

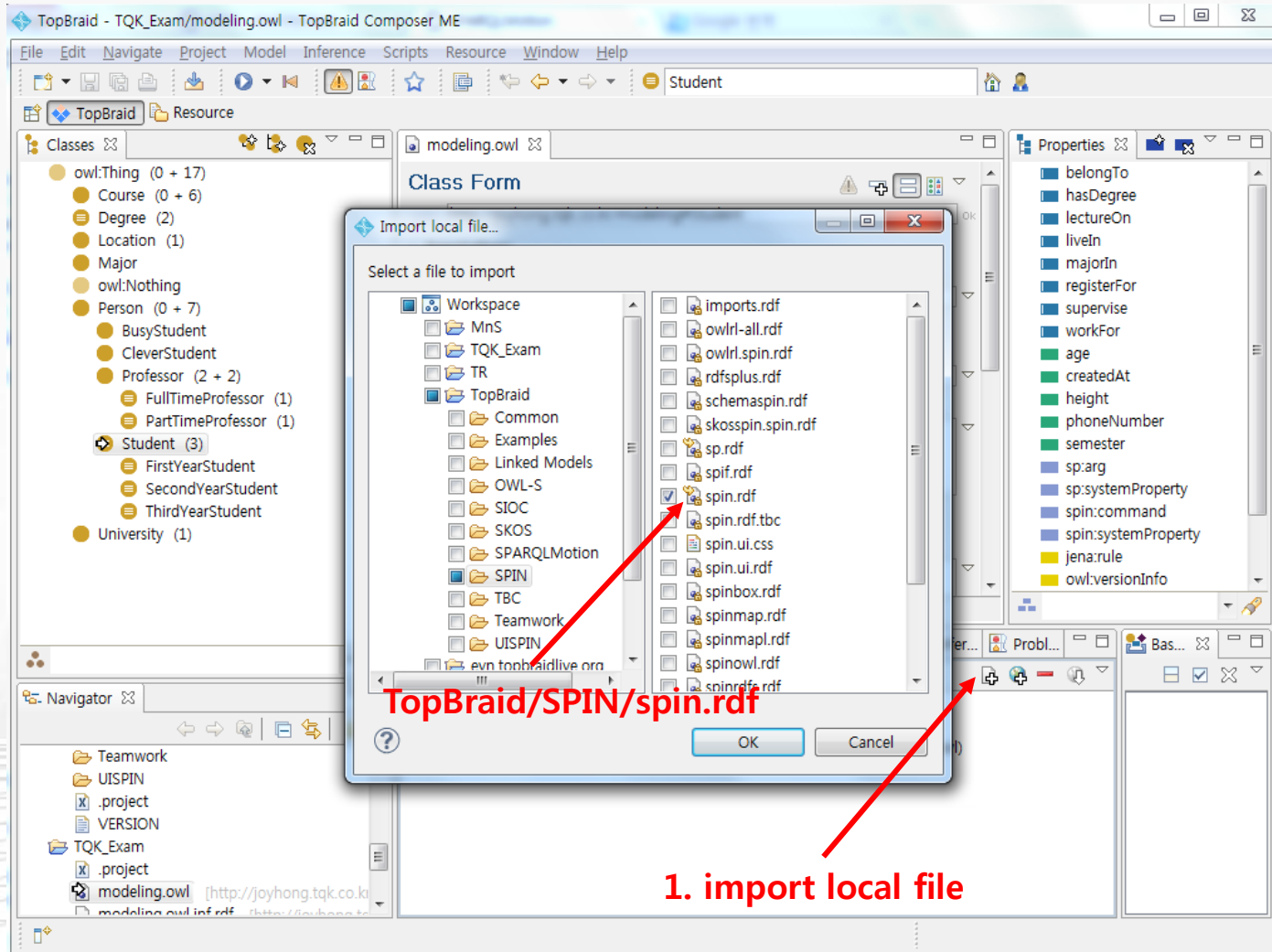
SPIN 사용법

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SPIN 추론 - SPIN import



1. import local file

SPIN 추론 - spin:rule 작성

import하면 spin 관련 어휘가 생성됨

1. 인스턴스가 해당되는 클래스 선택

TopBraid - TQK_Exam/modeling.owl - TopBraid Composer ME

Classes

- owl:Thing (0 + 17)
 - Course (0 + 6)
 - Degree (2)
 - Location (1)
 - Major
 - owl:Nothing
 - Person (0 + 7)
 - BusyStudent
 - CleverStudent
 - Professor (2 + 2)
 - FullTimeProfessor (1)
 - PartTimeProfessor (1)
 - Student (3)
 - FirstYearStudent
 - SecondYearStudent
 - ThirdYearStudent
 - University (1)

modeling.owl

```
spin:constructor
spin:rule
CONSTRUCT {
  ?s a :BusyStudent .
}
WHERE {
  SELECT ?s ((COUNT(?s) AS ?scout)
  WHERE {
    ?s :registerFor ?cls .
    ?cls a :Credit3Course .
  }
  GROUP BY ?s
  FILTER (?scout > 2) .
}
owl:equivalentClass
semester exactly 1
owl:disjointWith
```

Properties

- belongTo
- hasDegree
- lectureOn
- liveIn
- majorIn
- registerFor
- supervise
- workFor
- age
- createdAt
- height
- phoneNumber
- semester
- sp:arg
- sp:systemProperty
- spin:command
- spin:systemProperty
- jena:rule
- owl:versionInfo

2. spin:rule에 해당 쿼리 작성

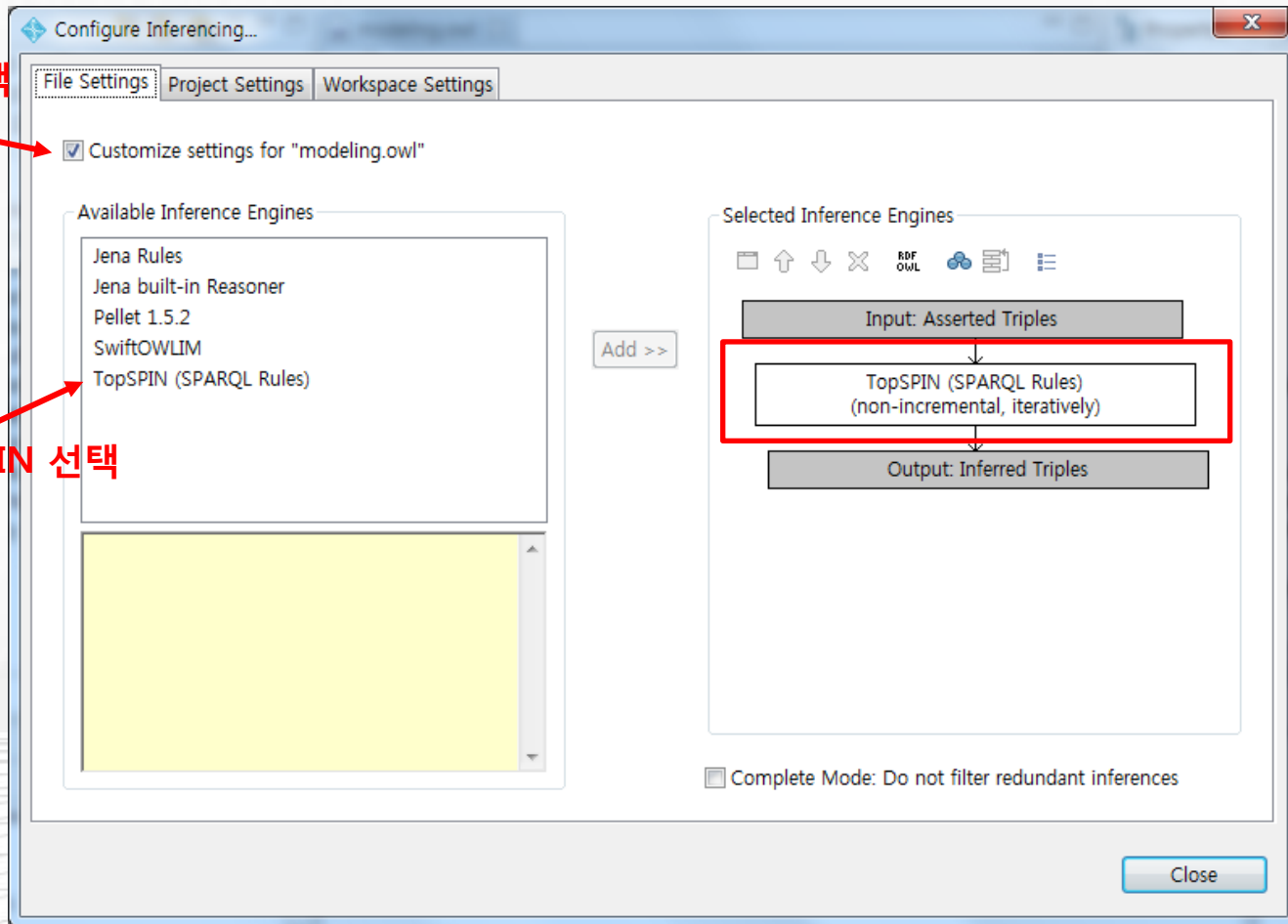
http://spinrdf.org/spin (from /TopBraid/SPIN/spin.rdf)
http://spinrdf.org/sp (from /TopBraid/SPIN/sp.rdf)
http://www.topbraid.org/2007/02/jena.owl (from /TopBraid/TBC/jena.owl)

SPIN 추론 – 추론 엔진 설정

Menu :: Inference/Configure Inferencing

1. 체크박스 선택

2. TopSPIN 선택



SPIN 추론 – 추론 결과 확인

The screenshot displays the TopBraid Composer ME interface. The 'Classes' pane on the left shows a hierarchy where 'Student' has three instances: 'FirstYearStudent', 'SecondYearStudent', and 'ThirdYearStudent'. The 'Resource Form' for 'Student_3' is shown in the center, with the 'registerFor' property highlighted by a red box. This property is linked to three course instances: 'Course3_2', 'Course3_3', and 'Course3_4'. The 'Properties' pane on the right lists various properties, including 'registerFor'. At the bottom, the 'Navigator' pane shows the project structure. A table below the Navigator pane shows the inference result for 'Student_3'.

| [Subject] | Predicate | Object |
|-----------|-----------|-------------|
| Student_3 | rdf:type | BusyStudent |

Student_3은 registerFor 프로퍼티가 3개가 연결되어 있으므로 BusyStudent의 인스턴스로 추론됨

SPIN 제약사항 – spin:constraint 작성

설정된 제약사항에 위배되었을 경우 경고를 표시하기 위해 토글 아이콘을 선택

The screenshot shows the TopBraid Composer interface. On the left, the 'Classes' tree is expanded to show the 'Student' class, which has 3 instances. A red arrow points to this class. In the center, the 'Class Form' for 'Student' is shown, with a red box highlighting the 'spin:constraint' section. The constraint is an 'ASK WHERE' query: `?this :age ?age .` with a filter `FILTER (?age < 20) .`. A red arrow points to the 'ASK WHERE' icon. On the right, the 'Properties' list is visible. At the bottom, a table shows the instance 'Student_3' with the predicate 'rdf:type' and object 'BusyStudent'.

1. 인스턴스가 해당되는 클래스 선택

2. spin:constraint에 해당 쿼리 작성

| [Subject] | Predicate | Object |
|-----------|-----------|-------------|
| Student_3 | rdf:type | BusyStudent |

SPIN 제약사항 – 인스턴스 생성 결과

The screenshot shows the TopBraid Composer ME interface. The main window displays the 'Resource Form' for the instance 'Student_1'. The 'age' property is set to '19' and is highlighted with a red box. A red arrow points to a warning icon (a triangle with an exclamation mark) next to the 'age' field. A red text box with Korean text is overlaid on the form, pointing to the warning icon.

학생의 나이를 20세 이하로 작성할 경우 경고 아이콘으로 알려줌

The bottom part of the screenshot shows a table with the following data:

| [Resource] | rdf:type | rdfs:label | rdfs:comment |
|------------|----------------------|------------|--------------|
| Student_1 | Student | | |
| Student_2 | Student | | |
| Student_3 | BusyStudent, Student | | |

이 기능은 인스턴스를 생성할 때 자동으로 체크하여 사용자에게 경고메시지를 보임으로 따로 기능 실행을 하지 않아도 된다.

SPIN 초기값 생성 – spin:constructor 작성

1. 인스턴스가 해당되는 클래스 선택

2. spin:constructor에 해당 쿼리 작성

```
CONSTRUCT {  
  ?this :createdAt ?date .  
}  
WHERE {  
  BIND (afn:now() AS ?date) .  
}
```

SPIN 초기값 생성 – 인스턴스 생성 결과

The screenshot displays the TopBraid Composer ME interface. The main window shows the 'Resource Form' for the instance 'FullTimeProfessor_1'. The 'createdAt' property is highlighted with a red box and contains the value '2012-05-07T14:10:07.17+09:00'. A red text box with Korean text is overlaid on the 'createdAt' field.

**해당 인스턴스 생성시
자동으로 초기값이 생성됨**

The interface also shows a class hierarchy on the left, a properties list on the right, and a table at the bottom.

| [Resource] | rdf:type | rdfs:label | rdfs:comment |
|---------------------|-------------------|------------|--------------|
| FullTimeProfessor_1 | FullTimeProfessor | | |

고맙습니다

질의 응답