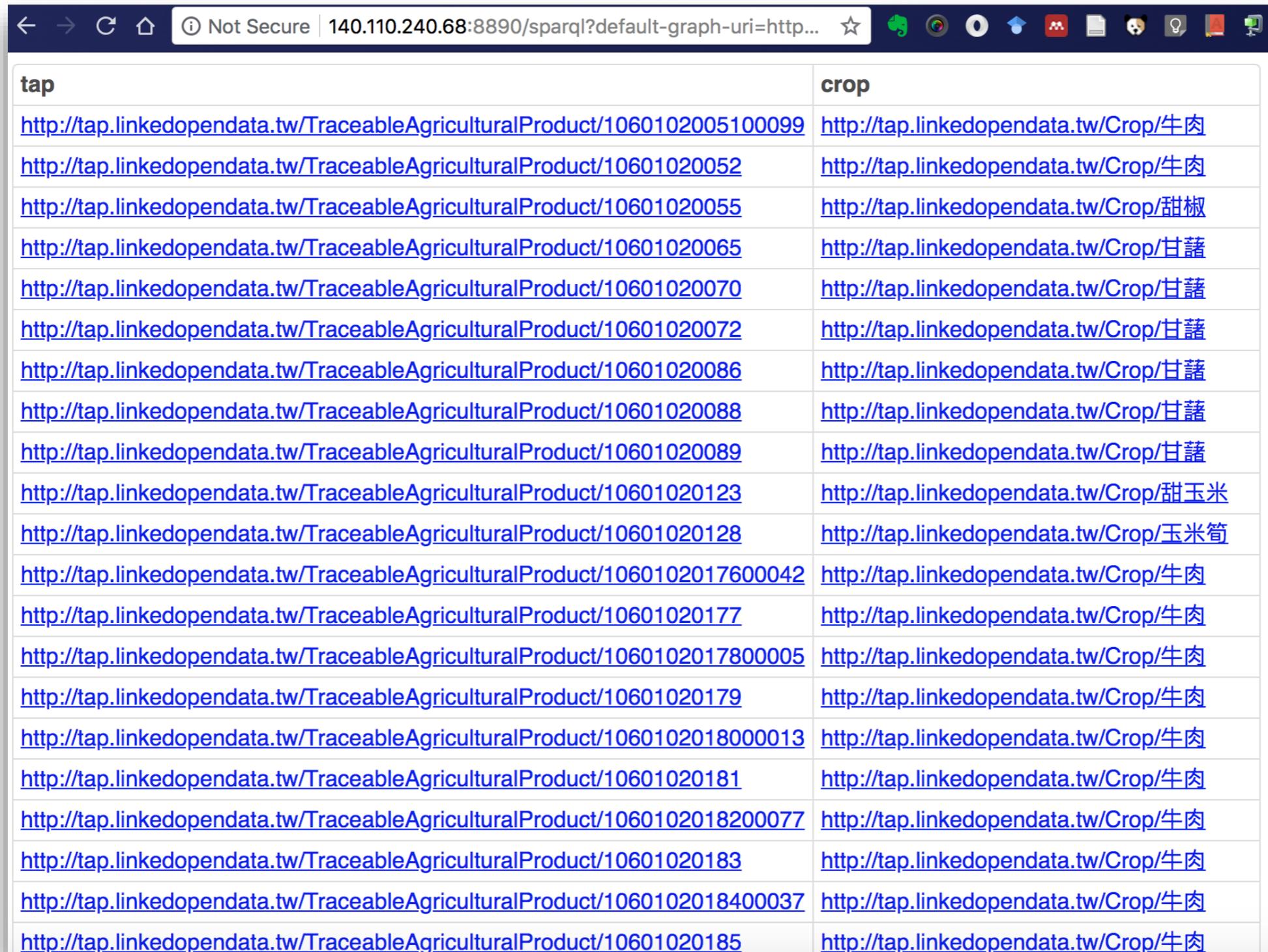
- SPARQL為RDF的查詢語言

Sponging: Use only local data (including data retrieved before), but do not retrieve more

Results Format: HTML

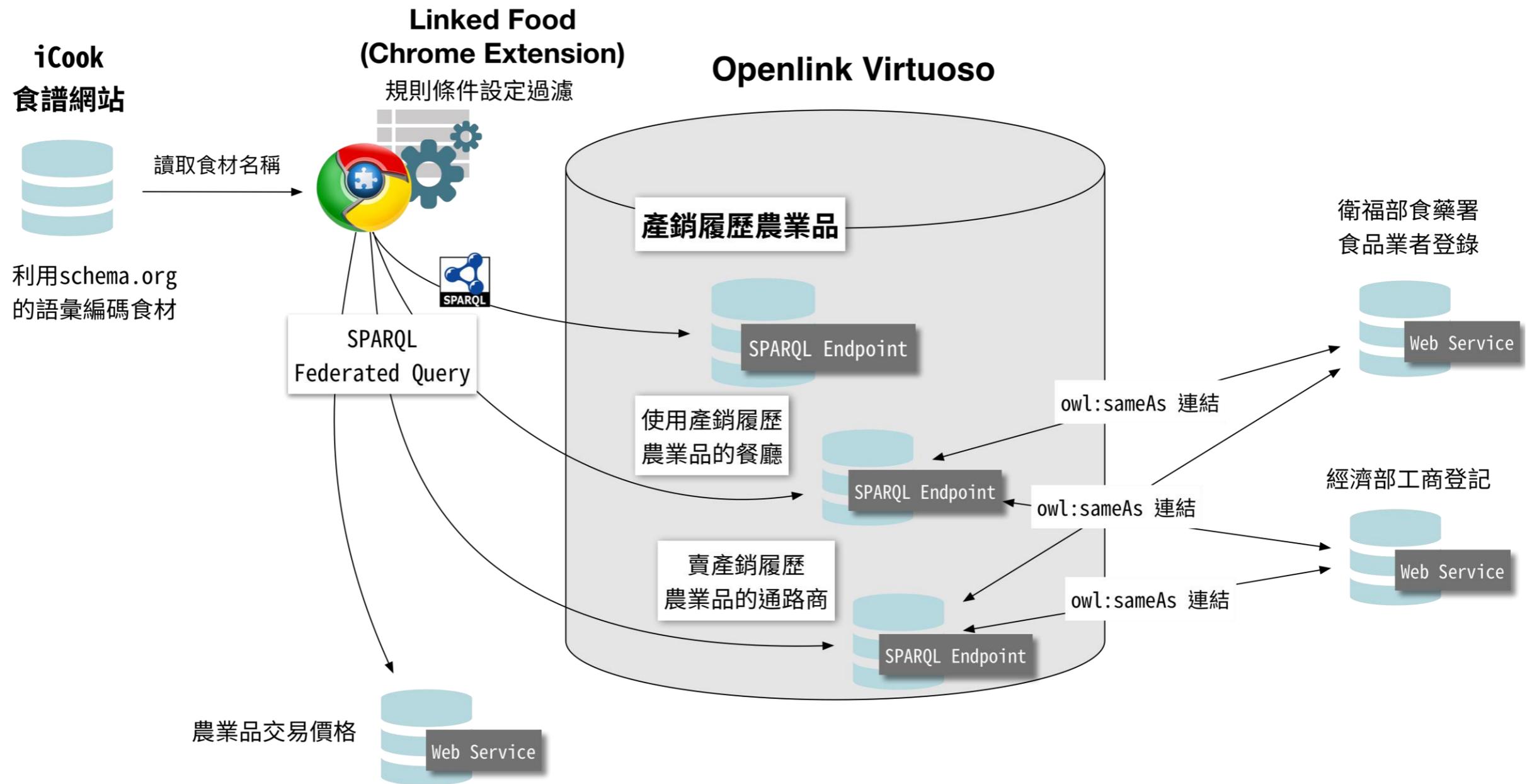
Execution timeout: 30000000 milliseconds (values less than 1000 are ignored)

SPARQL 查詢結果



tap	crop
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/1060102005100099	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020052	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020055	http://tap.linkedopendata.tw/Crop/甜椒
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020065	http://tap.linkedopendata.tw/Crop/甘藷
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020070	http://tap.linkedopendata.tw/Crop/甘藷
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020072	http://tap.linkedopendata.tw/Crop/甘藷
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020086	http://tap.linkedopendata.tw/Crop/甘藷
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020088	http://tap.linkedopendata.tw/Crop/甘藷
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020089	http://tap.linkedopendata.tw/Crop/甘藷
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020123	http://tap.linkedopendata.tw/Crop/甜玉米
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020128	http://tap.linkedopendata.tw/Crop/玉米筍
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/1060102017600042	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020177	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/1060102017800005	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020179	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/1060102018000013	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020181	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/1060102018200077	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020183	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/1060102018400037	http://tap.linkedopendata.tw/Crop/牛肉
http://tap.linkedopendata.tw/TraceableAgriculturalProduct/10601020185	http://tap.linkedopendata.tw/Crop/牛肉

以Virtuoso建立之應用服務架構



食譜網站 iCook.tw

- 國內外多數食譜網站之開發都利用 schema.org 語彙來詮釋網頁中資料內容，如 `schema:ingredients`，因此應用程式可直接讀取網頁中結構化的資料內容，而不用耙疏整個網頁，這也是 W3C Web of Data Best Practice 所建議的架構。

The screenshot displays the iCook.tw website interface for the recipe '蕃茄炒蛋'. The main content area shows a large image of the dish, social sharing buttons, and a description. A structured data overlay is visible on the right side of the page, showing the following information:

- Microdata** (RDFa, POSH)
- rdf:type**: `schema:Recipe`
- schema:author**: Feng Lin
- Name**: 蕃茄炒蛋
- schema:image**:
- schema:description**: 受大家喜愛的經典家常菜-蕃茄炒蛋，各有作法，各有美味，絕對是下飯的好佳餚。歡迎您來逛逛喔~
<https://www.facebook.com/S.G.Feng1969510907>
- schema:ingredients**: 牛蕃茄 2顆, 蛋 2顆, 青蔥 2根, 鹽 少許, 米酒 1大匙, 水 3大匙, 蕃茄醬 (可略) 1大匙, 糖 0.5-1大匙
- schema:recipeInstructions**: 1.準備食材，清理與清洗之。 2.青蔥切段。 3.蕃茄切瓣。 4.打蛋，加入調味料A，再攪拌均勻即可。 5.起鍋，開中火，放入適量的油，油熱後倒入蛋液，以鍋鏟快速攪拌，待蛋液凝固即可先起鍋 (這樣

At the bottom of the overlay, it shows 'ver: 2.15.2 OpenLink Structured Data Sniffer' and 'Copyright © 2015-2017 OpenLink Software'. Below the overlay, there is a footer text: '帶湯汁出門不怕溢出，美國便當盒！'.

LinkedFood

- LinkedFood是Chrome Extension，利用rdflib.js建構，使得該extension可以利用SPARQL Query去查找產銷履歷農產品、販售產銷履歷農產品的商店、使用產銷履歷農產品的餐廳、以及透過Web Service整合農產品價格和產量
- Chrome extension is available on <https://github.com/trashmai/LinkedFood>
- Live demo <https://www.youtube.com/watch?v=XytMotQwbA4>

LinkedFood

- 販售產銷履歷農產品的商店

The screenshot shows the iCook website interface. At the top, there is a search bar with the text '找食譜' and '蛋', and a '搜尋食譜' button. Below the search bar, there are several promotional banners: '不燙手便當盒', '低熱量夏日飲', '思康鍋5折中', and '菜單挑'. The main content area features the recipe title '蕃茄炒蛋' and a large image of the dish. To the right of the image is a list of ingredients: '牛蕃茄', '蛋', '青蔥', '調味料A', '鹽', '米酒', '調味料B', and '水'. Below the ingredients list, there is a '蕃茄醬 (可略)' entry with a quantity of '1大匙'. On the right side of the page, there is a '產銷履歷食材' (Production History Ingredients) section with a list of items: '青蔥', '蕃茄', '雞蛋', '白米', '洋蔥', and '糙米'. Each item has a corresponding TAPS (Traceable Agricultural Product Safety System) ID. A map overlay is positioned over the right side of the page, showing a location in Nangang, Taipei. A pop-up window on the map provides details for a store: 'Costco好市多-汐止店', located at '新北市汐止區大同路一段158號'. The pop-up also lists the products sold at this store: '青花菜、蕃茄、青江菜、青蔥、番茄、洋蔥、玉米筍、甜玉米、青椒'.

Secure <https://icook.tw/recipes/179026>

食譜社群平台
愛料理

找食譜 蛋 搜尋食譜

不燙手便當盒 低熱量夏日飲 思康鍋5折中 菜單挑

蕃茄炒蛋

列印 用LINE傳送 讚

食材

- 牛蕃茄
- 蛋
- 青蔥
- 調味料A
- 鹽
- 米酒
- 調味料B
- 水
- 蕃茄醬 (可略) 1大匙

產銷履歷食材

- 青蔥 TAPS 10601260632
- 蕃茄 10601190283
- 雞蛋 1060218011900047
- 白米 10601240978
- 洋蔥 10602140850
- 糙米 10601080327
- 10601040620
- 10601050502

哪裡買 哪裡吃 推不推 產銷履歷

Costco好市多-汐止店
新北市汐止區大同路一段158號
青花菜、蕃茄、青江菜、青蔥、番茄、洋蔥、玉米筍、甜玉米、青椒

LinkedFood 應用

- 使用產銷履歷農產品的餐廳

The screenshot displays the LinkedFood application interface. At the top left is the logo for '食譜社群平台 愛料理' (Recipe Community Platform Ai-Li-Li). A search bar contains the text '找食譜' and '蛋'. Below the search bar are navigation links: '不燙手便當盒', '低熱量夏日飲', '思康鍋5折中', and '菜單挑'. The main content area features a recipe for '蕃茄炒蛋' (Tomato Scrambled Eggs) with a photo of the dish and a list of ingredients: 牛蕃茄, 蛋, 青蔥, 調味料A, 鹽, 米酒, 調味料B, 水, and 蕃茄醬 (可略) 1大匙. On the right side, there is a '產銷履歷食材' (Production and Sales History Ingredients) list with items like 青蔥, 蕃茄, 雞蛋, 白米, 洋蔥, and 糙米. A 'TAPS' list of numbers is also visible. A map of Taipei is overlaid on the right, showing several restaurant locations marked with purple pins. A popup window for '大戶屋南港車站店' (Dahuwu Nangang Station Branch) is open, displaying the address: '台北市南港區忠孝東路七段369號7樓' and a list of menu items including '生雞蛋、韓式泡菜鍋定食、兒童烏龍湯麵套餐、兒童蛋包飯套餐、豬排蛋蓋飯、黃金沙拉、茶碗蒸、大戶屋招牌定食、兒童可樂餅套餐、豬肉味噌醬煮定食、炭烤鰻魚定食、炭烤雞肉蛋蓋飯、滑蛋豬排鍋定食、私房滑蛋香酥雞排鍋定食、雞肉味噌醬煮定食'.

LinkedFood 應用

- 批發市場的農產品產量與價格

The screenshot shows the iCook website interface. The main content is a recipe for '蕃茄炒蛋' (Tomato Scrambled Eggs). The recipe ingredients list includes: 牛蕃茄, 蛋, 青蔥, 調味料A (鹽, 米酒), 調味料B (水), and 蕃茄醬 (可略). A pop-up window titled '產銷履歷食材' (Production and Sales History Ingredients) is open, showing a list of ingredients with their corresponding TAPS (Traceability and Production Safety) numbers. The ingredients listed are: 青蔥, 蕃茄, 雞蛋, 白米, 洋蔥, and 糙米. The '蕃茄' (Tomato) entry is highlighted in blue. The pop-up window also includes a '推不推' (Recommend/Don't Recommend) button and a '產銷履歷' (Production and Sales History) button. The data source is TWFOOD.CC 台灣當季蔬果. The index interpretation states: 指數大於0表示推薦 (Index greater than 0 indicates recommendation), 產量指數高代表吃得當季、吃得新鮮 (High production index represents eating in season, eating fresh), and 價格指數高代表買得便宜划算 (High price index represents buying cheaply).

產銷履歷食材	TAPS
青蔥	10602160151
蕃茄	1060209024400017
雞蛋	1060217068600066
白米	10601140730
洋蔥	1060105107900082
糙米	10602160150
	1060222061200032
	10601030004

資料來源 TWFOOD.CC 台灣當季蔬果	日期	產量指數	價位指數	綜合推薦指數
蕃茄-黑柿	2017/05/09 ~ 2017/05/15	-18.85	76.12	57.27
蕃茄-牛蕃茄	2017/05/09 ~ 2017/05/15	64.62	119.17	183.79
蕃茄-粉柿	2017/05/09 ~ 2017/05/14	-30.17	81.86	51.69
蕃茄-其他	2017/05/12 ~ 2017/05/12	無資料	無資料	無資料

LinkedFood 應用

- 產銷履歷農產品原始連結

The screenshot shows the icook.tw website interface. The main content is a recipe for '蕃茄炒蛋' (Tomato Scrambled Eggs). The recipe includes a list of ingredients: 牛蕃茄 (Tomato), 蛋 (Egg), 青蔥 (Green Onion), 調味料A (Seasoning A), 鹽 (Salt), 米酒 (Meadow), 調味料B (Seasoning B), and 水 (Water). The quantity for '蕃茄醬 (可略)' (Tomato Sauce) is listed as 1大匙 (1 tablespoon).

A pop-up window titled '產銷履歷食材' (Traceability Ingredients) is open, showing a list of ingredients with their corresponding TAPS (Traceable Agricultural Product System) codes. The ingredients listed are 青蔥, 蕃茄, 雞蛋, 白米, 洋蔥, and 糙米. The TAPS codes are: 10602160151 (highlighted), 1060209024400017, 1060217068600066, 10601140730, 1060105107900082, 10602160150, 1060222061200032, and 10601030907.

Below the list of ingredients, there are tabs for '哪裡買' (Where to Buy), '哪裡吃' (Where to Eat), '推不推' (Recommend/Not Recommend), and '產銷履歷' (Traceability). The '產銷履歷' tab is selected, showing the following details:

- type: <http://tap.linkedopendata.tw/TraceableAgriculturalProduct>
- isProducedBy: 高雄市芳境果菜合作社
- certificateDetail: http://data.coa.gov.tw:80/Service/OpenData/Resume/CertificateDetail_Plus/Tracecode=10602160151
- processDetail: http://data.coa.gov.tw:80/Service/OpenData/Resume/ProcessDetail_Plus/Tracecode=10602160151
- isCertifiedBy: 環球國際驗證股份有限公司
- operationDetail: http://data.coa.gov.tw:80/Service/OpenData/Resume/OperationDetail_Plus/Tracecode=10602160151
- referTo: <http://tap.linkedopendata.tw/resource/Crop/蕃茄>