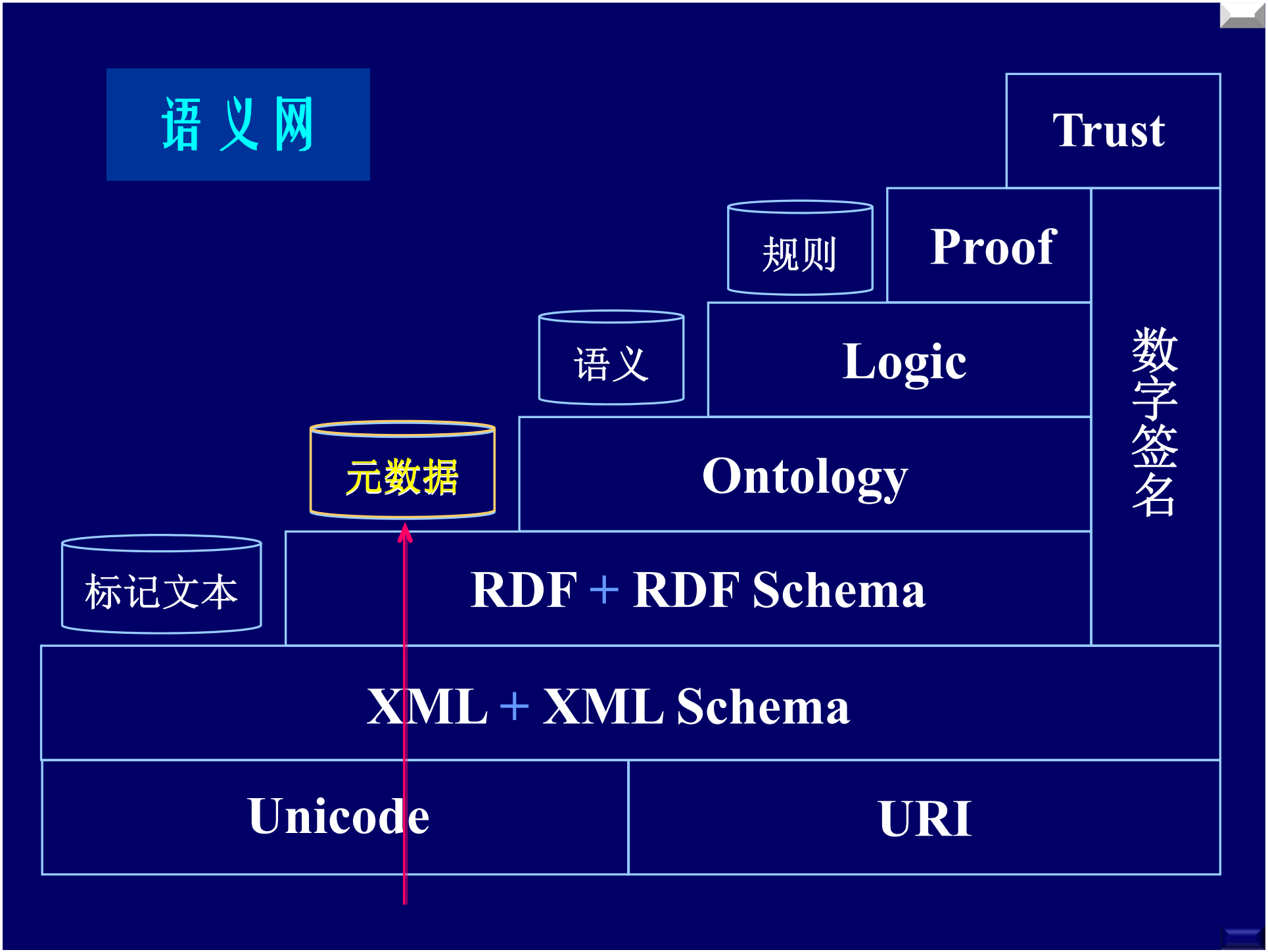
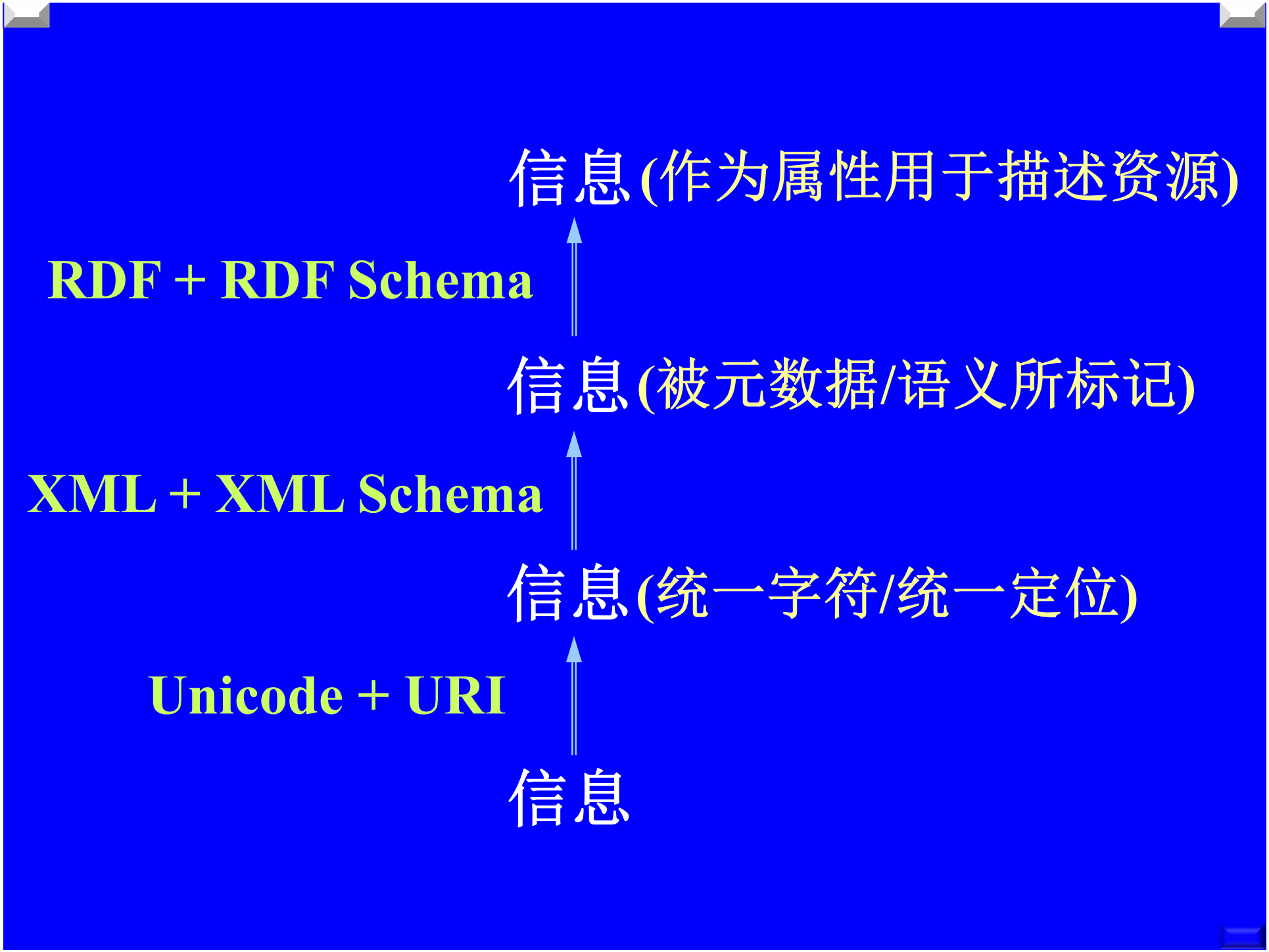
硕士研究生课程《智能信息处理》

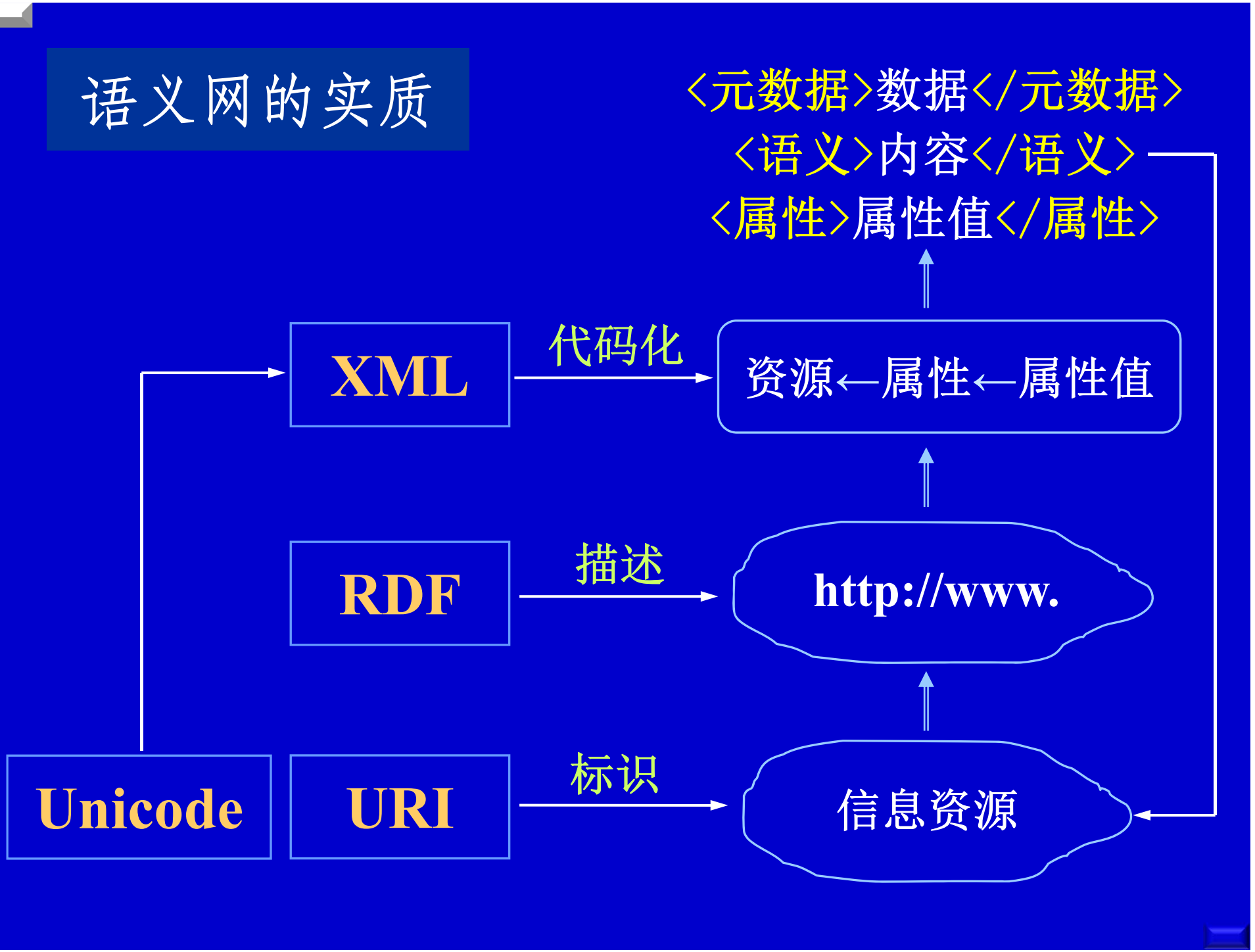
语义网基础理论

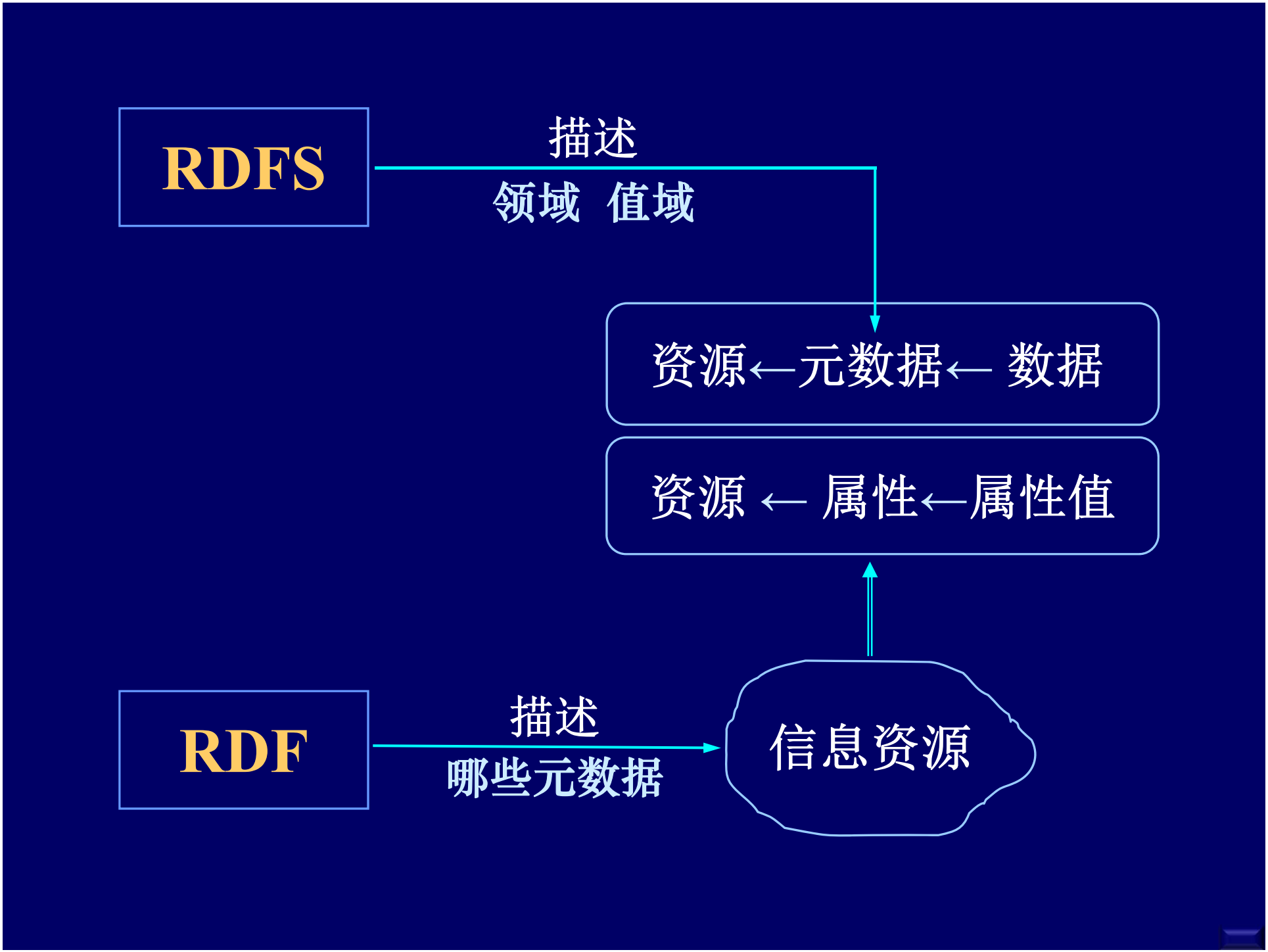
大连海事大学信息科学技术学院


语义网
Trust
规则
Proof
语义
Logic
数字签名
元数据
Ontology
标记文本
RDF + RDF Schema
XML + XML Schema
Unicode
URI


信息(作为属性用于描述资源)
RDF + RDF Schema
信息(被元数据/语义所标记)
XML + XML Schema
信息(统一字符/统一定位)
Unicode + URI
信息

语义网的实质


〈元数据〉数据〈/元数据〉
〈语义〉内容〈/语义〉
〈属性〉属性值〈/属性〉
XML
代码化
资源←属性←属性值
RDF
描述
http://www.
Unicode
URI
标识
信息资源


RDFS
描述
领域 值域
资源←元数据← 数据
资源 ← 属性←属性值
RDF
描述
哪些元数据
信息资源

第4章 资源描述框架模式RDFS

4.1 基本概念

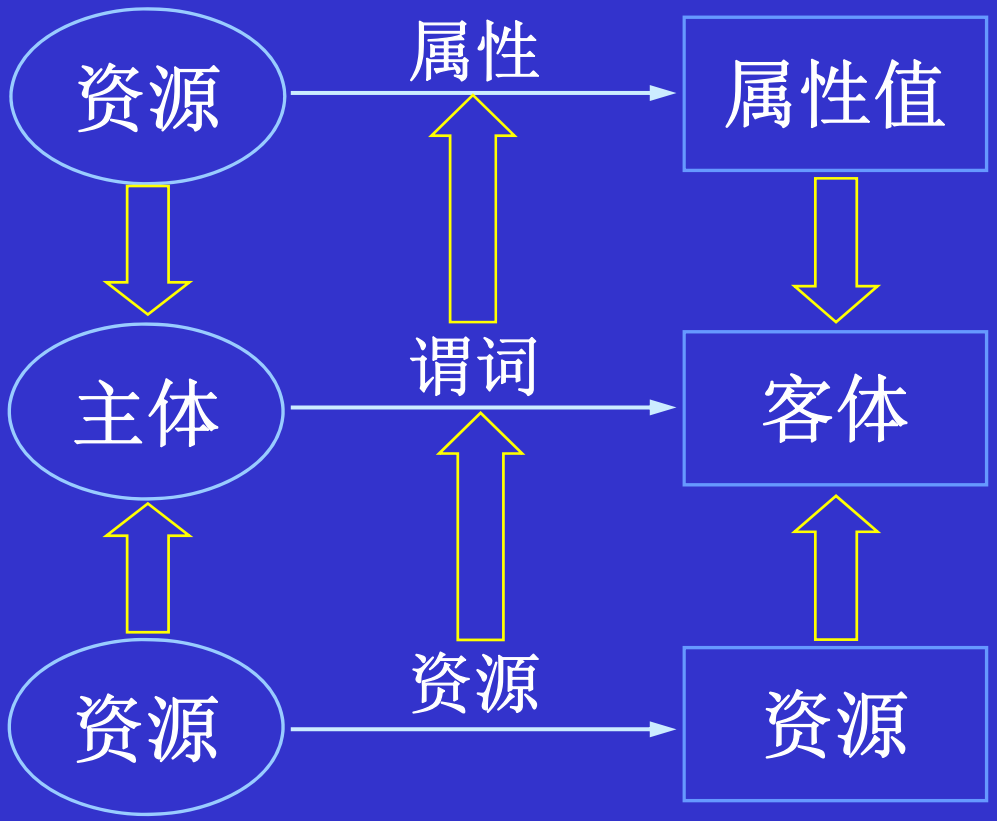
4.2 以属性为中心

4.3 组成: 类和性质

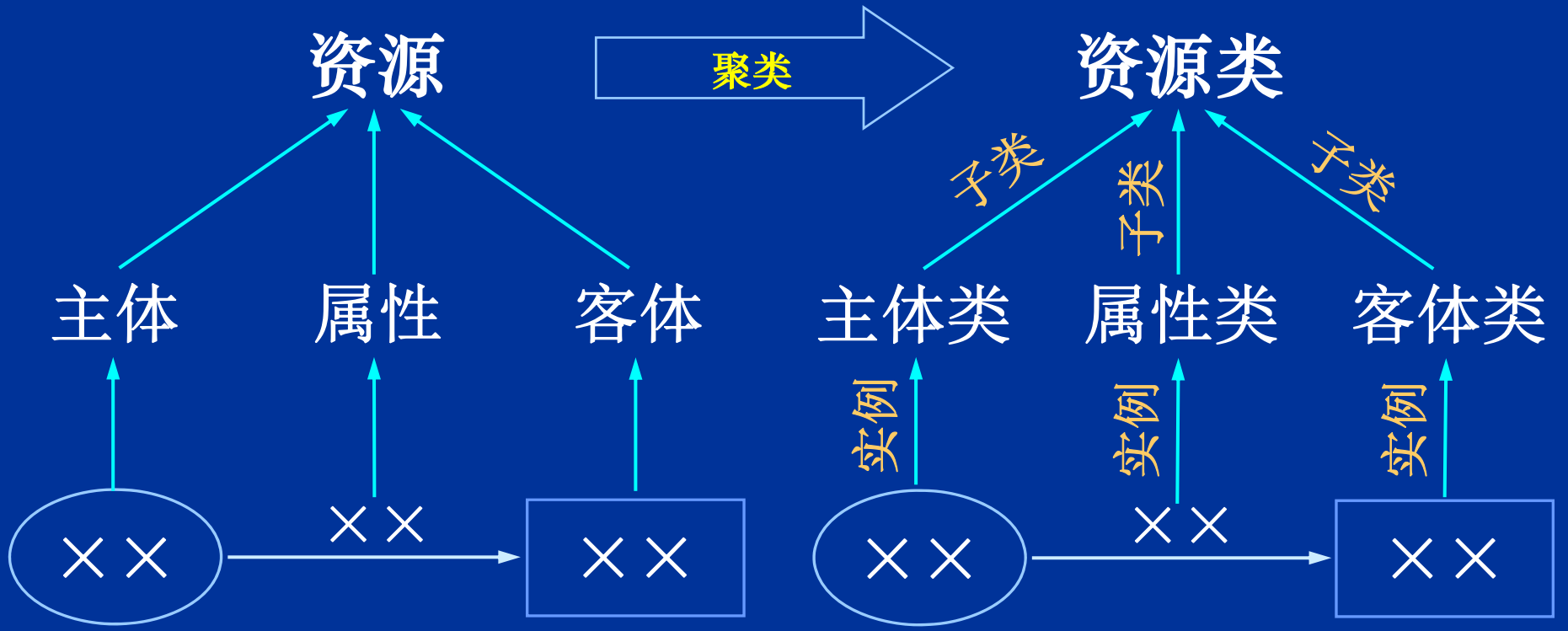
4.4 语义解释

RDF

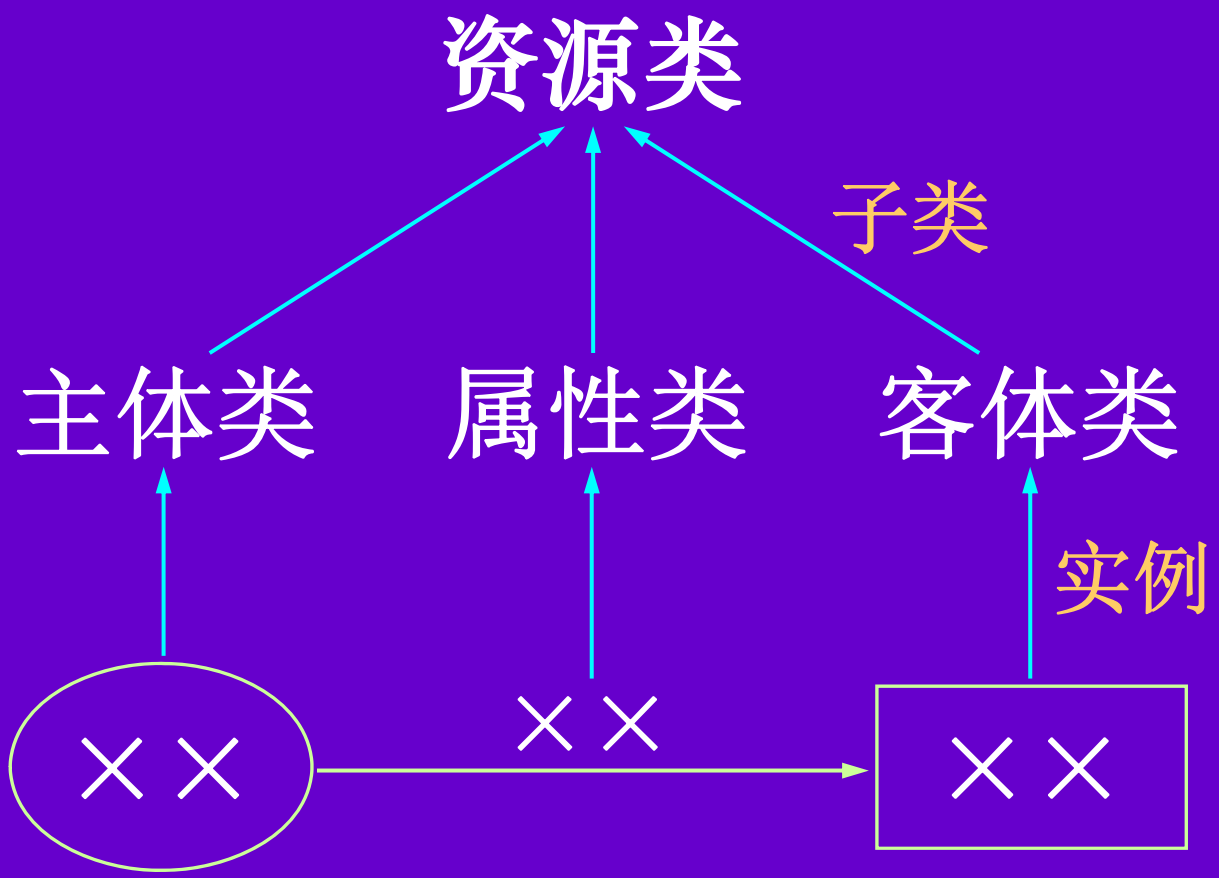
资源 ← 属性 ← 属性值
resource property value



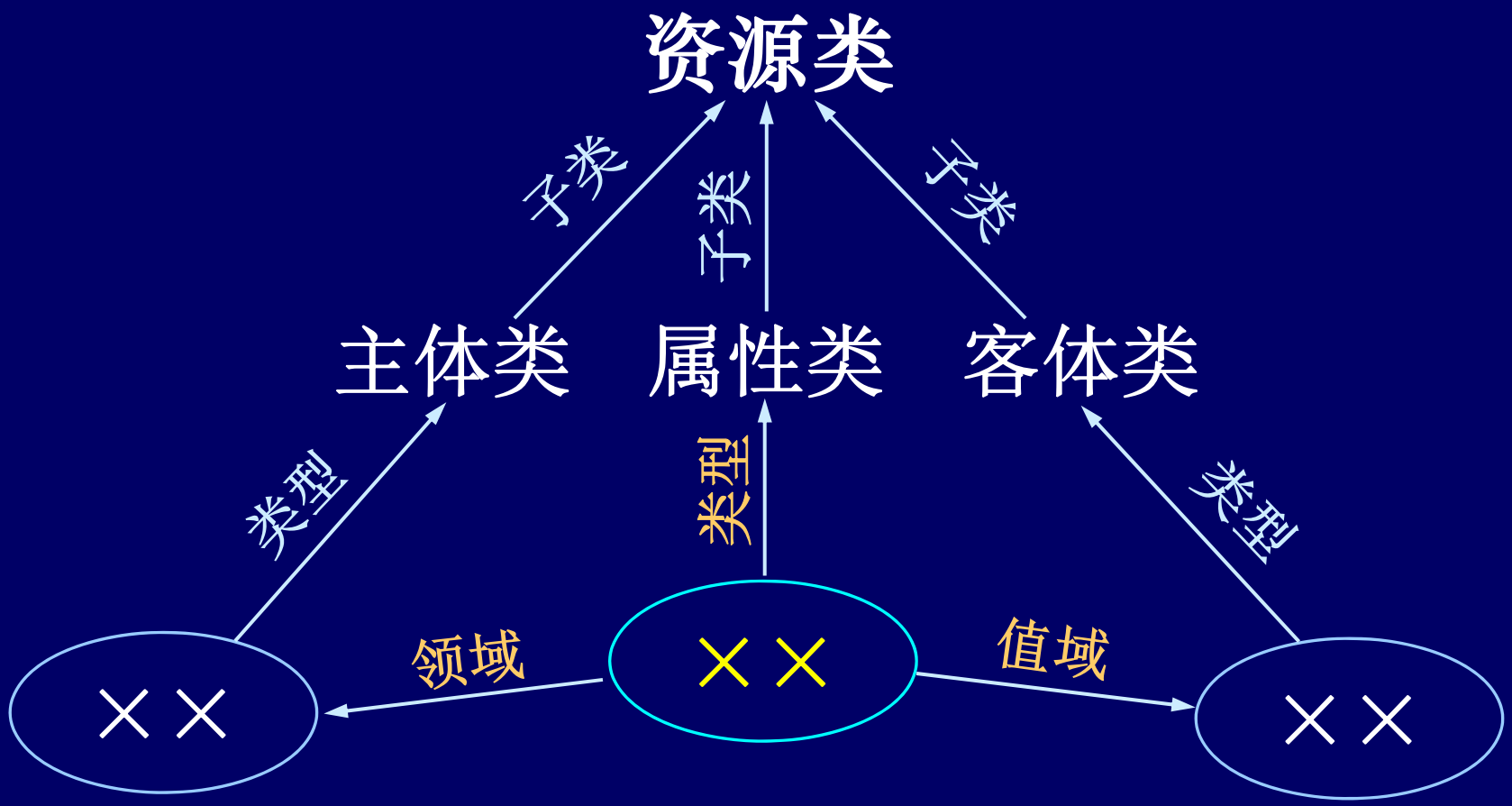
RDF Schema的基本概念：类和性质



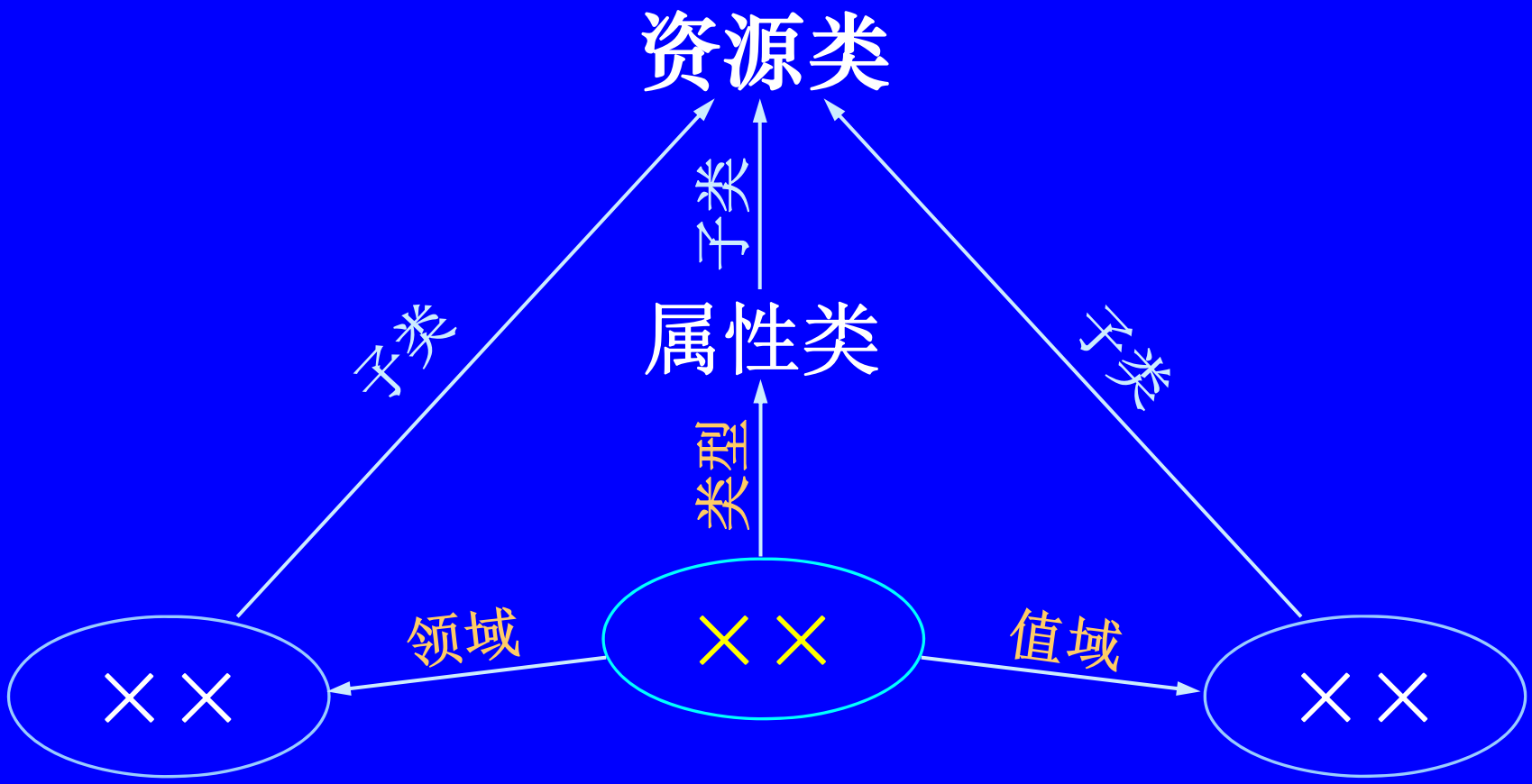
类和性质



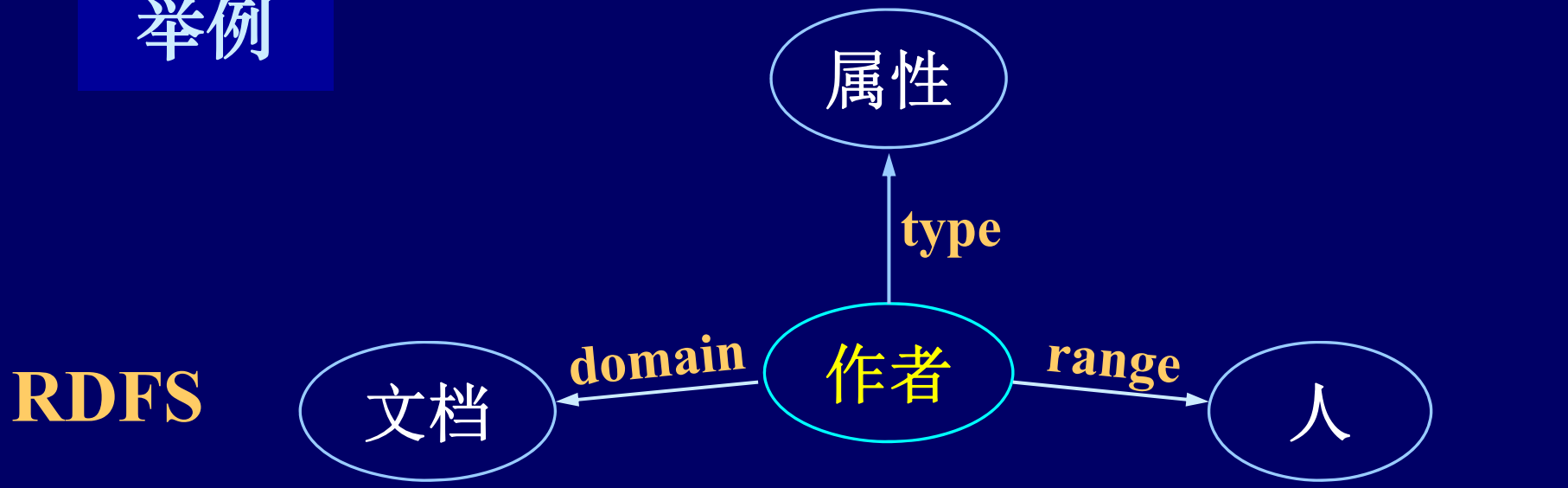
以属性为中心的RDF Schema

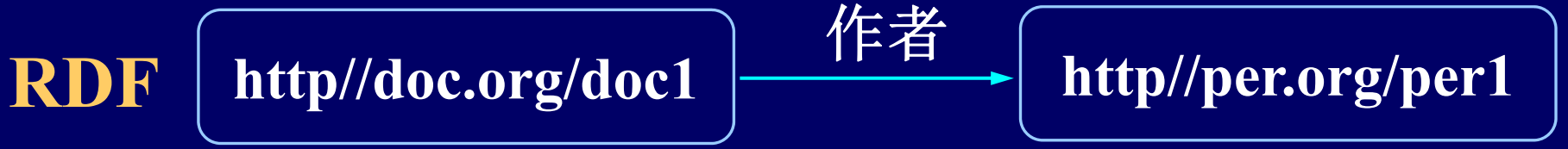


以属性为中心的RDFS(图4-6)



举例


属性
type
RDFS
文档
domain
作者
range
人


RDF
http//doc.org/doc1
作者
http//per.org/per1

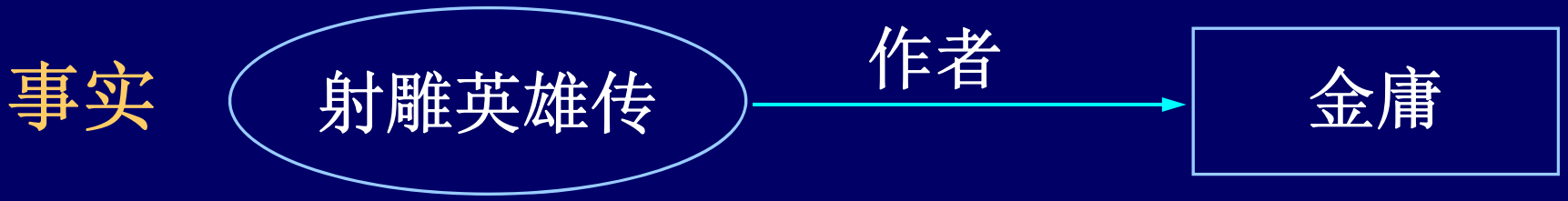
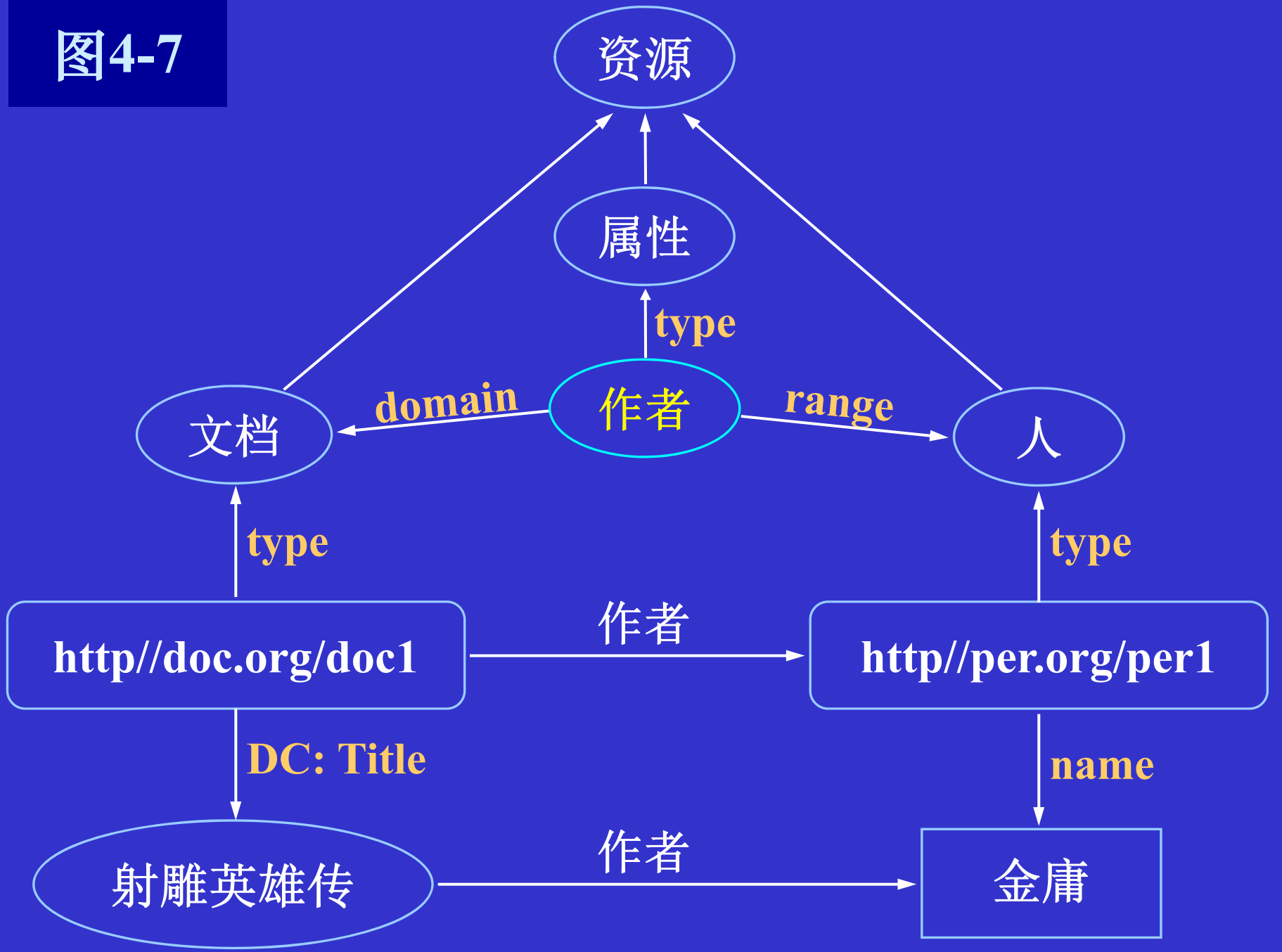
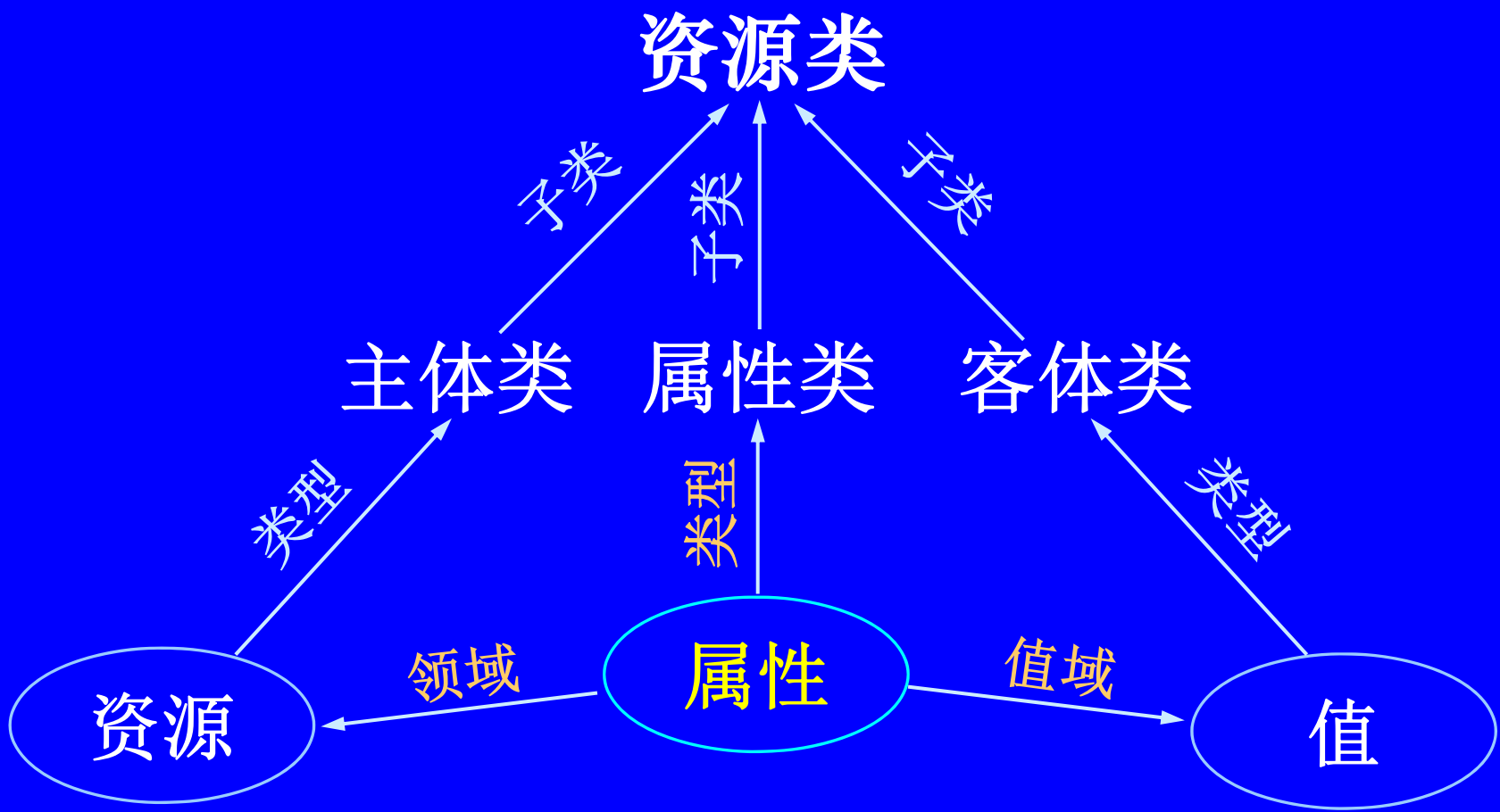

事实
射雕英雄传
作者
金庸

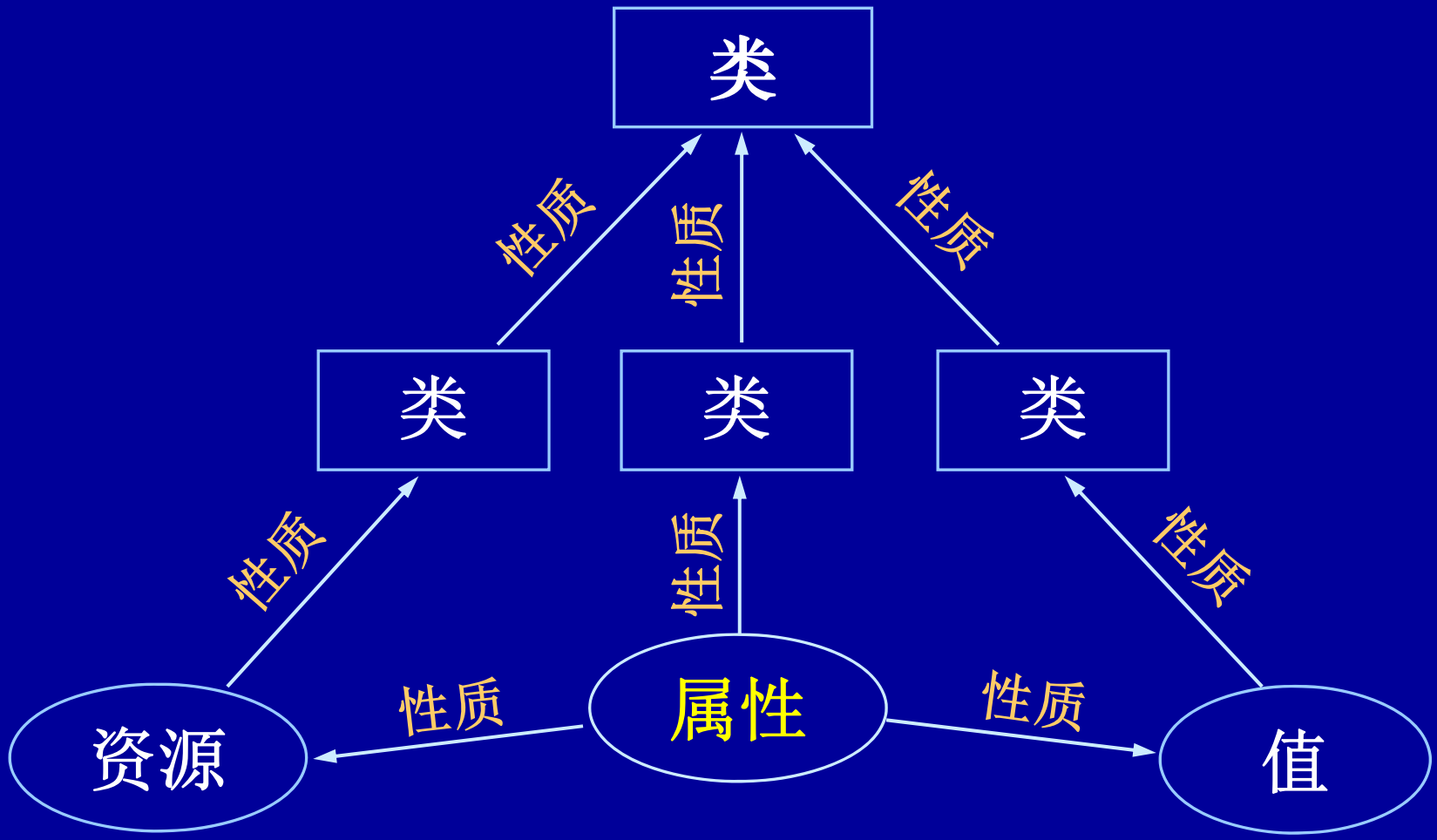
图4-7


资源
属性
type
文档
domain
作者
range
人
type
type
http//doc.org/doc1
作者
http//per.org/per1
DC: Title
name
射雕英雄传
作者
金庸

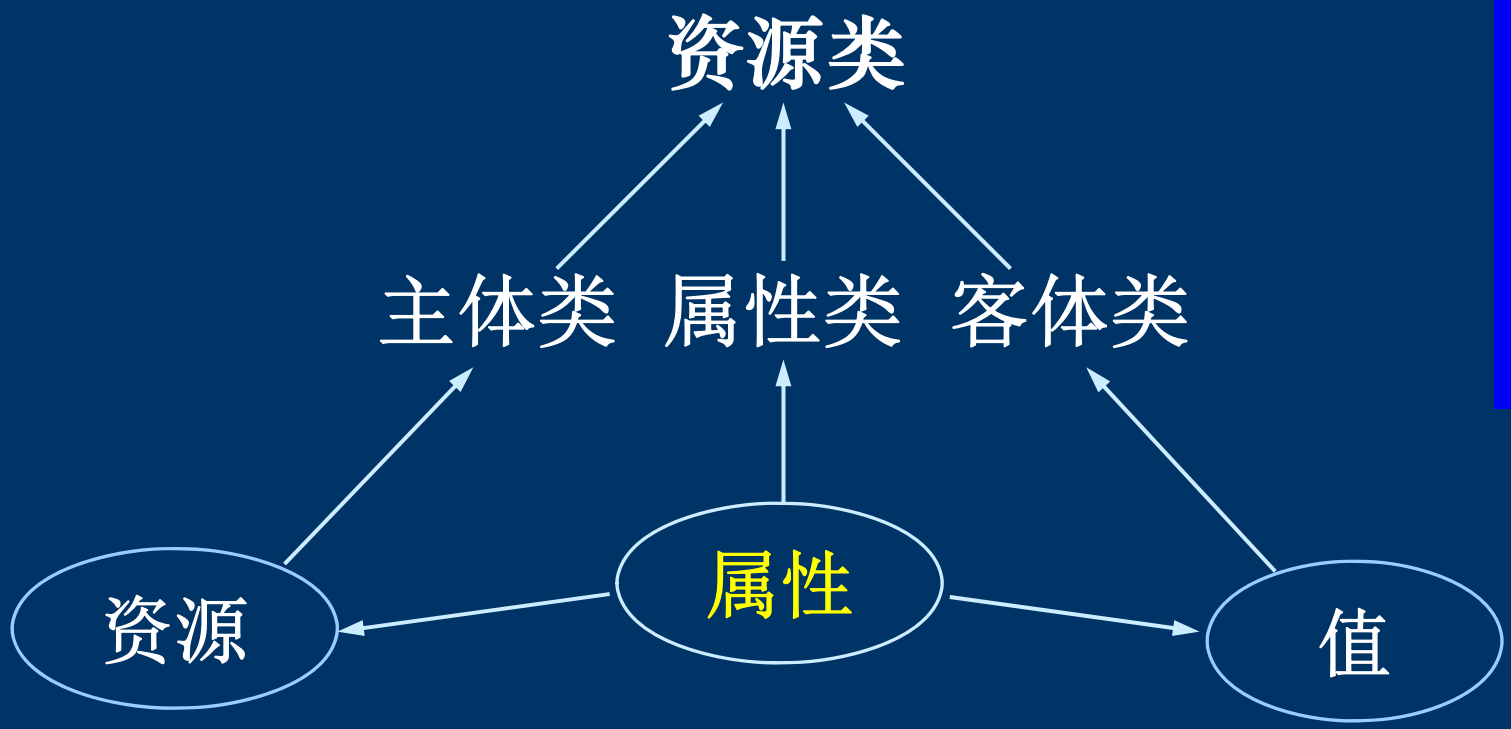
以属性为中心的RDF Schema



RDFS的组成：类和性质

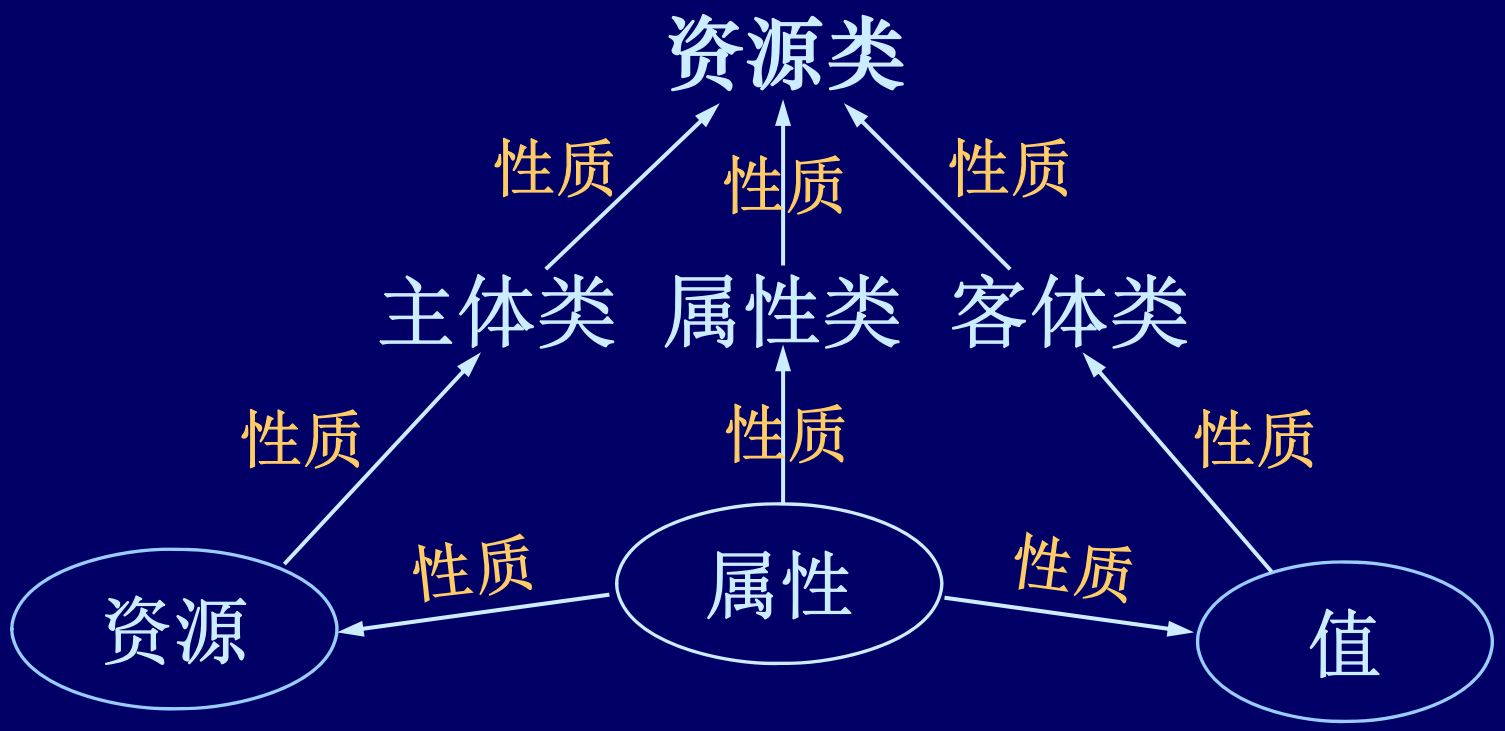


主要的类



rdfs: Class
rdfs: Resource
rdf: Property
rdfs: Literal

rdf: Statement
rdf: subject
rdf: predicate
rdf: object



rdf: type
rdfs: domain
rdfs: range
rdfs: label
rdfs: comment

rdfs: subClassOf
rdfs: subPropertyOf

主要的性质

RDF容器: 相关的类和性质

包(Bag) 无序的资源列表

序(Sequence) 有序的资源列表

替换(Alternative) 可选的资源列表

rdfs: Container

rdf: Bag

rdf: Seq

rdf: Alt

rdfs: ContainerMembershipProperty

rdf: List

rdfs: member

rdf: first

rdf: rest

rdf: nil

RDFS类和性质的用法举例(P99)

```
<rdfs: Class  rdf: ID="Animal">
    <rdfs: label>
        Animal
    </rdfs: label >
    <rdfs: comment>
        This class of animals is illustrative of
        a number of ontological idioms.
    </rdfs: comment>
</rdfs: Class>
```

RDFS类和性质的用法举例(P100)

```
<rdf: Property  rdf: ID="hasParent">
    <rdfs: domain rdf: resource="#Animal"/>
    <rdfs: range rdf: resource="#Animal"/ >
</rdf: Property>
```

RDFS类和性质的用法举例(P100)

```
<rdf: Property  rdf: ID="shoesize">
   <rdfs: comment>
        shoesize is a DatatypeProperty
        whose range is xsd:decimal.
        shoesize is also a UniqueProperty
        (can only have one shoesize).
   </rdfs: comment>
   <rdf: type rdf: resource="http//www.w3.org/
                    2001/10/daml+oil#UniquePerperty"/>
   <rdf: range rdf: resource="http//www.w3.org/
                    2001/10/xmlschema#decimal"/>
</rdf: Property>
```

RDFS类和性质的用法举例(P100)

```
<rdfs:Class  rdf:ID="Male">
    <rdfs:subClassOf rdf:resource="#Animal"/>
</rdfs: Class>
```

```
<rdf:Property  rdf:ID="hasfather">
    <rdfs:subProperytOf rdf:resource="#hasParent"/>
    <rdfs:range rdf:resource="#Male"/ >
</rdfs:Property>
```

课间休息


再会