



When to Use Attributes vs. Elements

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There is a debate in the XML community that has been going on for quite some time, concerning when to use attributes vs. elements. A general rule of thumb is to make everything an attribute unless it is warranted to use an element. With that said, there is a lot of XML being done that doesn't use attributes at all, so you will see a mixture in all the examples provided in the RPG-XML Suite user manual to demonstrate instances of all approaches.

For example, here are two xml documents that have exactly the same information but are composed differently:

No attributes used:

```
<PostAdr>
  <residential>true</residential>
  <name>
    <title>Mr.</title>
    <first>Aaron</first>
    <last>Bartell</last>
  </name>
  <street>123 Center Rd</street>
  <cty>Mankato</cty>
  <state>MN</state>
  <zip>56001</zip>
  <phone>123-123-1234</phone>
  <phone>321-321-4321</phone>
</PostAdr>
```

Extensive attributes used.

```
<PostAdr residential="true" title="Mr." firstName="Aaron" lastName="Bartell"
  street="123 Center Rd" cty="Mankato" state="MN" zip="56001">
  <phone>123-123-1234</phone>
  <phone>321-321-4321</phone>
</PostAdr>
```

Note that all tags other than <phone> have been made into attributes in the <PostAdr> tag. The main reason <phone> could not be put into <PostAdr> as an attribute is because it could potentially repeat many times. The following are some rules of thumb to apply during your schema development:

Rule Of Thumb #1: If a piece of data needs to repeat itself multiple times within the same parent tag, it should be an element instead of an attribute.

Rule Of Thumb #2: If it is necessary to pass information that is not supposed to be parsed by the xml parser, the `<![CDATA[don't parse me]]>` tag will need to be used. The CDATA tag is only valid in elements and cannot be used in attributes.

Rule Of Thumb #3: If there is any chance of needing future expansion, attributes are not the initial solution for that particular piece of data and an element should be used instead. (e.g. `<phone>` could potentially need to change since something like a phone extension may need to be added)

Rule Of Thumb #4: Use elements if the contained data could exceed 256 characters in value. This has been devised as an acceptable maximum amount to put into attributes. There are no industry standards that dictate this opinion. To put this rule of thumb into context and relate it to another limitation in the industry, consider how some web servers limit the amount of data that can be passed on an HTTP GET command. Some don't allow more than 1024 bytes. In the same respect, not all parsers are written by one person and there may be limitations for lengths in attributes.

Some people/sites advise avoiding the use of attributes because they don't "look" as nice as elements. That is a poor reason for design consideration for something that will never be viewed by the end user. A solution would be to get an XML viewer that allows you to view the xml document in a fashion that suites your needs.

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