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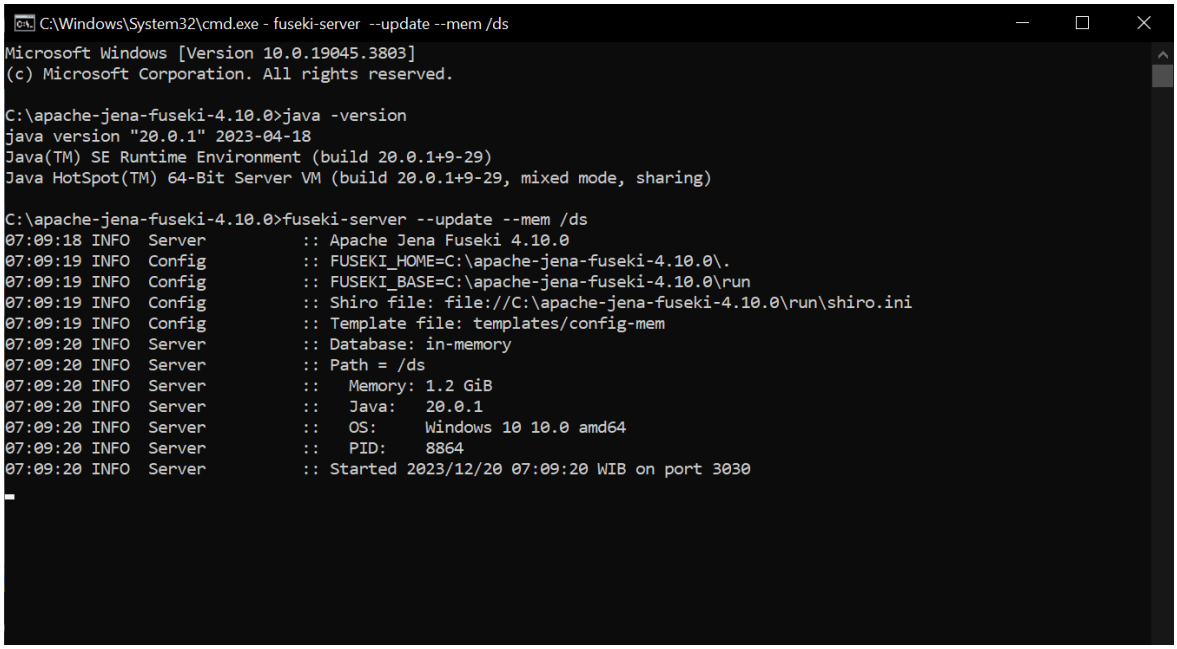
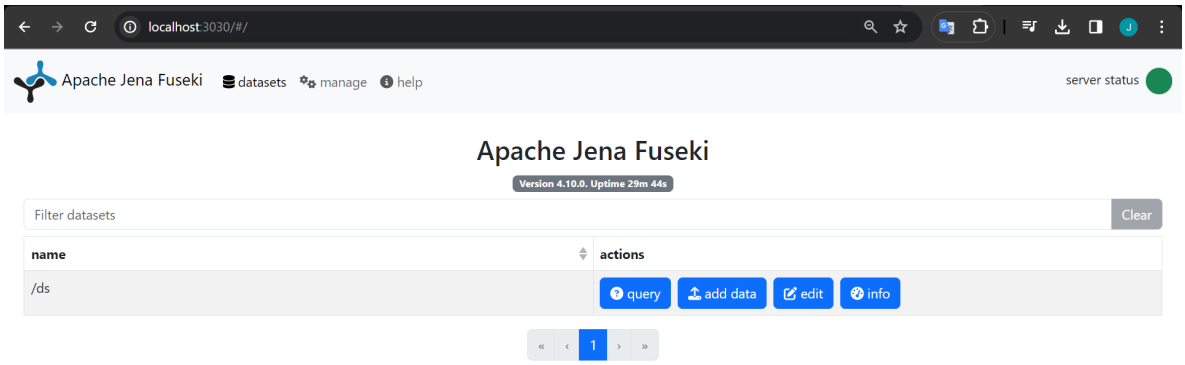
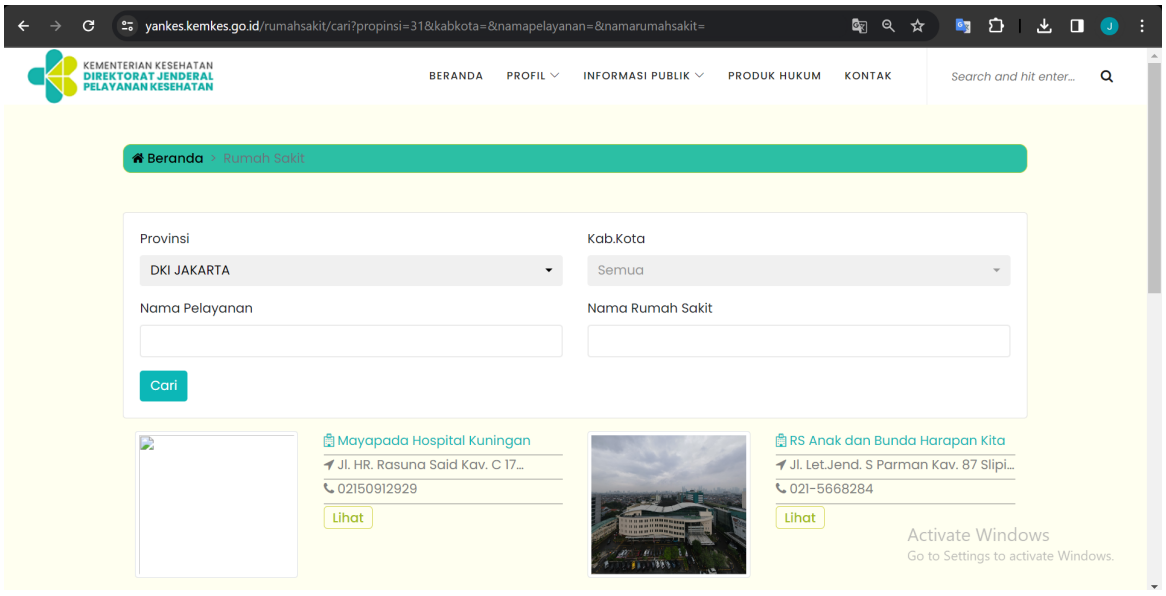
1. Instalasi Apache Jena Fuseki



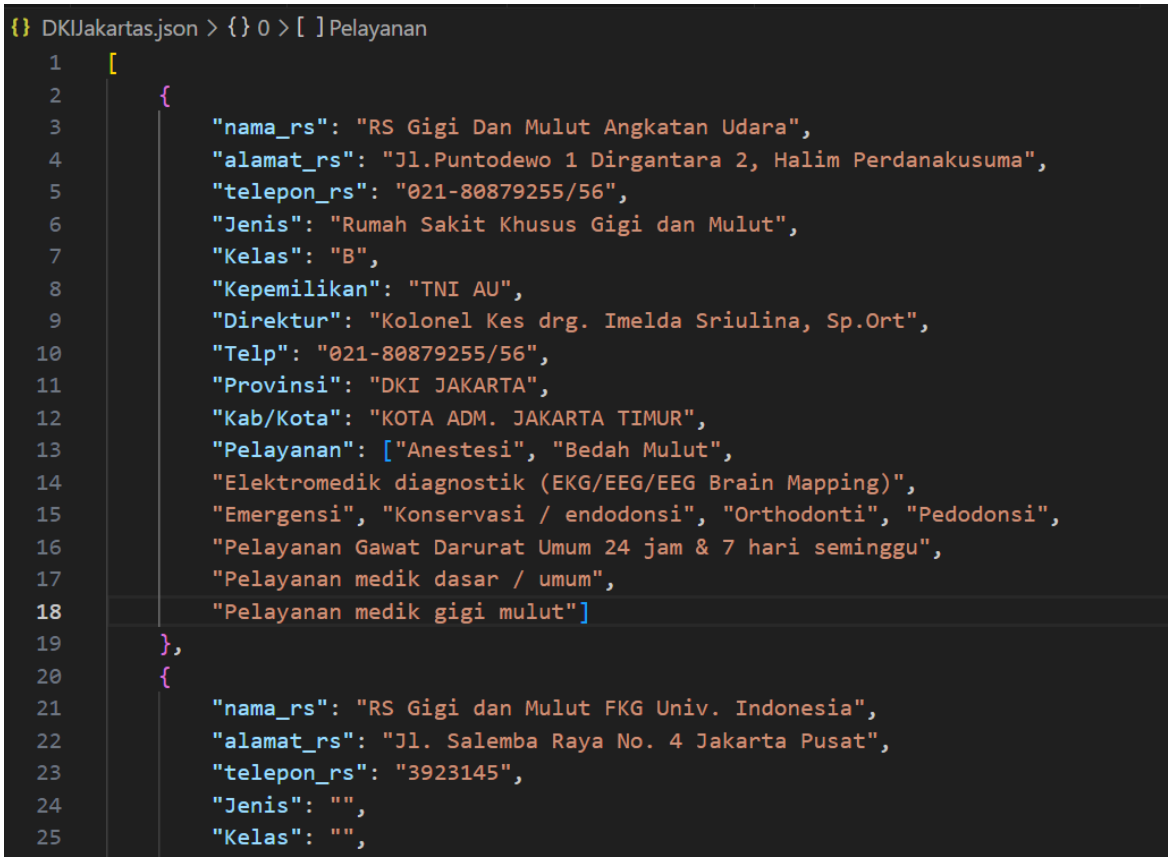


2. Crawling data dari web https://yankes.kemkes.go.id/rumahsakit menjadi DKIJakartas.json



```
                # Pastikan telepon_rs_elem bukan None sebelum mengambil teksnya
                telepon_rs = telepon_rs_elem.text.strip() if telepon_rs_elem else "N/A"

                data_rumah_sakit.append({
                    'nama_rs': nama_rs,
                    'alamat_rs': alamat_rs,
                    'telepon_rs': telepon_rs,
                    'Jenis' : "",
                    'Kelas' : "",
                    'Kepemilikan' : "",
                    'Direktur' : "",
                    'Telp' : "",
                    'Provinsi' : "DKI JAKARTA",
                    'Kab/Kota' : "",
                    'Pelayanan' : ""
                })
        else:
            print(f"Failed to fetch page {page_number}")

    # Menyimpan data dalam format JSON
    with open('DKIJakartas.json', 'w', encoding='utf-8') as file:
        json.dump(data_rumah_sakit, file, ensure_ascii=False, indent=4)

    print("File 'DKIJakartas' telah berhasil dibuat.")

```

menghasilkan,



{} DKIJakartas.json > {} 0 > [ ] Pelayanan


```
[
    {
        "nama_rs": "RS Gigi Dan Mulut Angkatan Udara",
        "alamat_rs": "Jl.Puntodewo 1 Dirgantara 2, Halim Perdanakusuma",
        "telepon_rs": "021-80879255/56",
        "Jenis": "Rumah Sakit Khusus Gigi dan Mulut",
        "Kelas": "B",
        "Kepemilikan": "TNI AU",
        "Direktur": "Kolonel Kes drg. Imelda Sriulina, Sp.Ort",
        "Telp": "021-80879255/56",
        "Provinsi": "DKI JAKARTA",
        "Kab/Kota": "KOTA ADM. JAKARTA TIMUR",
        "Pelayanan": ["Anestesi", "Bedah Mulut",
        "Elektromedik diagnostik (EKG/EEG/EEG Brain Mapping)",
        "Emergensi", "Konservasi / endodonsi", "Orthodonti", "Pedodonsi",
        "Pelayanan Gawat Darurat Umum 24 jam & 7 hari seminggu",
        "Pelayanan medik dasar / umum",
        "Pelayanan medik gigi mulut"]
    },
    {
        "nama_rs": "RS Gigi dan Mulut FKG Univ. Indonesia",
        "alamat_rs": "Jl. Salemba Raya No. 4 Jakarta Pusat",
        "telepon_rs": "3923145",
        "Jenis": "",
        "Kelas": "",
```

3. Membuat json menjadi rdf

jsontordf.py > value

```python
from rdflib import Graph, Namespace, Literal
from rdflib.namespace import RDF, RDFS, XSD
import json

# Membuat grafik RDF
g = Graph()

# Namespace
ns = Namespace("http://example.org/")

# Membuka dan membaca file JSON
with open('DKIJakartas.json', 'r') as json_file:
    data = json.load(json_file)

# Mapping properti dengan namespace
properties = {
    "nama_rs": ns.hasname,
    "alamat_rs": ns.hasaddress,
    "telepon_rs": ns.hastelephone,
    "Jenis": ns.hastype,
    "Kelas": ns.hasclass,
    "Kepemilikan": ns.hasownership,
    "Direktur": ns.hasowner,
    "Provinsi": ns.inprovince,
    "Kab/Kota": ns.incity,
    "Pelayanan": ns.subServiceOf
}

# Loop melalui data JSON dan membuat RDF triples
for entry in data:
    subject = ns[entry['nama_rs'].replace(' ', '_')]  # Subjek berdasarkan nama rumah sakit

    for key, value in entry.items():
        if key in properties and value:
            predicate = properties[key]
            if key == "Pelayanan":
                # Jika value adalah list, iterasi melalui list tersebut
                for service in value:
                    object_value = ns[service.replace(' ', '_')]
                    g.add((subject, predicate, object_value))
            else:
                object_value = Literal(value)
                g.add((subject, predicate, object_value))

# Menyimpan grafik RDF ke file
g.serialize(destination='DKIJakartas.rdf', format='xml')
```

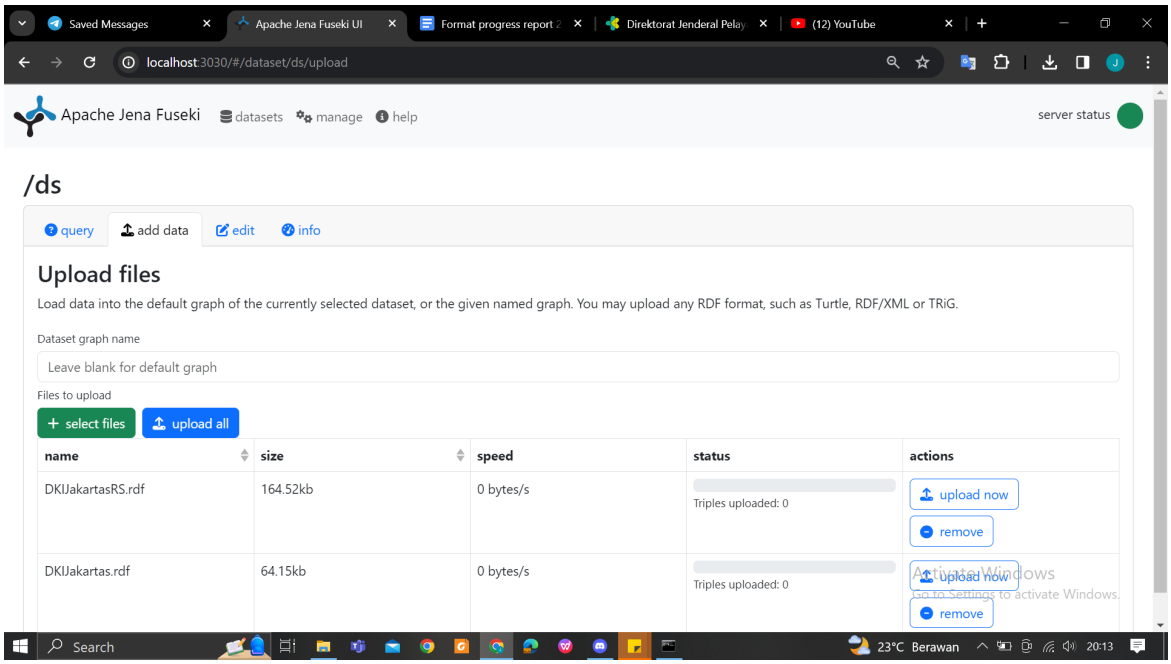
menghasilkan,

DKIJakartas.rdf

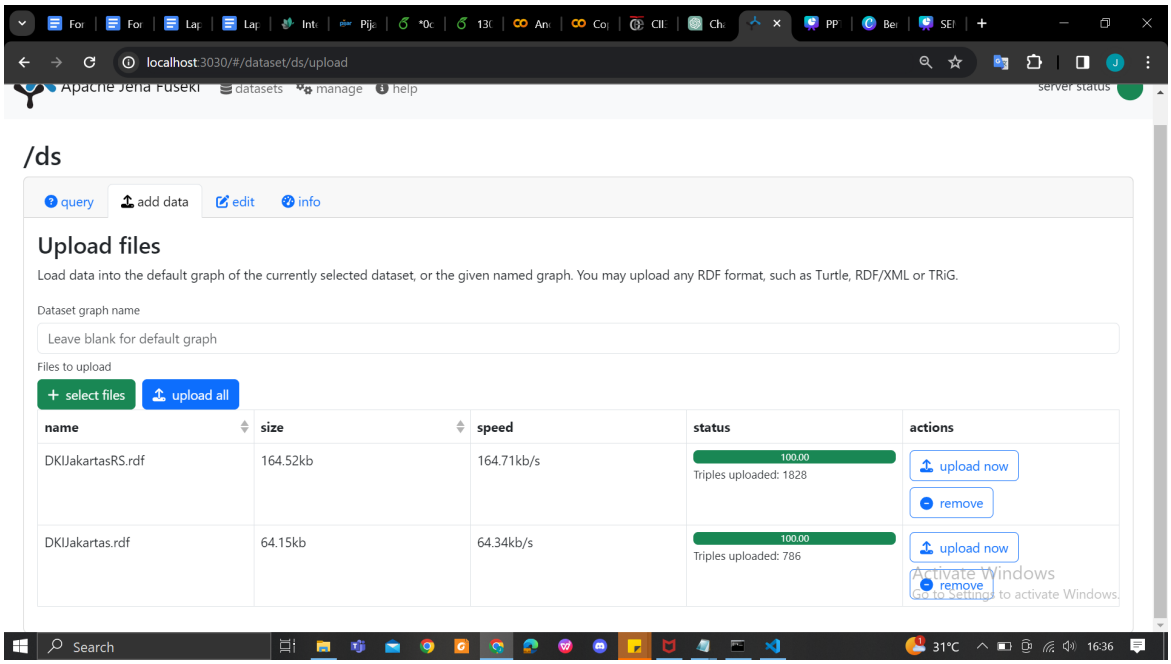
```
1   sion="1.0" encoding="utf-8"?>
2
3   ns1="http://example.org/"
4   rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
5   owl="http://www.w3.org/2002/07/owl#"
6
7   tatypeProperty rdf:about="http://example.org/hasname"/>
8   tatypeProperty rdf:about="http://example.org/hasaddress"/>
9   tatypeProperty rdf:about="http://example.org/hastelephone"/>
10  tatypeProperty rdf:about="http://example.org/inprovince"/>
11  tatypeProperty rdf:about="http://example.org/incity"/>
12  tatypeProperty rdf:about="http://example.org/hastype"/>
13  tatypeProperty rdf:about="http://example.org/hasclass"/>
14  tatypeProperty rdf:about="http://example.org/hasowner"/>
15  tatypeProperty rdf:about="http://example.org/hasownership"/>
16  tatypeProperty rdf:about="http://example.org/subServiceOf"/>
17
18  scription rdf:about="http://example.org/RS_Umum_Hermina_Jatinegara">
19  type rdf:resource="http://example.org/Hospital"/>
20  hasname>RS Umum Hermina Jatinegara</ns1:hasname>
21  hasaddress>Jl. Jatinegara Barat 126, Jakarta Timur</ns1:hasaddress>
22  hastelephone>021 8191223</ns1:hastelephone>
23  inprovince>DKI JAKARTA</ns1:inprovince>
24  hastype>SWASTA/LAINNYA</ns1:hastype>
25  hasclass>B</ns1:hasclass>
26  hasownership>TNI AU</ns1:hasownership>
27  hasowner>Dr. Nienne Aridayanthi Hainun, MARS, MH</ns1:hasowner>
28  inprovince>DKI JAKARTA</ns1:inprovince>
29  incity>KOTA ADM. JAKARTA TIMUR</ns1:incity>
30  subServiceOf rdf:resource="http://example.org/Alergi_Imunologi"/>
```

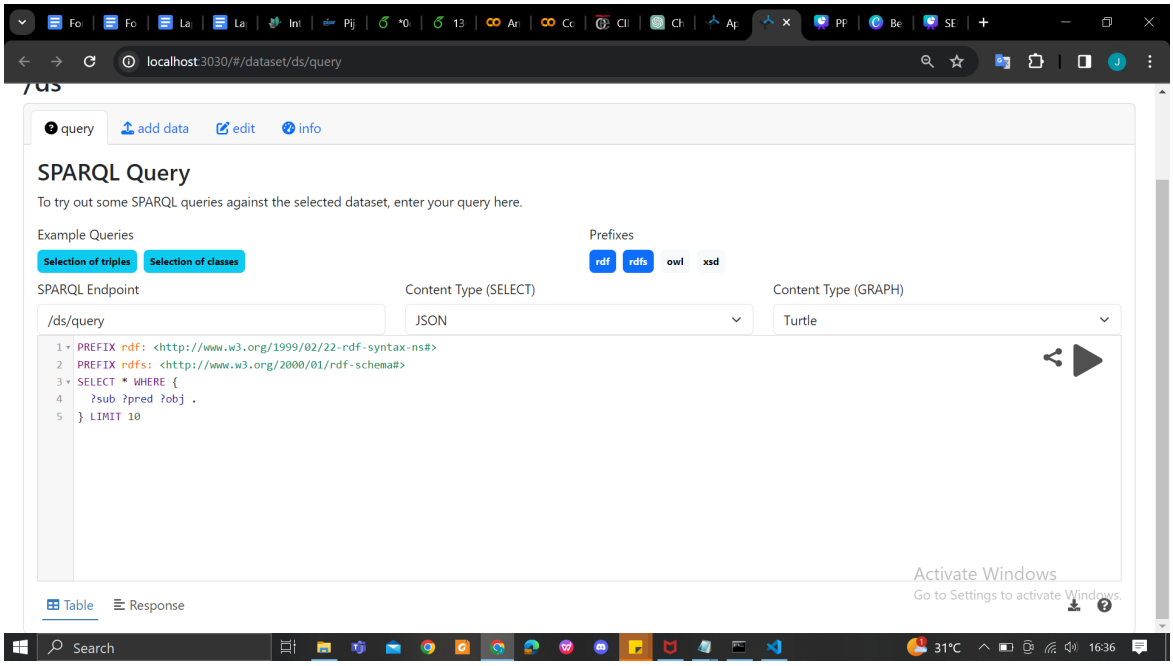
```
29   incity>KOTA ADM. JAKARTA TIMUR</ns1:incity>
30   subServiceOf rdf:resource="http://example.org/Alergi Imunologi"/>
31   subServiceOf rdf:resource="http://example.org/Anestesi"/>
32   subServiceOf rdf:resource="http://example.org/Bank darah"/>
33   subServiceOf rdf:resource="http://example.org/Bedah"/>
34   subServiceOf rdf:resource="http://example.org/Bedah Anak"/>
35   subServiceOf rdf:resource="http://example.org/Bedah digestif"/>
36   subServiceOf rdf:resource="http://example.org/Bedah Katarak"/>
37   subServiceOf rdf:resource="http://example.org/Bedah Mulut"/>
38   subServiceOf rdf:resource="http://example.org/Bedah onkologi"/>
39   subServiceOf rdf:resource="http://example.org/Bedah Saraf"/>
40   escription>
41   scription rdf:about="http://example.org/RS_Khusus_JEC_@Menteng">
42   type rdf:resource="http://example.org/Hospital"/>
43   hasname>RS Khusus JEC @Menteng</ns1:hasname>
44   hasaddress>Jl. Teuku Cik Ditiro No.46 Jakarta Pusat</ns1:hasaddress>
45   hastelephone>021-29221000</ns1:hastelephone>
46   inprovince>DKI JAKARTA</ns1:inprovince>
47   escription>
48   scription rdf:about="http://example.org/RS_Khusus_THT_Prof_Nizar">
49   type rdf:resource="http://example.org/Hospital"/>
50   hasname>RS Khusus THT Prof Nizar</ns1:hasname>
51   hasaddress>Jl. Kesehatan No. 9 Jakpus</ns1:hasaddress>
52   hastelephone>3843596-3503435</ns1:hastelephone>
53   inprovince>DKI JAKARTA</ns1:inprovince>
54   escription>
55   scription rdf:about="http://example.org/RS_Umum_Patria_IKKT">
56   type rdf:resource="http://example.org/Hospital"/>
57   hasname>RS Umum Patria IKKT</ns1:hasname>
58   hasaddress>Jl. Cendrawasih No.1, Komplek Kemhan Mabes TNIâ€¦</ns1:hasa
```

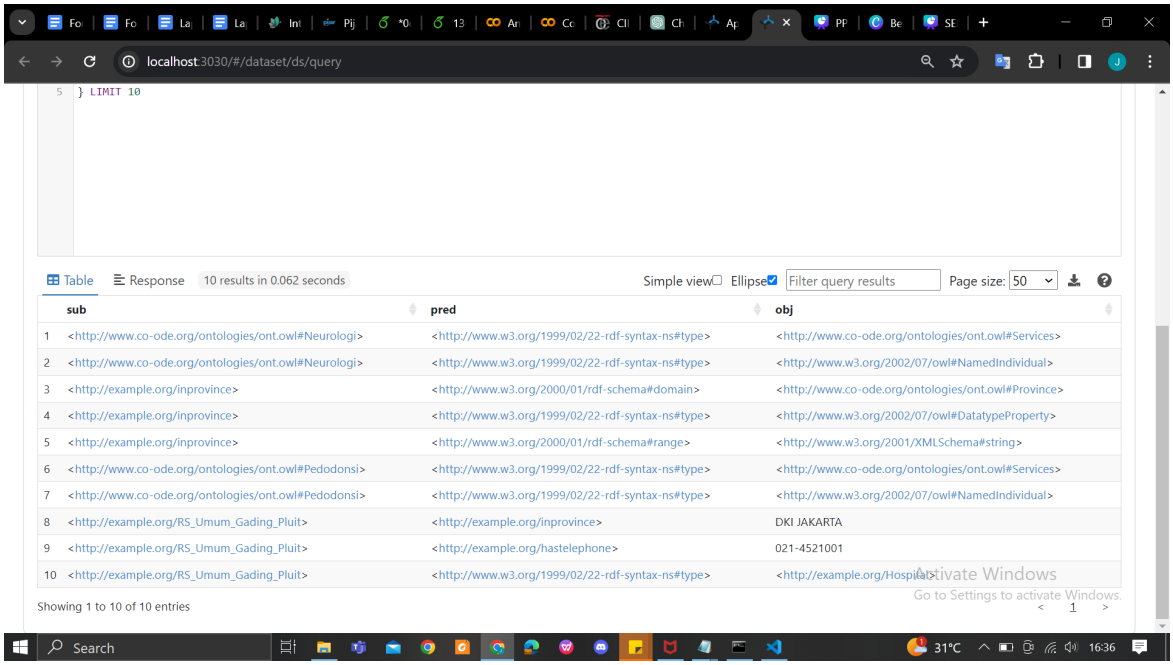
4. Add data, upload data RDF sesuai domain dan topik serta hasil ekstraksi dari web pages https://yankes.kemkes.go.id/rumahsakit



5. Upload ke triple store




localhost:3030/#/dataset/ds/query
query
add data
edit
info
SPARQL Query
To try out some SPARQL queries against the selected dataset, enter your query here.
Example Queries
Selection of triples
Selection of classes
Prefixes
rdf
rdfs
owl
xsd
SPARQL Endpoint
/ds/query
Content Type (SELECT)
JSON
Content Type (GRAPH)
Turtle
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
SELECT * WHERE {
?sub ?pred ?obj .
} LIMIT 10
Table
Response
Activate Windows
Go to Settings to activate Windows.
Search
31°C
16:36


localhost:3030/#/dataset/ds/query
} LIMIT 10
Table
Response
10 results in 0.062 seconds
Simple view
Ellipse
Filter query results
Page size: 50
sub
pred
obj
1 <http://www.co-ode.org/ontologies/ont.owl#Neurologi> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://www.co-ode.org/ontologies/ont.owl#Services>
2 <http://www.co-ode.org/ontologies/ont.owl#Neurologi> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://www.w3.org/2002/07/owl#NamedIndividual>
3 <http://example.org/inprovince> <http://www.w3.org/2000/01/rdf-schema#domain> <http://www.co-ode.org/ontologies/ont.owl#Province>
4 <http://example.org/inprovince> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://www.w3.org/2002/07/owl#DatatypeProperty>
5 <http://example.org/inprovince> <http://www.w3.org/2000/01/rdf-schema#range> <http://www.w3.org/2001/XMLSchema#string>
6 <http://www.co-ode.org/ontologies/ont.owl#Pedodonsi> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://www.co-ode.org/ontologies/ont.owl#Services>
7 <http://www.co-ode.org/ontologies/ont.owl#Pedodonsi> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://www.w3.org/2002/07/owl#NamedIndividual>
8 <http://example.org/RS_Umum_Gading_Pluit> <http://example.org/inprovince> DKI JAKARTA
9 <http://example.org/RS_Umum_Gading_Pluit> <http://example.org/hastelephone> 021-4521001
10 <http://example.org/RS_Umum_Gading_Pluit> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://example.org/Hospital>
Showing 1 to 10 of 10 entries
Activate Windows
Go to Settings to activate Windows.
Search
31°C
16:36

query | add data | edit | info

SPARQL Query

To try out some SPARQL queries against the selected dataset, enter your quer

Example Queries

Selection of triples **Selection of classes**

SPARQL Endpoint | Conte

/ds/sparql | JSO

```
1  PREFIX owl: <http://www.w3.org/2002/07/owl#>
2  PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
3
4  SELECT DISTINCT ?class ?label ?description
5  WHERE {
6    ?class a owl:Class.
7    OPTIONAL { ?class rdfs:label ?label}
8    OPTIONAL { ?class rdfs:comment ?description}
9  }
10 LIMIT 25
```

Table | Response | 11 results in 0.048 seconds

	class
1	<http://example.org/Hospital>
2	<http://www.co-ode.org/ontologies/ont.owl#Services>
3	<http://www.co-ode.org/ontologies/ont.owl#SpecialtyHospital>
4	<http://www.co-ode.org/ontologies/ont.owl#GeneralHospital>
5	<http://www.co-ode.org/ontologies/ont.owl#City>
6	<http://www.co-ode.org/ontologies/ont.owl#DentalHospital>
7	<http://www.co-ode.org/ontologies/ont.owl#Eyehospital>
8	<http://www.co-ode.org/ontologies/ont.owl#Province>
9	<http://www.co-ode.org/ontologies/ont.owl#PsychiatricHospital>
10	<http://www.co-ode.org/ontologies/ont.owl#RehabilitationHospital>
11	<http://www.co-ode.org/ontologies/ont.owl#MaternityandPediatricHospital>

Showing 1 to 11 of 11 entries