

A Simple XML Document

```
<?xml version="1.0" encoding="ISO-8859-1"?>
<!DOCTYPE custom
  SYSTEM http://www.abc.com/custom.dtd>

<MyTag1>
  <OtherTag opt1="yes"> ... </OtherTag>
  :
</MyTag1>
```

Example XML Document for an E-Commerce Transaction

```
<?xml version="1.0" encoding="ISO-8859-1" standalone="yes"?>
<!DOCTYPE Order [
<!--
  A DTD for a real on-line order system wouldn't look very much like
  this, though it would be natural for such systems to use valid XML
  .
  -->
<!ELEMENT Order (Customer,Manifest,Receipt)>
<!ATTLIST Order xmlns CDATA #FIXED "http://www.example.com/myschem
a.xml">
<!ELEMENT Customer (Name, Cardnum) >
<!ELEMENT Name (#PCDATA) >
<!ELEMENT Cardnum (#PCDATA) >
<!ELEMENT Manifest (Item*) >
<!ELEMENT Item (ID,Title,Quantity,UnitPrice) >
<!ELEMENT ID (#PCDATA) >
<!ELEMENT Title (#PCDATA) >
<!ELEMENT Quantity (#PCDATA) >
<!ELEMENT UnitPrice (#PCDATA) >
<!ELEMENT Receipt (Subtotal,Tax,Total) >
<!ELEMENT Subtotal (#PCDATA) >
<!ELEMENT Tax (#PCDATA) >
<!ELEMENT Total (#PCDATA) >
] >
<Order>
  <Customer>
    <Name>Bill Buckram</Name>
    <Cardnum>234 234 234 234</Cardnum>
  </Customer>
  <Manifest>
    <Item>
      <ID>209</ID>
      <Title>
        Duke: A Biography of the Java Evangelist
      </Title>
      <Quantity>1</Quantity>
      <UnitPrice>$10.75</UnitPrice>
    </Item>
  </Manifest>
  <Receipt>
    <Subtotal>$53.75</Subtotal>
    <Tax>$4.43</Tax>
    <Total>$58.18</Total>
  </Receipt>
</Order>
```

Sending XML through HTML Forms

```
<HTML>  
<FORM METHOD=POST ACTION="getXml.cgi">  
  <INPUT TYPE=HIDDEN NAME="MyXMLDoc"  
    VALUE=" WWW-encoded cXML message">  
</FORM>
```

Communicating with XML: The Request-Response Mode

1. Send request via POST method simulating HTML form submission.
2. At destination, parse and evaluate XML message
3. Return XML response instead of HTML

Request Message

```
<cXML>  
  <Header> ... </Header>  
  <Request> ... </Request>  
</cXML>
```

Response Message

```
<cXML>  
  <Response> ... </Response>  
</cXML>
```

Communicating with XML: The Asynchronous Mode

1. Send request via GET or location change methods
2. At destination, parse and evaluate XML message
3. Send an XML reply message to the return address

Request Message (examples: **sender** and **receiver**)

```
<cXML>  
  <Header>  
    (include ID and reply CGI address here) ... </Header>  
  <Request> ... </Request>  
</cXML>
```

Response Message

```
<cXML>  
  <Header>  
    (the ID of this message should match with the request) ...  
  </Header>  
  <Response> ... </Response>  
</cXML>
```

Sending a cXML Request Using PERL

```
## Preamble:
use lib
    '/home/swamp2/maida/cxg9789/share/lib/perl5/5.00502';
use LWP::Simple;
use HTTP::Request::Common;
:
## Send cXML:
$reqURL = "bankRequests.cgi"
$cXMLdoc = "<?xml ... ";
$ua = LWP::UserAgent->new;
$req = POST "$reqUrl",
           ['content' => $cXMLdoc];
$respStatus = $ua->request($req);
if ($respStatus->is_success) {
    $cXMLreply = $respStatus->content;
} else { ... }
```

Sending a cXML Request Using Java

```
URL myURL = new URL("bankRequest.cgi");
URLConnection connection =
    (URLConnection) myURL.openConnection();
connection.setRequestMethod("POST");
connection.setDoOutput(true);

PrintWriter out = new
    PrintWriter(connection.getOutputStream());
out.println(queryString);
out.close();

BufferedReader xmlReader =
    new BufferedReader(new
        InputStreamReader(connection.getInputStream()));
```