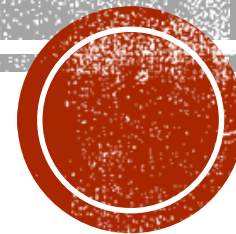


TOP BRAID COMPOSER

한영

SPARQL Examples

— with Bibframe



허 홍 수

Bibframe으로 모델로 표현된 데이터 획득

미의회 도서관 링크드 데이터 서비스에서 일부 데이터를 획득함

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ID.LOC.GOV – Linked Data Service

ID.LOC.GOV provides both interactive and machine access to commonly used ontologies, controlled vocabularies, and other lists for bibliographic description. To search everything, use the search box below. Or, select from the list below to learn more and search only in vocabulary.

Search id.loc.gov GO

BIBFRAME

- BIBFRAME Works
- BIBFRAME Instances

Subjects, Thesauri, Classification

- LC Subject Headings (LCSH)
- LC Classification (LCC)
- LC Children's Subject Headings
- LC Medium of Performance Thesaurus for Music (LCMPT)
- Thesaurus for Graphic Materials (TGM)

Cataloging

- Aspect Ratio
- Authentication Action
- Broadcast Standard
- Carriers
- Color Content
- Content Types
- Description Conventions
- Sound Capture and Storage
- Encoding Level
- Font Size
- File Type

Ontologies

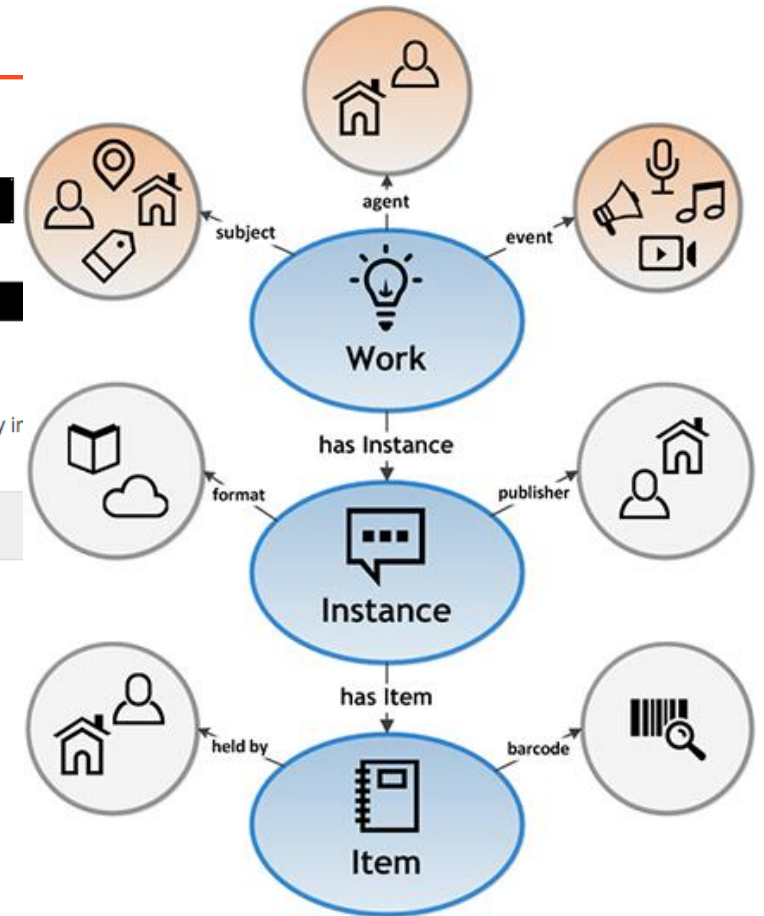
- BIBFRAME Ontology
- MADS/RDF Ontology
- PREMIS Ontology

Data Types

- Extended Date/Time Format (EDTF)

Preservation Vocabularies

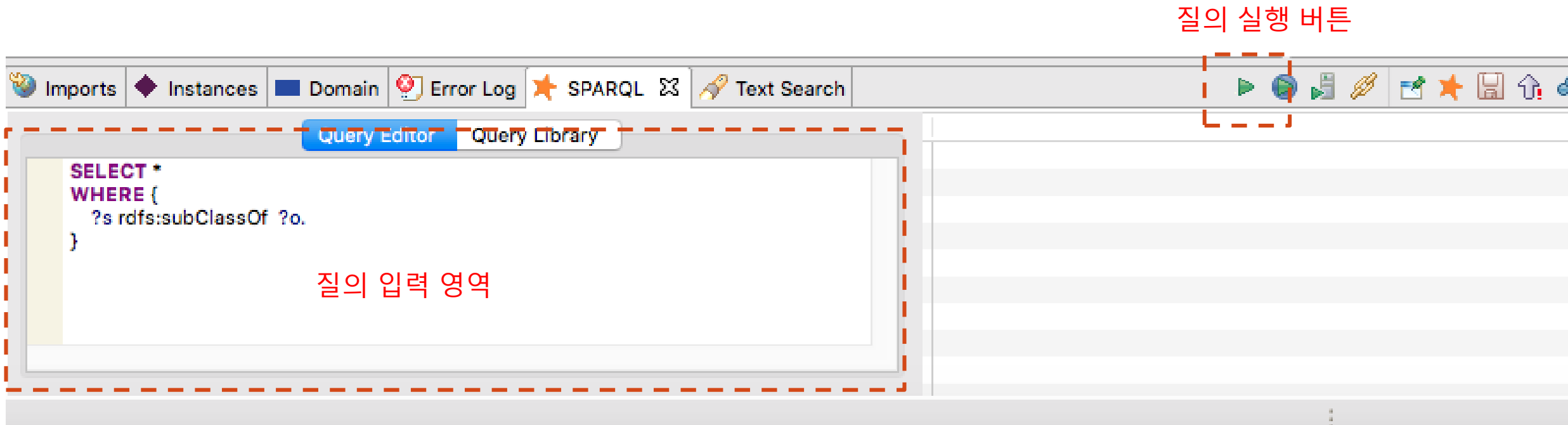
- Preservation Vocabularies (all)



<http://id.loc.gov>

SPARQL 사용

하단에 위치한 SPARQL 탭을 선택하면 아래와 같이 나타난다.
질의 실행은 아래와 같이 버튼을 눌러서 실행할 수 있으며
단축키는 Shift + Enter 로 실행할 수 있다.



01. 기본 질의

◆ Work 클래스를 타입으로 가지는 인스턴스 찾기

기본 템플릿

SELECT ?변수명

WHERE {

찾을 패턴 .

}

변수명은 앞에 ? 를 사용하며,

찾을 패턴은 <s> <p> <o> 구조의 패턴을 입력한다.

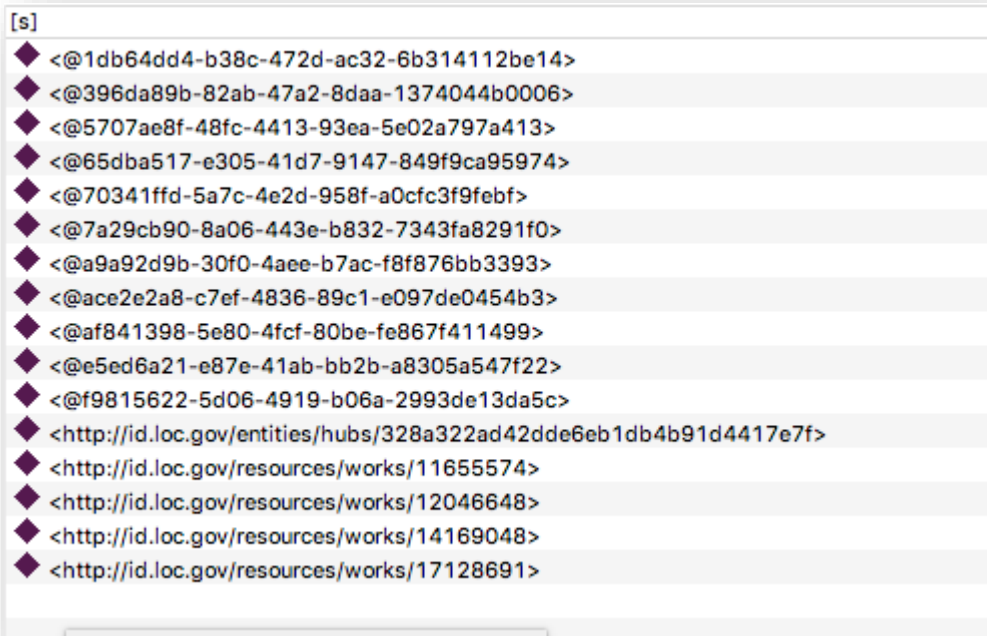
SELECT *

WHERE {

?s a bf:Work .

}

a 는 rdf:type 과 동일한 의미이다.



[s]

- ◆ <@1db64dd4-b38c-472d-ac32-6b314112be14>
- ◆ <@396da89b-82ab-47a2-8daa-1374044b0006>
- ◆ <@5707ae8f-48fc-4413-93ea-5e02a797a413>
- ◆ <@65dba517-e305-41d7-9147-849f9ca95974>
- ◆ <@70341ffd-5a7c-4e2d-958f-a0cfc3f9febfb>
- ◆ <@7a29cb90-8a06-443e-b832-7343fa8291f0>
- ◆ <@a9a92d9b-30f0-4aee-b7ac-f8f876bb3393>
- ◆ <@ace2e2a8-c7ef-4836-89c1-e097de0454b3>
- ◆ <@af841398-5e80-4fcf-80be-fe867f411499>
- ◆ <@e5ed6a21-e87e-41ab-bb2b-a8305a547f22>
- ◆ <@f9815622-5d06-4919-b06a-2993de13da5c>
- ◆ <http://id.loc.gov/entities/hubs/328a322ad42dde6eb1db4b91d4417e7f>
- ◆ <http://id.loc.gov/resources/works/11655574>
- ◆ <http://id.loc.gov/resources/works/12046648>
- ◆ <http://id.loc.gov/resources/works/14169048>
- ◆ <http://id.loc.gov/resources/works/17128691>

02. 2개의 패턴

- ◆ Work 클래스를 타입으로 가지는 인스턴스 와
그 인스턴스와 연결된 모든 트리플 찾기

```
SELECT *
WHERE {
    ?s a bf:Work .
    ?s ?p ?o .
}
```

위 예시에서는 두 개의 패턴을 입력하였으며
두 개의 패턴은 AND 조건으로 매칭된다.

[s]	p	o
<@1db64dd4-b38c-472d-ac32-6b314112be14>	rdfs:label	Sgt. Pepper's Lonely Hearts Club Band.
<@1db64dd4-b38c-472d-ac32-6b314112be14>	bf:title	<@7868fc87-c3b9-486c-b22c-adca79daef42>
<@1db64dd4-b38c-472d-ac32-6b314112be14>	bfic:aap-normalized	sgtpepper'slonelyheartclubband
<@1db64dd4-b38c-472d-ac32-6b314112be14>	bfic:aap	Sgt. Pepper's Lonely Hearts Club Band
<@1db64dd4-b38c-472d-ac32-6b314112be14>	rdf:type	bf:Work
<@396da89b-82ab-47a2-8daa-1374044b0006>	rdfs:label	When I'm sixty-four.
<@396da89b-82ab-47a2-8daa-1374044b0006>	bf:title	<@e1eb3395-4997-4bc5-acbe-e5541c8d881d>
<@396da89b-82ab-47a2-8daa-1374044b0006>	bfic:aap-normalized	wheni'msixtyfour
<@396da89b-82ab-47a2-8daa-1374044b0006>	bfic:aap	When I'm sixty-four
<@396da89b-82ab-47a2-8daa-1374044b0006>	rdf:type	bf:Work
<@5707ae8f-48fc-4413-93ea-5e02a797a413>	rdfs:label	The fool on the hill.
<@5707ae8f-48fc-4413-93ea-5e02a797a413>	bf:title	<@af36c0de-98d3-4fcc-82c5-aae5e3b2b8b4>
<@5707ae8f-48fc-4413-93ea-5e02a797a413>	bfic:aap-normalized	thefoolonthehill
<@5707ae8f-48fc-4413-93ea-5e02a797a413>	bfic:aap	The fool on the hill
<@5707ae8f-48fc-4413-93ea-5e02a797a413>	rdf:type	bf:Work
<@65dba517-e305-41d7-9147-849f9ca95974>	rdfs:label	I am the walrus.
<@65dba517-e305-41d7-9147-849f9ca95974>	bf:title	<@80cacaa3-c6a4-45dd-bf3f-fbe67ef4e9b5>
<@65dba517-e305-41d7-9147-849f9ca95974>	bfic:aap-normalized	iamthewalrus
<@65dba517-e305-41d7-9147-849f9ca95974>	bfic:aap	I am the walrus
<@65dba517-e305-41d7-9147-849f9ca95974>	rdf:type	bf:Work
<@70341ffd-5a7c-4e2d-958f-a0cfc3f9febf>	rdfs:label	She's leaving home.
<@70341ffd-5a7c-4e2d-958f-a0cfc3f9febf>	bf:title	<@ecc234d6-7a3c-4146-95da-9dd99f57c8eb>
<@70341ffd-5a7c-4e2d-958f-a0cfc3f9febf>	bfic:aap-normalized	she'sleavinghome
<@70341ffd-5a7c-4e2d-958f-a0cfc3f9febf>	bfic:aap	She's leaving home
<@70341ffd-5a7c-4e2d-958f-a0cfc3f9febf>	rdf:type	bf:Work
<@7a29cb90-8a06-443e-b832-7343fa8291f0>	rdfs:label	All you need is love.
<@7a29cb90-8a06-443e-b832-7343fa8291f0>	bf:title	<@4e88f7f2-6279-476f-83d0-7607dc7ad24b>
<@7a29cb90-8a06-443e-b832-7343fa8291f0>	bfic:aap-normalized	allyouneedislove
<@7a29cb90-8a06-443e-b832-7343fa8291f0>	bfic:aap	All you need is love

03. 3개의 패턴

- ◆ Work 클래스를 타입으로 가지는 인스턴스 와
그 인스턴스가 bf:hasInstance 프로퍼티로 연결되어있고
연결된 것이 bf:hasItem 프로퍼티로 연결된 트리플 찾기

```
SELECT *  
WHERE {
```

```
    ?s a bf:Work .  
    ?s bf:hasInstance ?instance .  
    ?instance bf:hasItem ?item .
```

```
}
```

인스턴스라는 용어는 온톨로지에서 특정 Class에 속하는 개체를 말하며
Bibframe에서 bf:Instance 라는 클래스가 존재하는데 이것과는 다른 의미이다.

[s]	instance	item
◆ <http://id.loc.gov/resources/works/11655574>	◆ <http://id.loc.gov/resources/instances/11655574>	◆ <http://id.loc.gov/resources/items/11655574-...
◆ <http://id.loc.gov/resources/works/11655574>	◆ <http://id.loc.gov/resources/instances/11655574>	◆ <http://id.loc.gov/resources/items/11655574-...
◆ <http://id.loc.gov/resources/works/11655574>	◆ <http://id.loc.gov/resources/instances/11655574>	◆ <http://id.loc.gov/resources/items/11655574-...
◆ <http://id.loc.gov/resources/works/12046648>	◆ <http://id.loc.gov/resources/instances/12046648>	◆ <http://id.loc.gov/resources/items/12046648-...
◆ <http://id.loc.gov/resources/works/14169048>	◆ <http://id.loc.gov/resources/instances/141690...	◆ <http://id.loc.gov/resources/items/14169048-...
◆ <http://id.loc.gov/resources/works/14169048>	◆ <http://id.loc.gov/resources/instances/14169048>	◆ <http://id.loc.gov/resources/items/14169048-...
◆ <http://id.loc.gov/resources/works/17128691>	◆ <http://id.loc.gov/resources/instances/171286...	◆ <http://id.loc.gov/resources/items/17128691-...

04. COUNT

◆ 질의로 매칭된 결과의 개수 찾기

```
SELECT count(?instance)
WHERE {
    ?s a bf:Work .
    ?s bf:hasInstance ?instance .
}
```

[.1]
I 6

- Alias 적용

```
SELECT (count(?item) as ?cnt)
WHERE {
    ?s a bf:Work .
    ?s bf:hasInstance ?instance .
    ?instance bf:hasItem ?item .
}
```

[cnt]
I 7

05. OPTIONAL

```
SELECT *  
WHERE {
```

```
  ?s a bf:Work .  
  ?s bf:hasInstance ?instance .  
  ?instance bf:credits ?o .  
}
```

WHERE 절에 들어가는 패턴은 기본적으로 AND 조건으로 매칭

[s]	instance	o
◆ <http://id.loc.gov/resources/works/11655574>	◆ <http://id.loc.gov/resources/instances/11655574>	Voices: St. Bartholomew's Junior Choir, Mary Vro...
◆ <http://id.loc.gov/resources/works/11655574>	◆ <http://id.loc.gov/resources/instances/11655574>	Editor, Gordon McEvoy ; musical supervision, Bo...
◆ <http://id.loc.gov/resources/works/12046648>	◆ <http://id.loc.gov/resources/instances/12046648>	Popular music performed by the Hollyridge Strin...

```
SELECT *  
WHERE {
```

```
  ?s a bf:Work .  
  ?s bf:hasInstance ?instance .  
  optional { ?instance bf:credits ?o . }  
}
```

OPTIONAL 을 사용하면 OR 조건으로 매칭할 수 있다.

[s]	instance	o
◆ <http://id.loc.gov/resources/works/11655574>	◆ <http://id.loc.gov/resources/instances/11655574>	Voices: St. Bartholomew's Junior Choir, Mary V...
◆ <http://id.loc.gov/resources/works/11655574>	◆ <http://id.loc.gov/resources/instances/11655574>	Editor, Gordon McEvoy ; musical supervision, B...
◆ <http://id.loc.gov/resources/works/12046648>	◆ <http://id.loc.gov/resources/instances/12046648>	Popular music performed by the Hollyridge Stri...
◆ <http://id.loc.gov/resources/works/14169048>	◆ <http://id.loc.gov/resources/instances/141690...	
◆ <http://id.loc.gov/resources/works/14169048>	◆ <http://id.loc.gov/resources/instances/14169048>	
◆ <http://id.loc.gov/resources/works/17128691>	◆ <http://id.loc.gov/resources/instances/171286...	
◆ <http://id.loc.gov/resources/works/17128691>	◆ <http://id.loc.gov/resources/instances/17128691>	

06. UNION

◆ Work 클래스를 도메인으로 가지는 모든 프로퍼티 찾기

```
SELECT *  
WHERE {  
  {  
    ?s a owl:ObjectProperty .  
    ?s rdfs:domain bf:Work .  
    ?s rdfs:label ?label .  
  }  
  UNION  
  {  
    ?s a owl:DatatypeProperty .  
    ?s rdfs:domain bf:Work .  
    ?s rdfs:label ?label .  
  }  
}
```

[s]	label
bf:content	Content type
bf:ensemble	Ensemble
bf:eventContentOf	Has event content
bf:expressionOf	Expression of
bf:geographicCoverage	Geographic coverage
bf:hasExpression	Expressed as
bf:hasInstance	Instance of Work
bf:historyOfWork	History of the work
bf:instrument	Instrument
bf:legalDate	Date of legal work
bf:musicKey	Music key
bf:musicMedium	Music medium of performance
bf:musicOpusNumber	Music opus number
bf:musicSerialNumber	Music serial number
bf:musicThematicNumber	Music thematic number
bf:originDate	Associated title date
bf:originPlace	Associated title place
bf:temporalCoverage	Temporal coverage
bf:version	Version
bf:voice	Voice

07. FILTER

◆ Work 클래스를 도메인으로 가지는 모든 프로퍼티 찾기를 FILTER 를 사용해 간소화시키기

```
SELECT ?s ?label
WHERE {
    ?s a ?type .
    ?s rdfs:domain bf:Work .
    ?s rdfs:label ?label .
    filter(?type=owl:ObjectProperty || ?type=owl:DatatypeProperty)
}
```

[s]	label
bf:content	Content type
bf:ensemble	Ensemble
bf:eventContentOf	Has event content
bf:expressionOf	Expression of
bf:geographicCoverage	Geographic coverage
bf:hasExpression	Expressed as
bf:hasInstance	Instance of Work
bf:historyOfWork	History of the work
bf:instrument	Instrument
bf:legalDate	Date of legal work
bf:musicKey	Music key
bf:musicMedium	Music medium of performance
bf:musicOpusNumber	Music opus number
bf:musicSerialNumber	Music serial number
bf:musicThematicNumber	Music thematic number
bf:originDate	Associated title date
bf:originPlace	Associated title place
bf:temporalCoverage	Temporal coverage
bf:version	Version
bf:voice	Voice

08. BIND

◆ 질의를 통해 찾은 값에 특정 값을 바인딩 시키기

```
SELECT ?s ?label ?tag
WHERE {
    ?s a ?type .
    ?s rdfs:domain bf:Work .
    ?s rdfs:label ?label .
    filter(?type=owl:ObjectProperty || ?type=owl:DatatypeProperty)
    bind(if(?type=owl:ObjectProperty, '오브젝트', '데이터타입') as ?tag )
}
```

[s]	label	tag
bf:content	Content type	오브젝트
bf:ensemble	Ensemble	오브젝트
bf:eventContentOf	Has event content	오브젝트
bf:expressionOf	Expression of	오브젝트
bf:geographicCoverage	Geographic coverage	오브젝트
bf:hasExpression	Expressed as	오브젝트
bf:hasInstance	Instance of Work	오브젝트
bf:historyOfWork	History of the work	데이터타입
bf:instrument	Instrument	오브젝트
bf:legalDate	Date of legal work	데이터타입
bf:musicKey	Music key	데이터타입
bf:musicMedium	Music medium of performance	오브젝트
bf:musicOpusNumber	Music opus number	데이터타입
bf:musicSerialNumber	Music serial number	데이터타입
bf:musicThematicNumber	Music thematic number	데이터타입
bf:originDate	Associated title date	데이터타입
bf:originPlace	Associated title place	오브젝트
bf:temporalCoverage	Temporal coverage	데이터타입
bf:version	Version	데이터타입
bf:voice	Voice	오브젝트

09. ORDER BY

◆ 질의를 통해 찾은 값을 정렬하기

```
SELECT ?s ?label ?tag
WHERE {
    ?s a ?type .
    ?s rdfs:domain bf:Work .
    ?s rdfs:label ?label .
    filter(?type=owl:ObjectProperty || ?type=owl:DatatypeProperty)
    bind(if(?type=owl:ObjectProperty, '오브젝트', '데이터타입') as ?tag )
} order by ?tag
```

s	label	tag
bf:originDate	Associated title date	데이터타입
bf:legalDate	Date of legal work	데이터타입
bf:historyOfWork	History of the work	데이터타입
bf:musicKey	Music key	데이터타입
bf:musicOpusNumber	Music opus number	데이터타입
bf:musicSerialNumber	Music serial number	데이터타입
bf:musicThematicNumber	Music thematic number	데이터타입
bf:temporalCoverage	Temporal coverage	데이터타입
bf:version	Version	데이터타입
bf:originPlace	Associated title place	오브젝트
bf:content	Content type	오브젝트
bf:ensemble	Ensemble	오브젝트
bf:hasExpression	Expressed as	오브젝트
bf:expressionOf	Expression of	오브젝트
bf:geographicCoverage	Geographic coverage	오브젝트
bf:eventContentOf	Has event content	오브젝트
bf:hasInstance	Instance of Work	오브젝트
bf:instrument	Instrument	오브젝트
bf:musicMedium	Music medium of performance	오브젝트
bf:voice	Voice	오브젝트

10. ORDER BY DESC

◆ 질의를 통해 찾은 값을 역순으로 정렬하기

```
SELECT ?s ?label ?tag
WHERE {
    ?s a ?type .
    ?s rdfs:domain bf:Work .
    ?s rdfs:label ?label .
    filter(?type=owl:ObjectProperty || ?type=owl:DatatypeProperty)
    bind(if(?type=owl:ObjectProperty, '오브젝트', '데이터타입') as ?tag )
} order by desc(?label)
```

s	label	tag
bf:voice	Voice	오브젝트
bf:version	Version	데이터타입
bf:temporalCoverage	Temporal coverage	데이터타입
bf:musicThematicNumber	Music thematic number	데이터타입
bf:musicSerialNumber	Music serial number	데이터타입
bf:musicOpusNumber	Music opus number	데이터타입
bf:musicMedium	Music medium of performance	오브젝트
bf:musicKey	Music key	데이터타입
bf:instrument	Instrument	오브젝트
bf:hasInstance	Instance of Work	오브젝트
bf:historyOfWork	History of the work	데이터타입
bf:eventContentOf	Has event content	오브젝트
bf:geographicCoverage	Geographic coverage	오브젝트
bf:expressionOf	Expression of	오브젝트
bf:hasExpression	Expressed as	오브젝트
bf:ensemble	Ensemble	오브젝트
bf:legalDate	Date of legal work	데이터타입
bf:content	Content type	오브젝트
bf:originPlace	Associated title place	오브젝트
bf:originDate	Associated title date	데이터타입

11. 연습 (1/4)

```
SELECT ?s ?mTitle
WHERE {
    ?s a bf:Work .
    ?s bf:title ?title.
    ?title bf:mainTitle ?mTitle.
    filter(regex(?mTitle, 'love'))
}
```

[s]	mTitle
◆ <@7a29cb90-8a06-443e-b832-7343fa8291f0>	S All you need is love
◆ <http://id.loc.gov/resources/works/14169048>	S Love, love, love and other essays

11. 연습 (2/4)

```
SELECT *  
WHERE {
```

```
  ?s a bf:Instance .  
  ?s bf:identifiedBy ?idby.  
  ?idby a bf:Isbn .  
  ?idby rdf:value ?isbn .
```

```
}
```

[s]	idby	idbn
◆ <http://id.loc.gov/resources/instance...	◆ <@5bc13a52-a411-4275-9809-77c...	📘 9781561012428
◆ <http://id.loc.gov/resources/instance...	◆ <@92b47515-1539-448f-b4b3-b3c...	📘 1561012424

11. 연습 (3/4)

```
SELECT *  
WHERE {
```

```
  <http://id.loc.gov/resources/instances/14169048> bf:hasItem ?item.  
  ?item bf:shelfMark ?mark.  
  ?mark bf:source ?src.  
  ?src rdfs:label ?source.  
  ?mark rdfs:label ?label.
```

```
}
```

[item]	mark	src	source	label
◆ <http://id.loc.gov/...	◆ <@fce27de3-55a...	◆ <http://id.loc.gov/...	S DLC	S BD436.T255 2006

11. 연습 (4/4)

◆ Work 클래스의 인스턴스 중 mainTitle과 agent의 이름, 역할명을 찾기

```
SELECT ?s ?mTitle ?aLabel ?rLabel
WHERE {
    ?s a bf:Work.
    ?s bf:title ?title.
    ?title bf:mainTitle ?mTitle.
    ?s bf:contribution ?con.
    ?con bf:agent ?agnt.
    ?agnt rdfs:label ?aLabel.
    ?con bf:role ?role.
    ?role rdfs:label ?rLabel.
}
```

[s]	mTitle	aLabel	rLabel
◆ <http://id.loc.gov/resources/work...	Ⓢ The Christmas story	Ⓢ Television Highlights Production.	Ⓢ Contributor
◆ <http://id.loc.gov/resources/work...	Ⓢ The Christmas story	Ⓢ Bornet, Fred,	Ⓢ direction
◆ <http://id.loc.gov/resources/work...	Ⓢ The Christmas story	Ⓢ Bornet, Fred,	Ⓢ camera.
◆ <http://id.loc.gov/resources/work...	Ⓢ The Christmas story	Ⓢ Zouary (Maurice) Collection (Libra...	Ⓢ Contributor
◆ <http://id.loc.gov/resources/work...	Ⓢ The Christmas story	Ⓢ Leigh, Courtney,	Ⓢ writing.
◆ <http://id.loc.gov/resources/work...	Ⓢ The Beatles song book, vol. 5	Ⓢ Garson, Mort.	Ⓢ Performer
◆ <http://id.loc.gov/resources/work...	Ⓢ The Beatles song book, vol. 5	Ⓢ Beatles.	Ⓢ Contributor
◆ <http://id.loc.gov/resources/work...	Ⓢ The Beatles song book, vol. 5	Ⓢ Lennon, John, 1940-1980.	Ⓢ Contributor
◆ <http://id.loc.gov/resources/work...	Ⓢ The Beatles song book, vol. 5	Ⓢ McCartney, Paul.	Ⓢ Contributor
◆ <http://id.loc.gov/resources/work...	Ⓢ The Beatles song book, vol. 5	Ⓢ Hollyridge Strings.	Ⓢ Performer
◆ <http://id.loc.gov/resources/work...	Ⓢ Love, love, love and other essays	Ⓢ Taliaferro, Charles.	Ⓢ Contributor
◆ <http://id.loc.gov/resources/work...	Ⓢ Harmonic Elliott Wave	Ⓢ Copsey, Ian.	Ⓢ Contributor

12. GROUP BY and GROUP_CONCAT

◆ 질의 결과를 특정 결과로 그룹핑하고 나머지 결과값은 하나로 묶기

```
SELECT ?s (group_concat(distinct ?mTitle) as ?title)
(group_concat(distinct ?l; separator=" | ") as ?agentRole)
WHERE {
    ?s a bf:Work .
    ?s bf:title ?tit.
    ?tit bf:mainTitle ?mTitle.
    ?s bf:contribution ?con.
    ?con bf:agent ?agnt.
    ?agnt rdfs:label ?aLabel.
    ?con bf:role ?rol.
    ?rol rdfs:label ?rLabel.
    bind((?aLabel + "(" + ?rLabel + ")") as ?l)
} group by ?s
```

[s]	title	agentRole
◆ <http://id.loc.gov/resources/works/11655574>	📖 The Christmas story	📺 Television Highlights Production.(Contributor) ...
◆ <http://id.loc.gov/resources/works/12046648>	📖 The Beatles song book, vol. 5	🎤 Garson, Mort.(Performer) Beatles.(Contributor...
◆ <http://id.loc.gov/resources/works/14169048>	📖 Love, love, love and other essays	📖 Taliaferro, Charles.(Contributor)
◆ <http://id.loc.gov/resources/works/17128691>	📖 Harmonic Elliott Wave	🎤 Copsey, Ian.(Contributor)

13. 연습

```

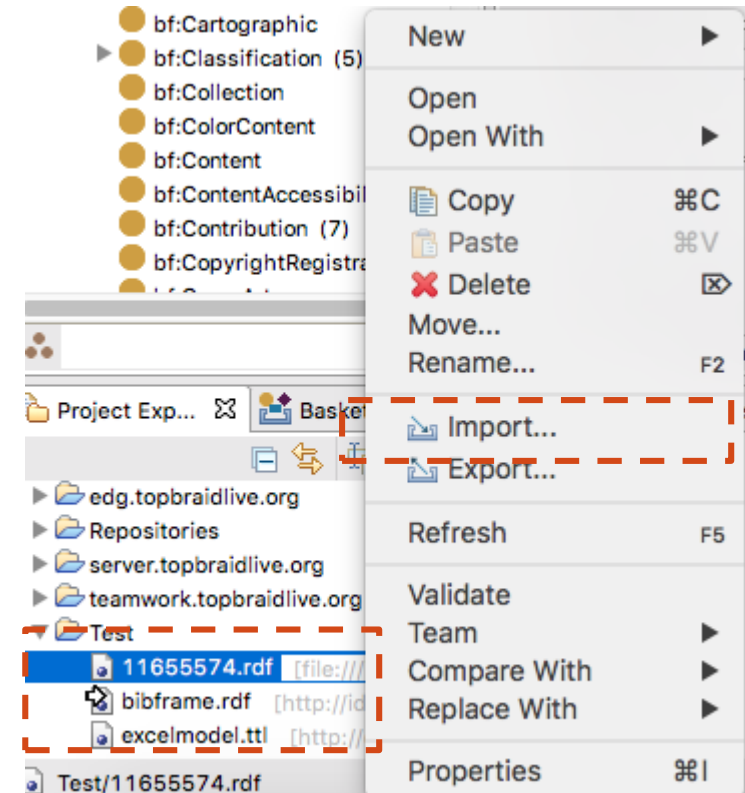
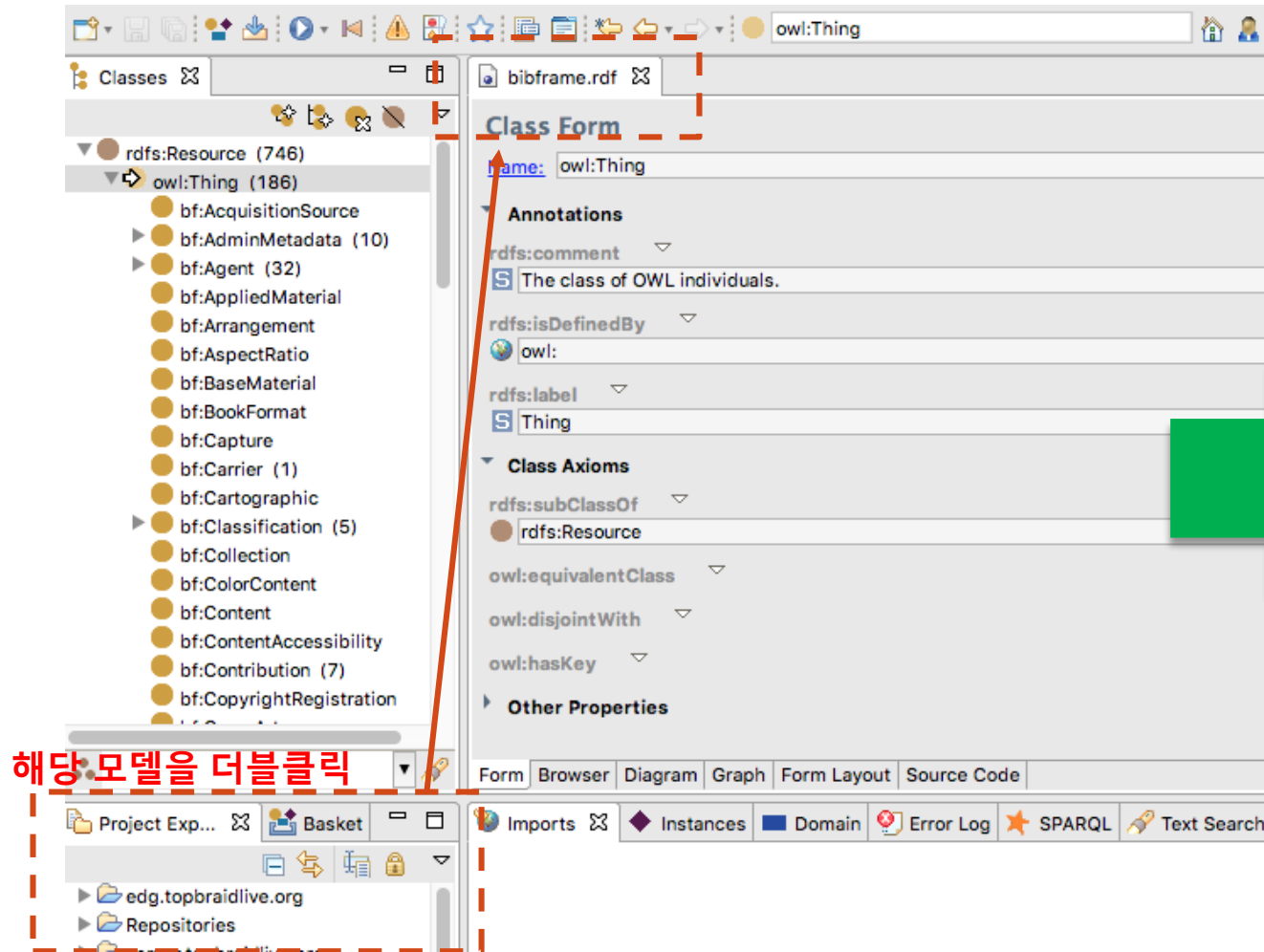
SELECT ?ins (sample(?label) as ?a) (sample(?extent) as ?e)
(sample(?mainTitle) as ?m) (sample(?subTitle) as ?s)
(group_concat(?id; separator=" | ") as ?i)
(sample(?provActAgent) as ?ag) (sample(?provActPlace) as ?pla)
WHERE {
    <http://id.loc.gov/resources/works/14169048> bf:hasInstance ?ins.
    ?ins rdfs:label ?label .
    ?ins bf:extent ?ext .
    ?ext rdfs:label ?extent.
    ?ins bf:title ?tit .
    ?tit bf:mainTitle ?mainTitle .
    ?tit bf:subtitle ?subTitle .
    ?ins bf:identifiedBy ?iden .
    ?iden rdf:value ?id .
    ?ins bf:provisionActivity ?pact.
    ?pact bf:agent ?pactagent.
    ?pactagent rdfs:label ?provActAgent.
    ?pact bf:place ?pactplace.
    ?pactplace rdfs:label ?provActPlace.
} group by ?ins

```

[ins]	a	e	m	s	i	ag	pla
◆ <http://id...	Love, love, love and...	xvii, 181 p.	Love, love, love and ot...	light reflections o...	ocm6276...	Cowley Publica...	Cambridge

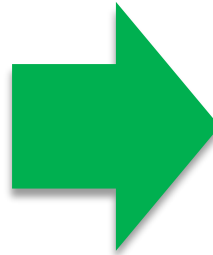
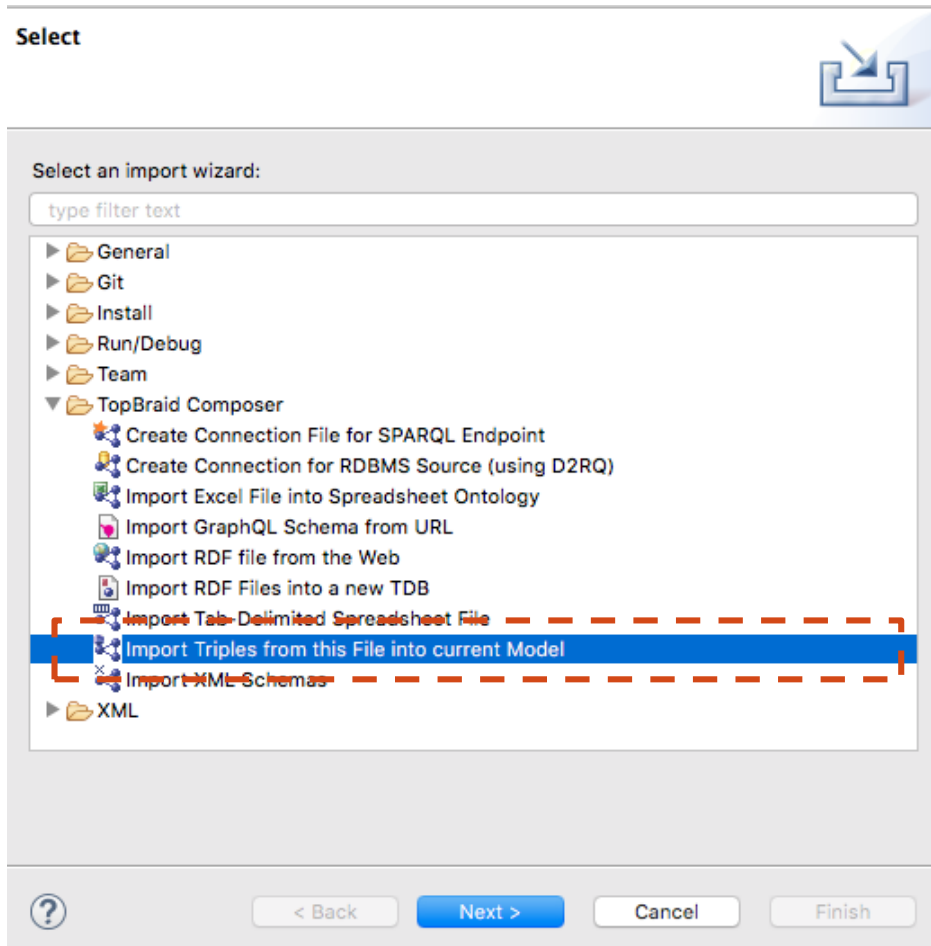
참고01. 기존 온톨로지에 트리플 파일 임포트하기

- bibframe 모델에 인스턴스 데이터를 넣기 위해 모델파일을 열어놓고 대상 파일에서 우클릭



참고02. импорт 유형 선택

- TopBraid Composer > Import Triples from the File into current Model 선택 후 Next



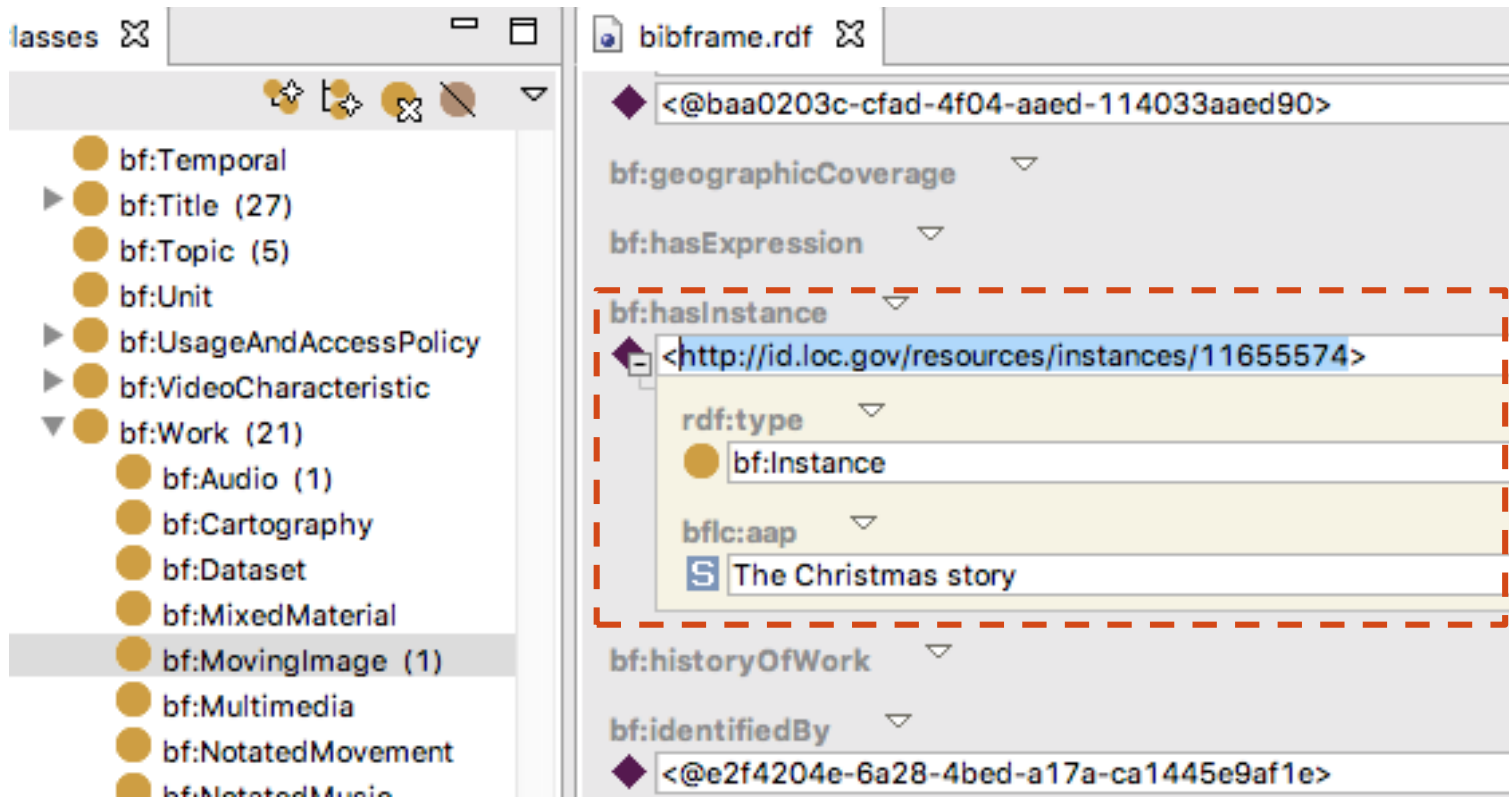
참고03. IMPORT된 트리플 확인

- 임포트가 완료되면 해당 모델파일을 저장해야 한다.

파일명 앞에 * 표시가 있으면 현재 저장을 해야 한다는 표시이다.

참고04. 웹에서 직접 불러와 임포트하기 (1/3)

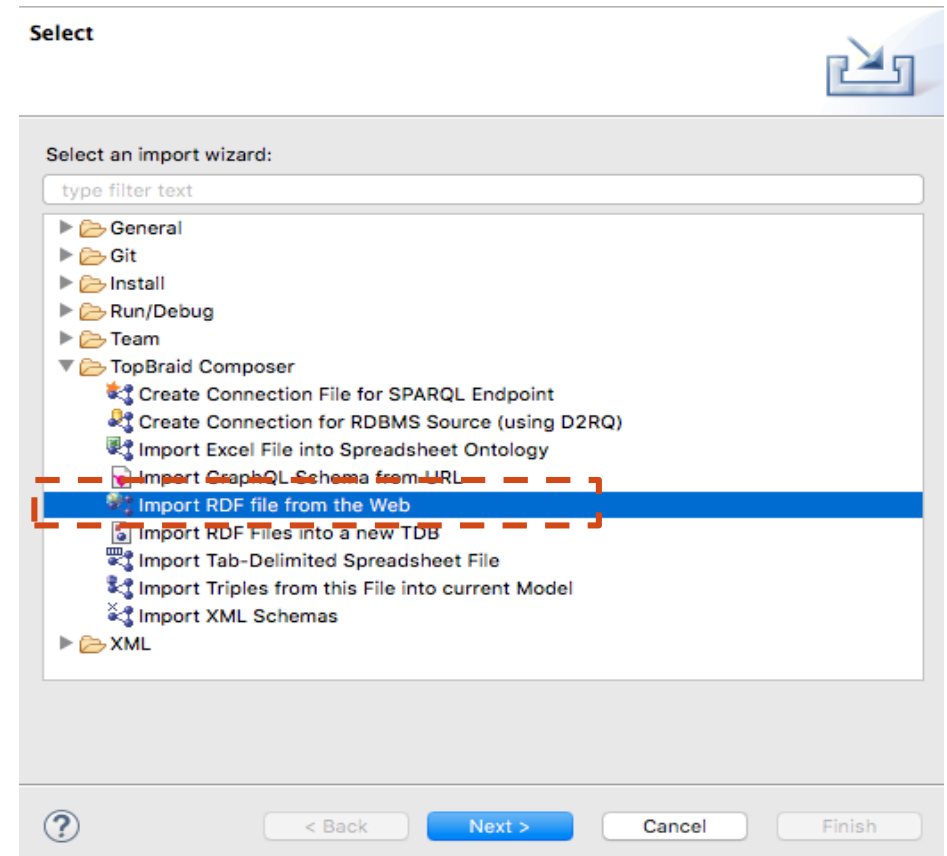
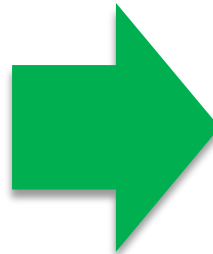
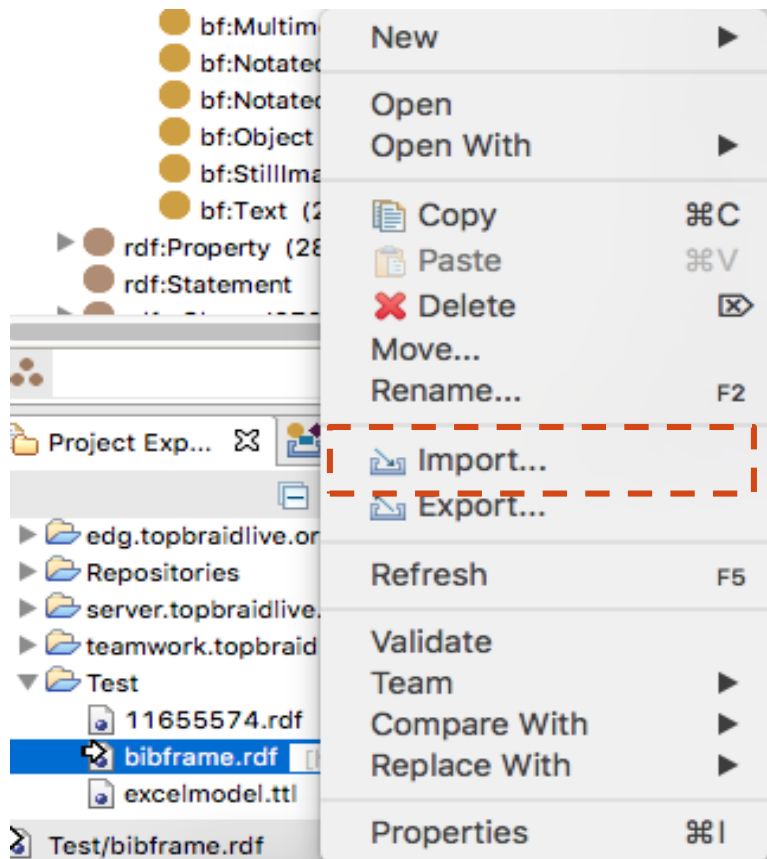
- 웹에서 LOD로 서비스를 제공하는 경우 TBC 에 직접 불러 올 수 있다.



<http://id.loc.gov/resources/instances/11655574>
에서 제공하는 데이터를 불러올 예정이기에
위 URI 주소를 복사한다.

참고04. 웹에서 직접 불러와 임포트하기 (2/3)

- 프로젝트 익스플로러 탭에서 온톨로지 스키마(모델)파일을 선택하고 우클릭 후 Import 선택
- TopBraid Composer > Import RDF file from the Web 선택 후 Next



참고04. 웹에서 직접 불러와 임포트하기 (3/3)

- Source URL에 복사한 주소를 붙여넣기
- Target file name 에는 원하는 이름을 입력하고 반드시 뒤에 .ttl 이나 .rdf 를 붙여야 한다.
- Finish 를 선택하면 프로젝트 익스플로러탭에 해당 파일이 생성되는데 bibframe 모델에 넣기 위해 앞의 01~03 과정을 수행하면 된다.

Import RDF file from the Web

Download an existing RDF file from the web so that it can be opened with TopBraid.

Source URL:

Target file name:

주소 붙여넣기

붙여넣기를 하게 되면 11655574 가 자동으로 생성되며 뒷 부분에 .ttl을 입력해야 한다.

? < Back Next > Cancel Finish

참고05. импорт 결과 확인

- 추가된 내용을 확인할 수 있다.

임포트 전

bibframe.rdf

<@baa0203c-cfad-4f04-aaed-114033aaed90>

bf:geographicCoverage

bf:hasExpression

bf:hasInstance

<http://id.loc.gov/resources/instances/11655574>

rdf:type

bf:Instance

bflc:aap

The Christmas story

bf:historyOfWork

bf:identifiedBy

<@e2f4204e-6a28-4bed-a17a-ca1445e9af1e>



Classes

- bf:Source (11)
- bf:Status (4)
- bf:Sublocation
- bf:Summary
- bf:SupplementaryContent (5)
- bf:SystemRequirement
- bf:TableOfContents (2)
- bf:Temporal
- bf>Title (27)
- bf:Topic (5)
- bf:Unit
- bf:UsageAndAccessPolicy
- bf:VideoCharacteristic
- bf:Work (21)
- bf:Audio (1)
- bf:Cartography
- bf:Dataset
- bf:MixedMaterial
- bf:MovingImage (1)
- bf:Multimedia
- bf:NotatedMovement

임포트 완료 후

bibframe.rdf

bf:geographicCoverage

bf:hasExpression

bf:hasInstance

<http://id.loc.gov/resources/instances/11655574>

rdfs:label

The Christmas story

rdf:type

bf:Instance

bflc:aap

The Christmas story

bflc:aap-normalized

thechristmasstory

bf:carrier

<http://id.loc.gov/vocabulary/carriers/mr>

bf:credits

Editor, Gordon McEvoy ; musical supervision, Bob Harris ; executive producer, Joseph Harris.

Voices: St. Bartholomew's Junior Choir, Mary Vroom, director.

bf:dimensions

16 mm. arch pos.