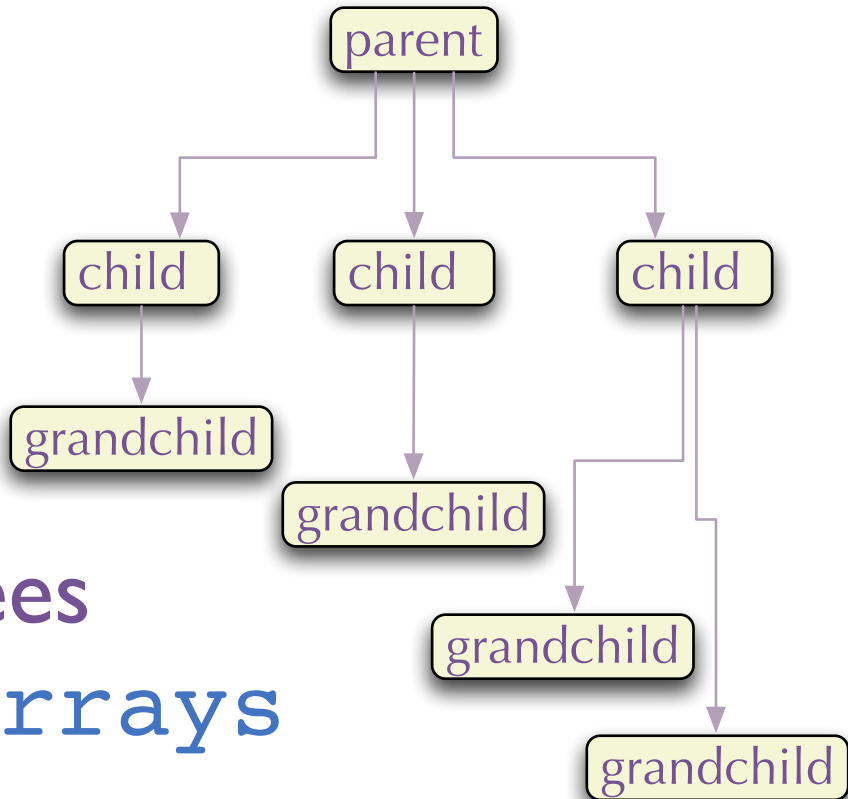


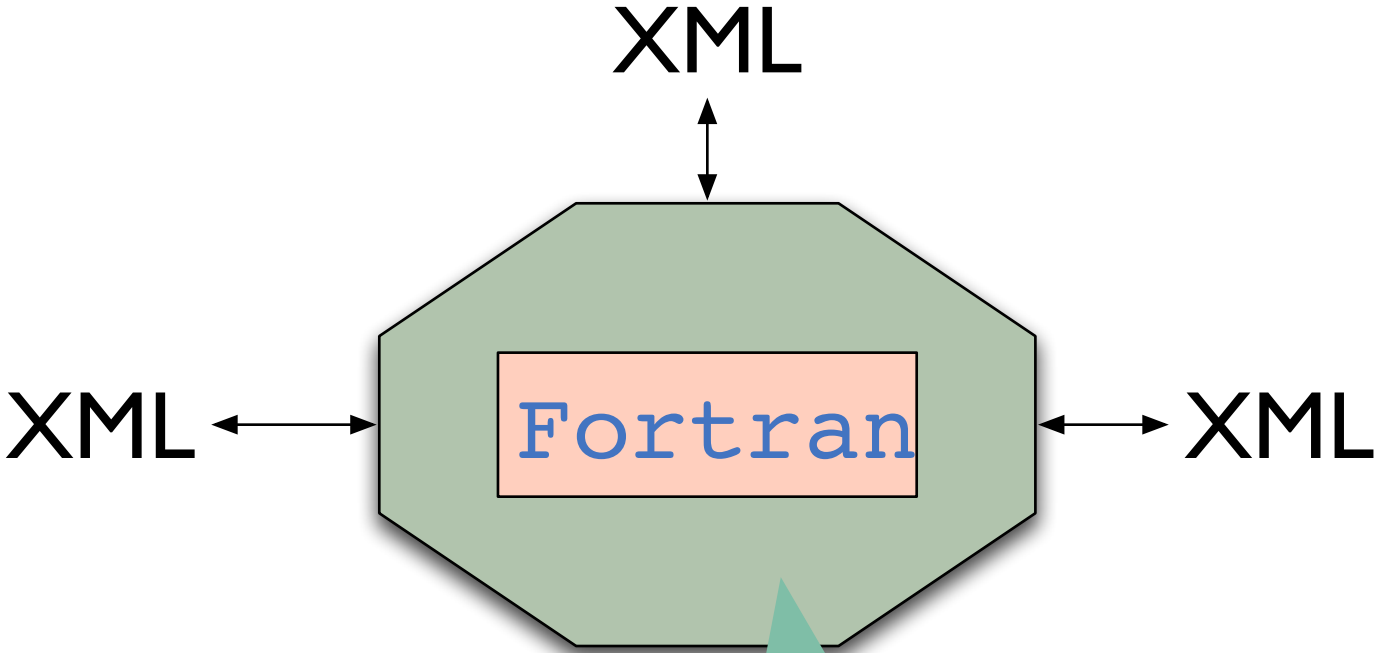
Fortran  
and  
XML



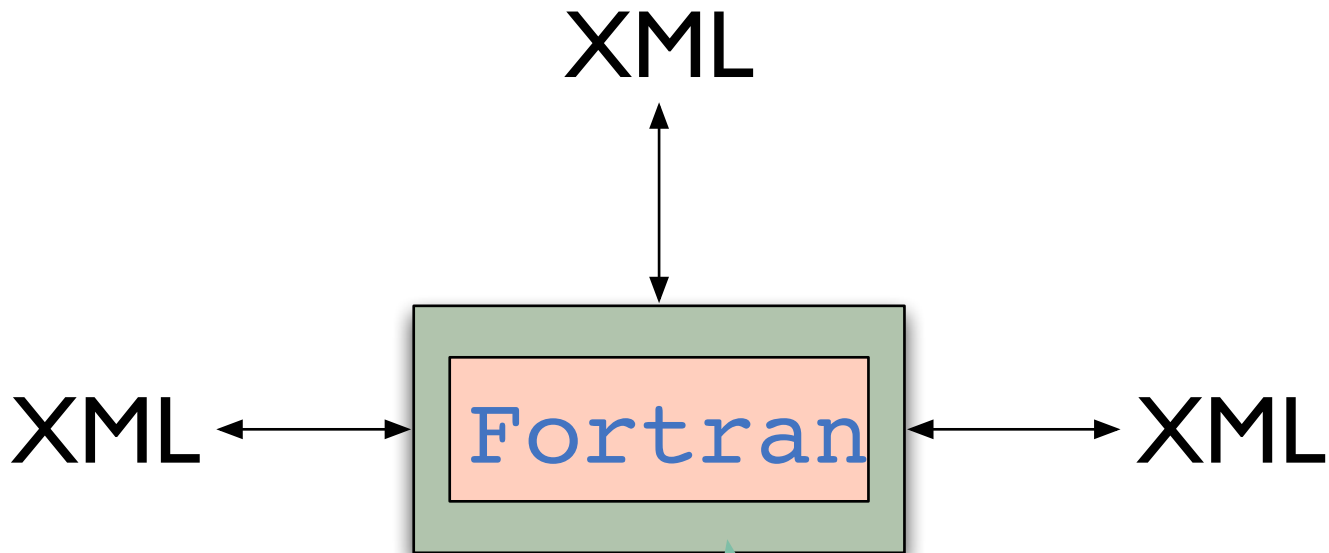
XML trees

Fortran arrays

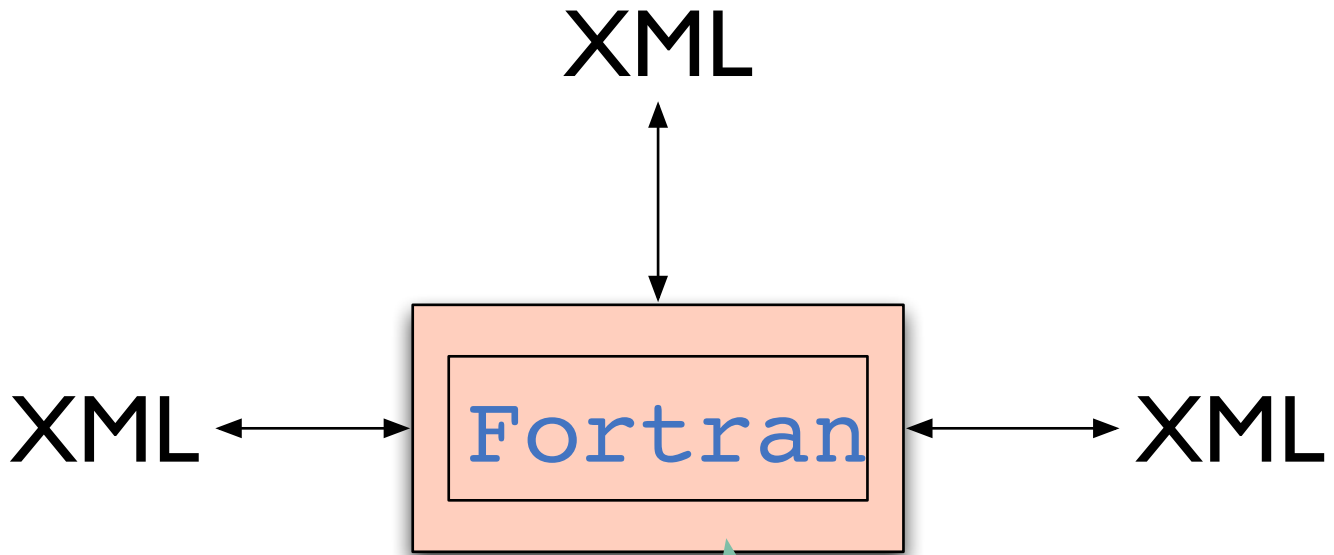
```
double precision x(30000), y(30000), z(30000)
```



Perl/Python/Java translators



Low-level Fortran-C wrapper



Direct Fortran-XML calls

# FoX: Fortran-XML

<http://www.uszla.me.uk/FoX>

<http://nn-online.org/code/xml>

<http://sourceforge.net/projects/xml-fortran>

<http://sourceforge.net/projects/libxml2fortran>

```
program science
  use FoX_wxml
  ...
```

```
module science
  use FoX_wxml
  ...
```

```
subroutine science
  use FoX_wxml
  ...
```

```
function science
  use FoX_wxml
  ...
```

# File descriptor

```
program science
  use FoX_wxml
  type(xmlf_t) :: xf

  ...

  call xml_doStuff(xf, ...
```



```
integer :: i = 20

open(i, "input.txt")

write(i, ...)

close(i)
```

```
type(xmlf_t) :: xf

call xml_openFile(xf, fileName, unit)

call xml_doStuff(xf, ...)

call xml_Close(xf)
```

# Elements

```
call xml_NewElement(xf, 'child')  
...  
call xml_EndElement(xf, 'child')
```

```
<child>
```

```
...
```

```
</child>
```

```
<child/>
```

# Attributes

```
call xml_NewElement(xf, 'child')  
call xml_AddAttribute(xf, 'name', &  
                      'Rita')  
call xml_NewElement(xf, 'child')
```

```
<child name="Rita"/>
```

# Data types

```
call xml_NewElement(xf, 'child')
call xml_AddAttribute(xf, 'shoeSize', &
                    5)
call xml_AddAttribute(xf, 'height', &
                    1.8)
call xml_EndElement(xf, 'child')
```

```
<child shoeSize="2"
      height="1.8e0" />
```

# String Formatting

```
call xml_doStuff(xf, Number, fmt=fmt)
```

Exponential

s1	1e2
s2	1.1e2
s3	1.11e2
s4	1.110e2

Non-exponential

r0	3
r1	3.1
r2	3.14
r3	3.142

# Text

```
call xml_NewElement(xf, 'child')
call xml_AddCharacters(xf, &
    'This is a description of Rita')
call xml_AddNewline(xf)
call xml_AddCharacters(xf, &
    'Oh, & her occupation.')
call xml_EndElement(xf, 'child')
```

```
<child>This is a description of Rita
Oh, & her occupation.</child>
```

# Namespace magic

```
call xml_DeclareNamespace(xf, &
    'http://www.w3.org/1999/xhtml')
call xml_AddElement(xf, 'html')
```

```
<html
  xmlns="http://www.w3.org/1999/xhtml">
```