

XPointer

Šta je XPointer

- jezik za označavanje delova XML dokumenta
 - proširuje XPath
 - pronalaženje podataka poređenjem teksta
 - može da se doda na kraj URI-ja
 - označava ne samo cele čvorove u dokumentu, već i delove čvorova
- koristi se za povezivanje dokumenata

Upotreba XPointera

- ugrađivanje u URL-je
 - na kraj URL adrese se doda #xpointer(...)
 - primer:
`http://www.ftn.ns.ac.yu/students.xml#xpointer(//indeks[@id='1234'])`

XPointer lokacija

- pojam lokacije je uopštenje pojma XPath čvora
- lokacija može biti
 - XPath čvor
 - tačka (point)
 - opseg (range)
- opšti oblik XPointer izraza

`xpointer(lokacija)`

XPointer + XPath

- primeri

```
xpointer(/)
xpointer(//first_name)
xpointer(id('sec_intro'))
xpointer(/people/person/name/first_name/text())
xpointer(//middle_initial[1]/../first_name)
xpointer(//professional[.="physicist"])
xpointer(/child::people/child::person[@id<4000])
xpointer(/child::people/child::person/attribute::id)
```

XPointer + XPath: identifikacija više elemenata

- spajanjem više XPointer izraza:

```
xpointer(//first_name)xpointer(//last_name)
```

XPointer tačka

- tačka se definiše pomoću
 - čvora koji je sadrži (container node)
 - indeksa i
 - mesto odmah nakon i -tog podelementa (za strukturirani sadržaj)
 - mesto odmah nakon i -tog karaktera (za tekstualni sadržaj)

XPointer tačka

- za definisanje tačke mogu se koristiti funkcije
 - `start-point()`
 - `end-point()`

XPointer tačka

- start-point(): tačka “ispred”



tačka

<name>

<first>John</first>

<middle>Fitzgerald Johansen</middle>

<last>Doe</last>

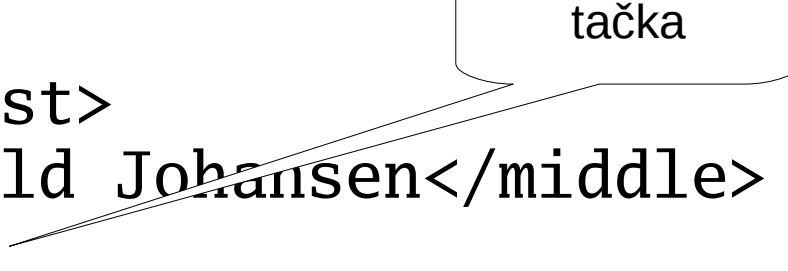
</name>

xpointer(start-point(/name/last))

XPointer tačka

- end-point(): tačka “iza”

```
<name>  
  <first>John</first>  
  <middle>Fitzgerald Johansen</middle>  
  <last>Doe</last>  
</name>
```




The diagram illustrates the concept of an XPointer 'tačka' (point). A callout box labeled 'tačka' is connected by a line to the closing tag of the 'last' element, '</last>', within the 'name' element of the XML snippet.

```
xpointer(end-point(/name/last))
```

XPointer tačka

- tačka u tekstualnom sadržaju



```
<name>  
  <first>John</first>  
  <middle>Fitzgerald Johansen</middle>  
  <last>Doe</last>  
</name>
```

```
xpointer(//middle/text()/point[2]))
```

XPointer opseg

- opseg predstavlja interval između dve tačke, početne i krajnje
- definiše se funkcijama
 - `range-to()`
 - `range()`
 - `range-inside()`
 - `string-range()`

XPointer range()

- parametar funkcije je XPath izraz
- opseg je ono što obuhvata rezultat XPath izraza

```
xpointer(range(//title))
```

```
<novel copyright="public domain">
```

```
  <title>The wonderful wizard of Oz</title>
```

```
  <author>L. Frank Baum</author>
```

```
  <year>1900</year>
```

```
</novel>
```

XPointer range()

- može da vrati i više opsega odjednom

```
xpointer(range(/novel/*))
```

```
<novel copyright="public domain">
```

```
  <title>The wonderful wizard of Oz</title>
```

```
  <author>L. Frank Baum</author>
```

```
  <year>1900</year>
```

```
</novel>
```

XPointer range-inside()

- vraća unutrašnjost izabranog čvora

```
xpointer(range-inside(//title))
```

```
<novel copyright="public domain">  
  <title>The wonderful wizard of Oz</title>  
  <author>L. Frank Baum</author>  
  <year>1900</year>  
</novel>
```

XPointer range-to()

- početna tačka: XPath čvor
- krajnja tačka: parametar funkcije

```
xpointer(//title/range-to(year))
```

```
<novel copyright="public domain">
```

```
  <title>The wonderful wizard of Oz</title>
```

```
  <author>L. Frank Baum</author>
```

```
  <year>1900</year>
```

```
</novel>
```


XPointer range-to()

-

```
xpointer(//title/range-to(//title/text()))
```

```
<novel copyright="public domain">
```

```
  <title>The wonderful wizard of Oz</title>
```

```
  <author>L. Frank Baum</author>
```

```
  <year>1900</year>
```

```
</novel>
```

XPointer string-range()

- operiše nad tekstom dokumenta kada se ukloni sav markup
- pronalazi traženi tekst i to vraća kao rezultat

```
xpointer(string-range(//title, "wizard"))
```

```
<novel copyright="public domain">  
  <title>The wonderful wizard of Oz</title>  
  <author>L. Frank Baum</author>  
  <year>1900</year>  
</novel>
```

XPointer string-range()

- može se navesti offset i dužina

```
xpointer(string-range(//title, "wizard", 5, 4))
```

```
<novel copyright="public domain">  
  <title>The wonderful wizard of Oz</title>  
  <author>L. Frank Baum</author>  
  <year>1900</year>  
</novel>
```