# Using Relationships in DDI4

For each class in DDI4 content may be included either as a **property** or through a **relationship**.

## Properties

Properties may be either **simple** or **complex**. An example of a simple property of a Study would be *versionResponibility* which is a simple xml schema string. An example of a complex property would be an *overview* which has a complex datatype of *InternationalStructuredString.* This datatype has a hierarchy of multiple properties allowing for the specification not only of the string itself, but also its language, whether it is a translation, the original source language, translation date, and more. The value of a property is intended to be uniquely recorded. It is not referenced by multiple classes.

## Relationships

When information is to be reused, for example the information about an individual, it is included by reference through a relationship. An example of a relationship for a Study would be a relationship to a Population. More than one Study may refer to the same Population. The reference to another DDI class is done through a URN. DDI URNs are a string with a specific structure embedding an agency identifier, an Id, and a version. A URN referencing the Population with an Id of “MyPopulation27B” with the agency managing that Id space having an agency identifier of “example.org” and a version of “1.0” would look like: “URN:DDI:example.org: MyPopulation27B:1.0”

The XML representation for the examples above is:

<?xml version="1.0" encoding="UTF-8"?>  
<DDI xmlns="urn:ddi.org:4"  
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"  
 xsi:schemaLocation="file:/C:/schemas/DDI4/Build-2017-05-26/xsd/SimpleCodebookView\_4-DR0.2.xsd" type="SimpleCodebookView">  
 <DocumentInformation></DocumentInformation>  
 <Study>  
 <VersionResponsibility>A.Version</VersionResponsibility>  
 <Overview>  
 <LanguageSpecificStructuredString isPlainText="true" xml:lang="en-US" >  
 This is an overview for an example in the DDI Documentation  
 </LanguageSpecificStructuredString>  
 </Overview>  
 <HasPopulation typeOfClass="Population" >URN:DDI:example.org:MyPopulation27B:1.0</HasPopulation>   
   
 <Agency>example.org</Agency>  
 <Id>MyStudy</Id>  
 <Version>1.0</Version>  
 </Study>  
   
   
 <Population>  
 <Agency>example.org</Agency>  
 <Id>MyPopulation27B</Id>  
 <Version>1.0</Version>  
   
 <DescriptiveText>  
 <LanguageSpecificStructuredString>  
 Persons over 65 years of age. A population referenced by the example study and possibly others  
 </LanguageSpecificStructuredString>  
 </DescriptiveText>  
   
 </Population>  
   
   
</DDI>