

# Venn Relation Define/Find

<https://github.com/kellysolow/vennRelation>

kellysolow / vennRelation

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master 1 branch 0 tags Go to file Add file Code

9a6cf7a 3 minutes ago 4 commits

.idea	findrule	16 hours ago
dump	findrule	16 hours ago
img	Initial commit	3 days ago
venv	Initial commit	3 days ago
README.md	Create README.md	3 minutes ago
addrule.py	exe + experiment version	2 hours ago
addrule2.py	exe + experiment version	2 hours ago
findrule.py	exe + experiment version	2 hours ago
main.exe	exe + experiment version	2 hours ago
main.py	Initial commit	3 days ago
mainUI.py	exe + experiment version	2 hours ago
vennUI.py	exe + experiment version	2 hours ago

# Program installation and execution process-1

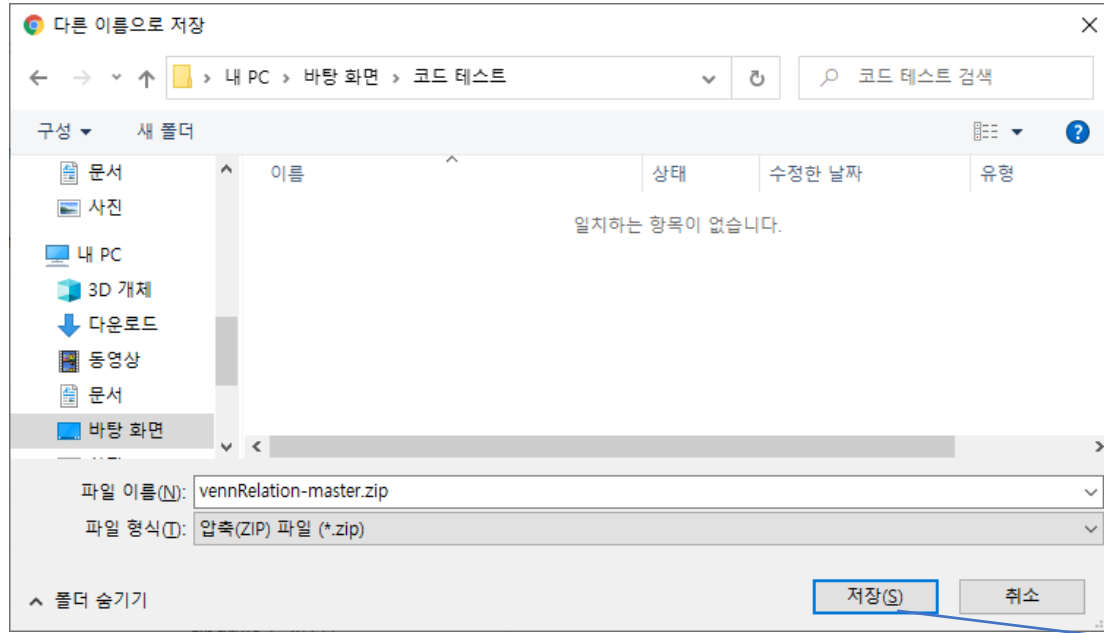
<https://github.com/kellysolow/vennRelation>

The screenshot shows the GitHub repository page for 'kellysolow/vennRelation'. The repository is on the 'master' branch with 1 branch and 0 tags. The file list includes: .idea (findrule), dump (findrule), img (Initial commit), venv (Initial commit), README.md (Create README.md), and addrule.py (exe + experiment version). The 'Code' button is highlighted in green, and its dropdown menu is open, showing options: Clone (HTTPS, SSH, GitHub CLI), Open with GitHub Desktop, Open with Visual Studio, and Download ZIP (highlighted with a red box).

1. Code button click

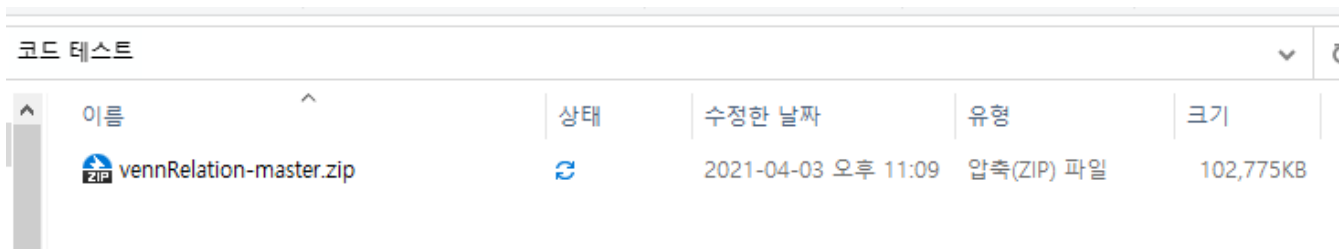
2. Download ZIP click

# Program installation and execution process-2



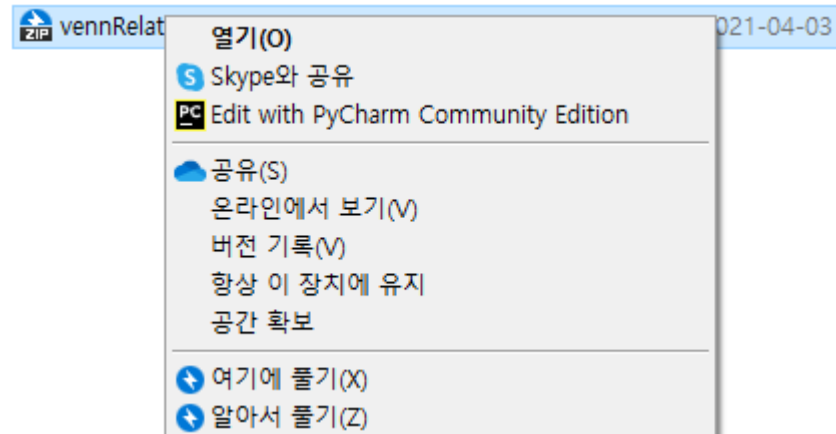
3. Specify download path

4. Click save



5. Open the download path

# Program installation and execution process-3

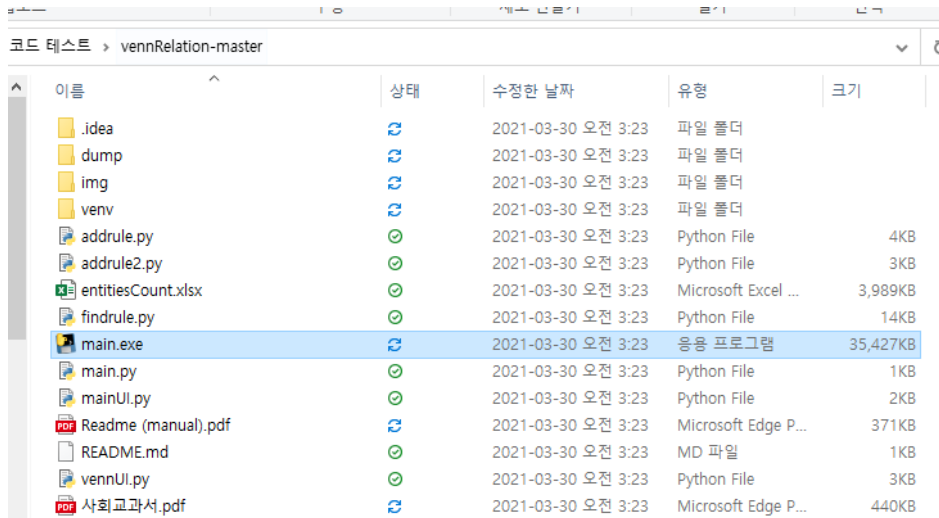


6. right-click – Unzip here

이름	상태	수정한 날짜	유형	크기
vennRelation-master	🔄	2021-03-30 오전 3:23	파일 폴더	
vennRelation-master.zip	🔄	2021-04-03 오후 11:09	압축(ZIP) 파일	102,775KB

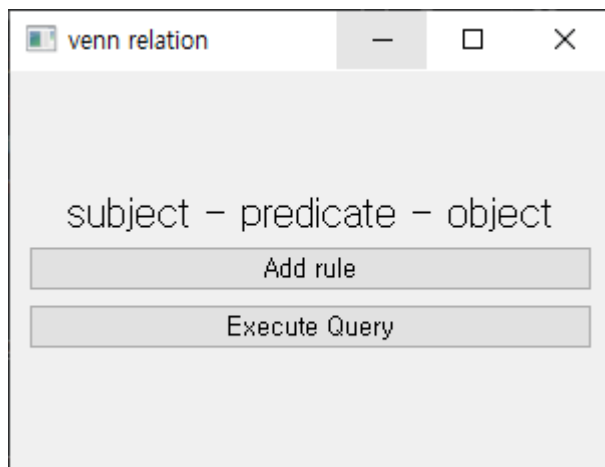
7. When the unzipped folder is created as shown in the picture on the left, open the folder

# Program installation and execution process-4



이름	상태	수정된 날짜	유형	크기
.idea	🔄	2021-03-30 오전 3:23	파일 폴더	
dump	🔄	2021-03-30 오전 3:23	파일 폴더	
img	🔄	2021-03-30 오전 3:23	파일 폴더	
venv	🔄	2021-03-30 오전 3:23	파일 폴더	
addrule.py	🟢	2021-03-30 오전 3:23	Python File	4KB
addrule2.py	🟢	2021-03-30 오전 3:23	Python File	3KB
entitiesCount.xlsx	🟢	2021-03-30 오전 3:23	Microsoft Excel ...	3,989KB
findrule.py	🟢	2021-03-30 오전 3:23	Python File	14KB
main.exe	🔄	2021-03-30 오전 3:23	응용 프로그램	35,427KB
main.py	🟢	2021-03-30 오전 3:23	Python File	1KB
mainUI.py	🟢	2021-03-30 오전 3:23	Python File	2KB
Readme (manual).pdf	🔄	2021-03-30 오전 3:23	Microsoft Edge P...	371KB
README.md	🟢	2021-03-30 오전 3:23	MD 파일	1KB
vennUI.py	🟢	2021-03-30 오전 3:23	Python File	3KB
사회교과서.pdf	🔄	2021-03-30 오전 3:23	Microsoft Edge P...	440KB

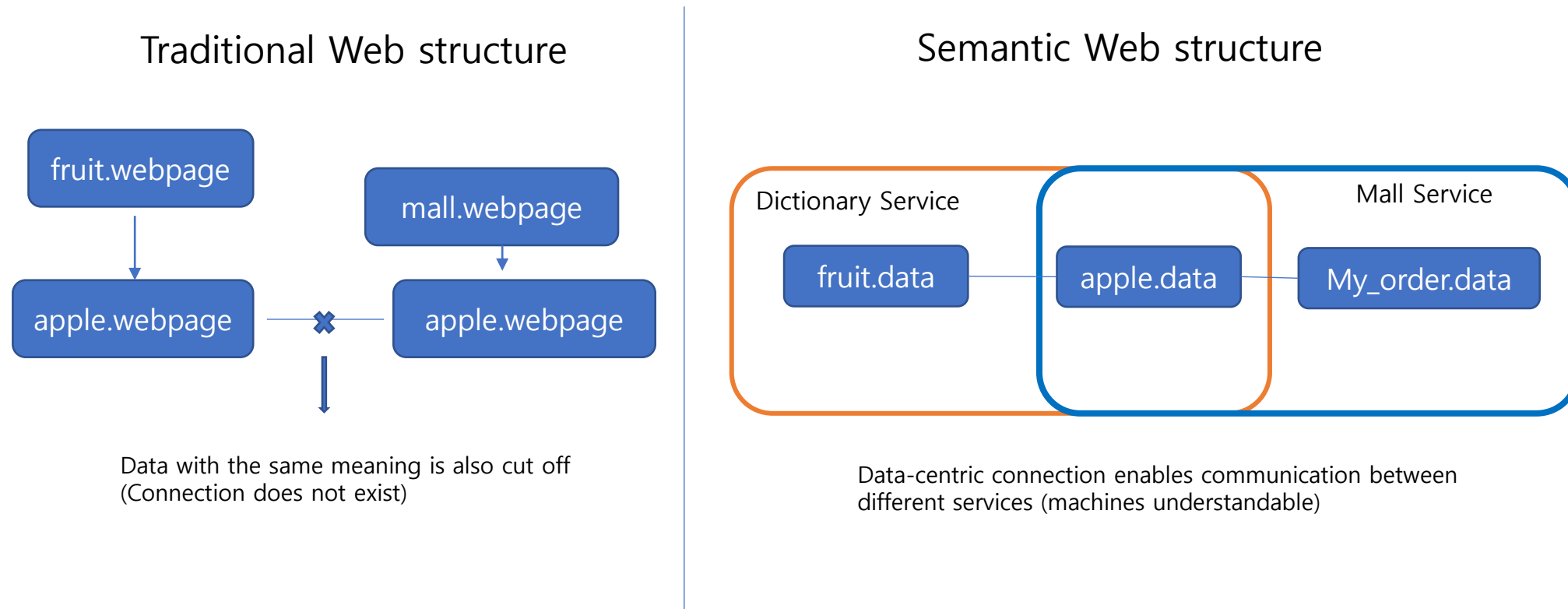
8. Run main.exe among the files in the folder  
(When execution is blocked by a firewall  
additional Information-Allow)



9. Screen on successful execution

# Purpose of the Program

- A new web standard called 'Semantic Web' aims at a machine-understood web.
- In order for the machine to understand, it is necessary to change the structure of the web from the document-centered to the data-centered.



A program that creates Semantic web-type data without the need for detailed understanding of the structure of the web.

# Purpose of the Program-2

- Creating data in the 'Semantic web' way

- Subject-predicate-object is organized in the order, and this is called a triple.

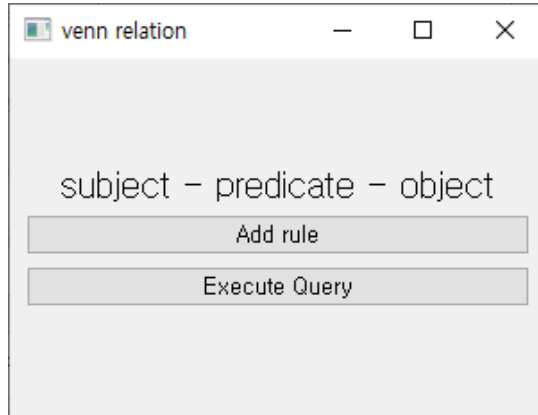
- Ex) Shopping Mall- Product - Apple

- Fruit – Type – Apple

- When configuring the above relationship on the existing Semantic Web, the direct connection method must be configured differently according to the predicate.

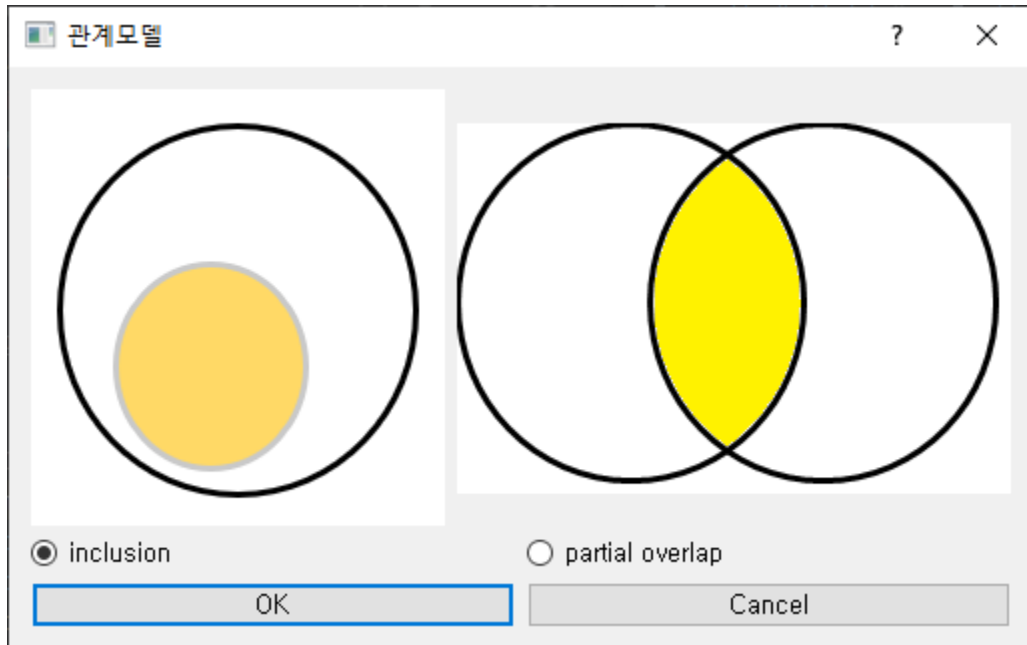
- In this program, the relationship definition is completed by selecting the subject and object to define the relationship, and selecting a Venn diagram suitable for the relationship.

# Trying to follow the program relationship definition



0. Determining subject and object to create relationship.  
(ex. fruit – fruitType – apple)

1. Click 'add rule'



2. Choosing a model that fits the subject and object relationship.

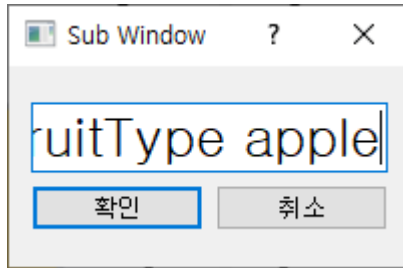
<inclusion model>  
Larger circle – subject  
Smaller circle – object

<partial overlapped model>  
Left circle - subject  
Colored part – object  
Right circle – Object group corresponding to predicate

Apple is included in the fruit, so select 'Inclusion Model'

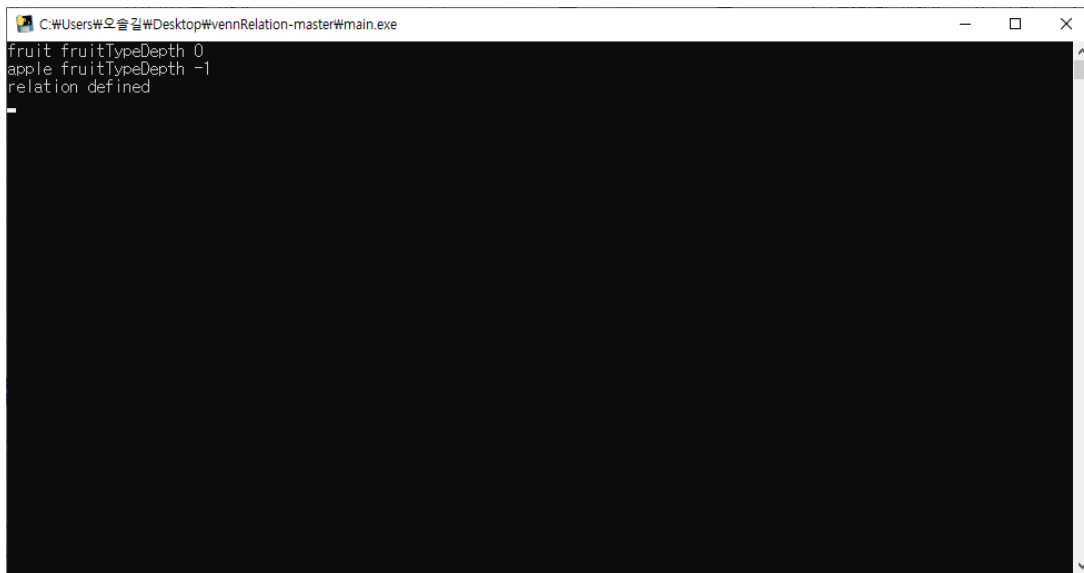


# Trying to follow the program relationship definition -2



3. Create a relationship to be defined(subject predicate object)

Write fruit fruitType apple using only spaces except for '-'



4. Confirm that the relationship is defined in the console window that pops up together

Relations are added to the semantic web data dump.

# Purpose of the Program -3

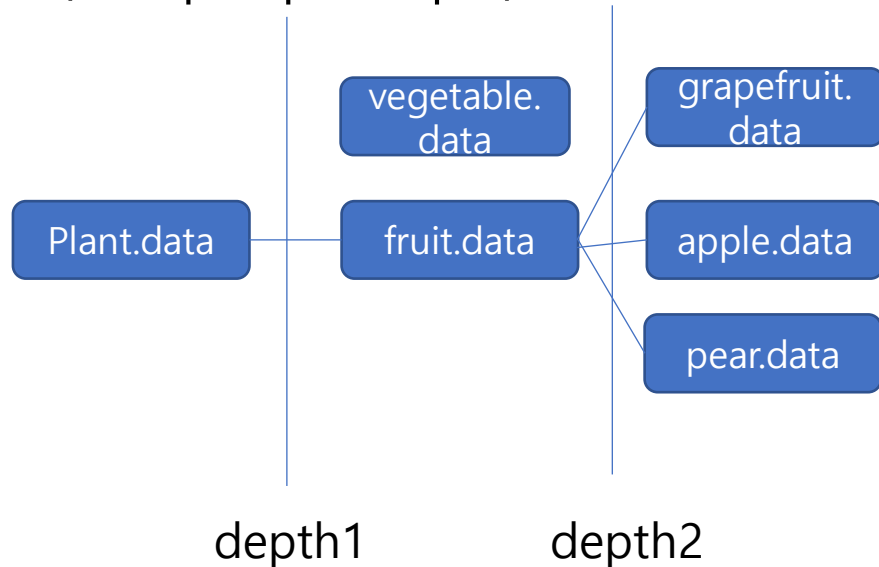
- Search for the connection relationship of data defined in the 'Semantic Web' way

ex) It is possible to check whether fruit and apple data are connected to each other

Ex) When there is a connection relationship 'Plant- subclass – fruit'

It is possible to confirm that several levels of relationships also can be connected like 'Plant – (subclass – fruit – type) - apple

(1 depth per triple)



```
ArLone_Township,_Pine_County,_Minnesota <http://www.opengis.net/gml/_Feature>
ArLone_Township,_Pine_County,_Minnesota "46.01888888888889"^^<http://www.w3.org/2001/XMLSchema#float>
ArLone_Township,_Pine_County,_Minnesota "-92.725"^^<http://www.w3.org/2001/XMLSchema#float>
ArLone_Township,_Pine_County,_Minnesota
Arna_Township,_Pine_County,_Minnesota
Arna_Township,_Pine_County,_Minnesota "9.8E7"^^<http://www.w3.org/2001/XMLSchema#double>
Arna_Township,_Pine_County,_Minnesota "9.79015505707008E7"^^<http://www.w3.org/2001/XMLSchema#double>
Arna_Township,_Pine_County,_Minnesota "9.75E7"^^<http://www.w3.org/2001/XMLSchema#double>
Arna_Township,_Pine_County,_Minnesota "9.73835529486336E7"^^<http://www.w3.org/2001/XMLSchema#double>
Arna_Township,_Pine_County,_Minnesota "500000.0"^^<http://www.w3.org/2001/XMLSchema#double>
Arna_Township,_Pine_County,_Minnesota "517997.6220672"^^<http://www.w3.org/2001/XMLSchema#double>
Arna_Township,_Pine_County,_Minnesota "311.0"^^<http://www.w3.org/2001/XMLSchema#double>
Arna_Township,_Pine_County,_Minnesota "310.896"^^<http://www.w3.org/2001/XMLSchema#double>
Arna_Township,_Pine_County,_Minnesota "86"^^<http://www.w3.org/2001/XMLSchema#nonNegativeInteger>
Arna_Township,_Pine_County,_Minnesota "0.9"^^<http://www.w3.org/2001/XMLSchema#double>
Arna_Township,_Pine_County,_Minnesota "0.8880349646476255"^^<http://www.w3.org/2001/XMLSchema#double>
```

(Part of the data dump)

# Try relation search function -1

addrule.py	2021-03-24 오후 4:06	Python File	4KB
addrule2.py	2021-03-24 오후 4:06	Python File	3KB
entitiesCount.xlsx	2021-03-24 오후 5:43	Microsoft Excel ...	3,989KB
findrule.py	2021-03-24 오후 4:06	Python File	10KB
main.exe	2021-03-24 오후 4:06	응용 프로그램	35.429KB

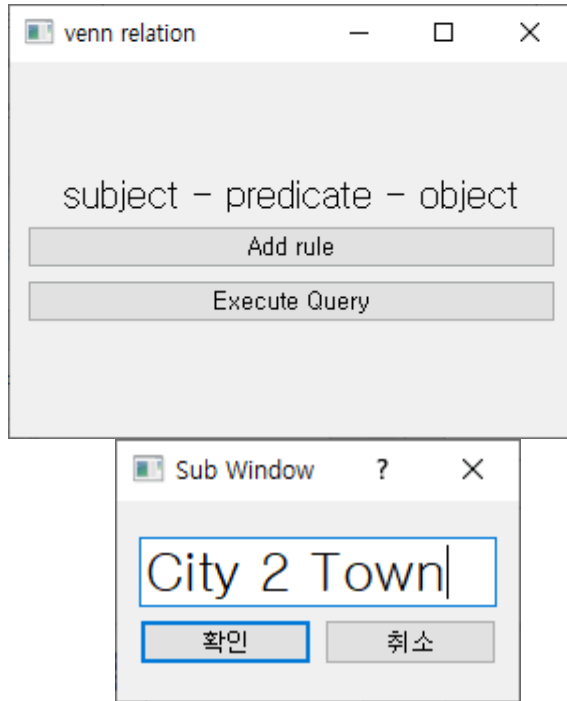
1. To search, open the entitiesCount.xlsx file that sorts the data in the current data dump by frequency of appearance.

2. Select two entities you want to check if the relationship exists on the web

(ex City, Town)

1	United_States	20821
2	<http://www.opengis.net/gml/_Feature>	20669
3	0.0^^<http://www.w3.org/2001/XMLSchema#double>	16201
4	Central_Time_Zone_(North_America)	10492
5	Eastern_Time_Zone	6726
6	City	5830
7	Township_(United_States)	2820
8	Minnesota	2719
9	Census-designated_place	2510
10	2010^^<http://www.w3.org/2001/XMLSchema#gYear>	2293
11	Michigan	1902
12	Town	1730
13	Mountain_Time_Zone	1599
14	Illinois	1441
15	Central_European_Time	1423
16	Pacific_Time_Zone	1371
17	California	1359
18	258998.8110336^^<http://www.w3.org/2001/XMLSchema#double>	1090
19	Missouri	1049
20	Iowa	1036
21	1.0^^<http://www.w3.org/2001/XMLSchema#double>	978
22	Florida	957

# Try relation search function -2



3. Click 'execute query' button

4. Enter the depth and the two entities you want to check the relationship as shown in the picture on the left.

(ex. [entity1] [depth] [entity2])

(Difficult to perform search for too high depth(memory resource issue))

5. Search results are displayed in the console window

```
depth 1 searching...
depth 2 searching...
```

# Program application

- You can also search for entities that you have defined yourself using the Venn diagram.

```
apple is included to fruit  
fruit 0  
apple -1
```

(result of 'fruit 2 apple')

- Searchable by mixing the defined entity and data dump(ex fruit 4 City)
- Relationships defined using this program utilize depth, so they can be searched faster than existing data from dumps.