Ambiguity and name collision

```
<book>
  <title>XML in a nutshell</title>
  <abstract>...</abstract>
  <recommended_subject_categories>
    <category>XML</category>
    <category>Programming</category>
    <category>Internet</category>
  </recommended_subject_categories>
</book>
```

Ambiguity and name collision

```
<order currency=”£”>
   <item>
      <book>
         <title>XML in a nutshell</title>
         <isbn>0123456789</isbn>
      </book>
      <quantity>2</quantity>
      <price>29.99</price>
      <discount>4.98</price>
      <subtotal>55.00</subtotal>
   </item>
</order>
```

Ambiguity and name collision

- Which definition is the data referring to?
- Bigger problem when using instances of names drawn from multiple DTDs.
- Consider the case where vocabulary designers created the following two DTDs in isolation, without the knowledge that some time in the future their DTDs would be used together. The one is for traffic lights and the other for street lamps

Ambiguity and name collision

```
<!ELEMENT Light EMPTY>
<!ATTLIST Light colour (red | yellow | green) #REQUIRED>
```

and

```
<!ELEMENT Light EMPTY>
<!ATTLIST Light colour CDATA #REQUIRED>
```

Example

```
<inventory>
  <light colour=”red” />
  <light colour=”white” />
  ..
</inventory>
```

Ambiguity and name collision

- Without checking the constraints we are not able to tell whether the Light element refers to traffic lights or street lamps.
- This problem is known as **ambiguity** for well-formed documents.
- If the names Light and colour required validation we could also face the problem of **name collisions**.

XML Namespaces

- The solution to the problems of ambiguity and name collisions.
- A collection of names, identified by a URI reference, which are used in XML documents as element types and attribute names.
- URLs that point to the DTD is a common way, but URIs are not only URLs. Common protocol used in URIs in XML namespaces is urn.
- URIs create uniqueness regarding the use of the element(s).

Examples

```
<cat:book
xmlns:cat=”urn:dcs.bbk.ac.uk/~dionisis/xml/catalogue>
  <cat:title>XML in a nutshell</cat:title>
  <cat:abstract>...</cat:abstract>
  <cat:recommended_subject_categories>
    <cat:category>XML</cat:category>
    <cat:category>Programming</cat:category>
    <cat:category>Internet</cat:category>
  </cat:recommended_subject_categories>
</cat:book>
```

Examples

```
<ord:order xmlns:catalogue=”urn:dcs.bbk.ac.uk/~dionisis/xml/catalogue”
xmlns:ord=”urn:dcs.bbk.ac.uk/~dionisis/xml/order” currency=”£”>
  <ord:item>
    <catalogue:book>
     – <catalogue:title>XML in a nutshell</catalogue:title>
     – <catalogue:isbn>0123456789</catalogue:isbn>
    </catalogue:book>
    <ord:quantity>2</ord:quantity>
    <ord:price>29.99</ord:price>
    <ord:discount>4.98</ord:price>
    <ord:subtotal>55.00</ord:subtotal>
  </ord:item>
</ord:order>
```

Example

```
<inventory
xmlns:traffic=”urn:some.domain/owner/name”
xmlns:street=”urn:another.domain/owner/name”>
  <traffic:light colour=”red” />
  <street:light colour=”white” />
  ..
</inventory>
```