NPRG036: **XML Technologies**

Practical Classes 3 and 4:

XPath

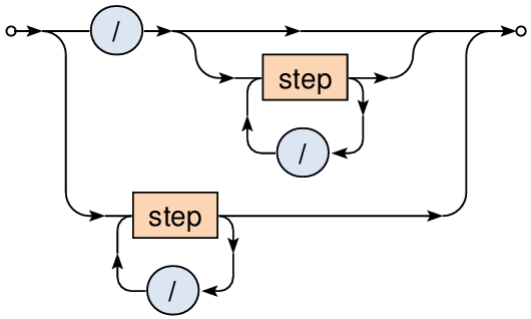
9. 3. 2020

Martin Svoboda
svoboda@ksi.mff.cuni.cz

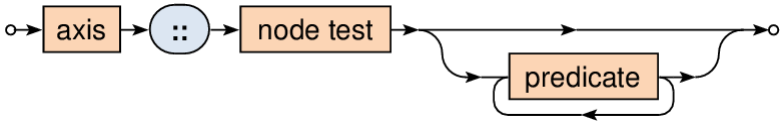
http://www.ksi.mff.cuni.cz/~svoboda/courses/192-NPRG036/

Path Expressions

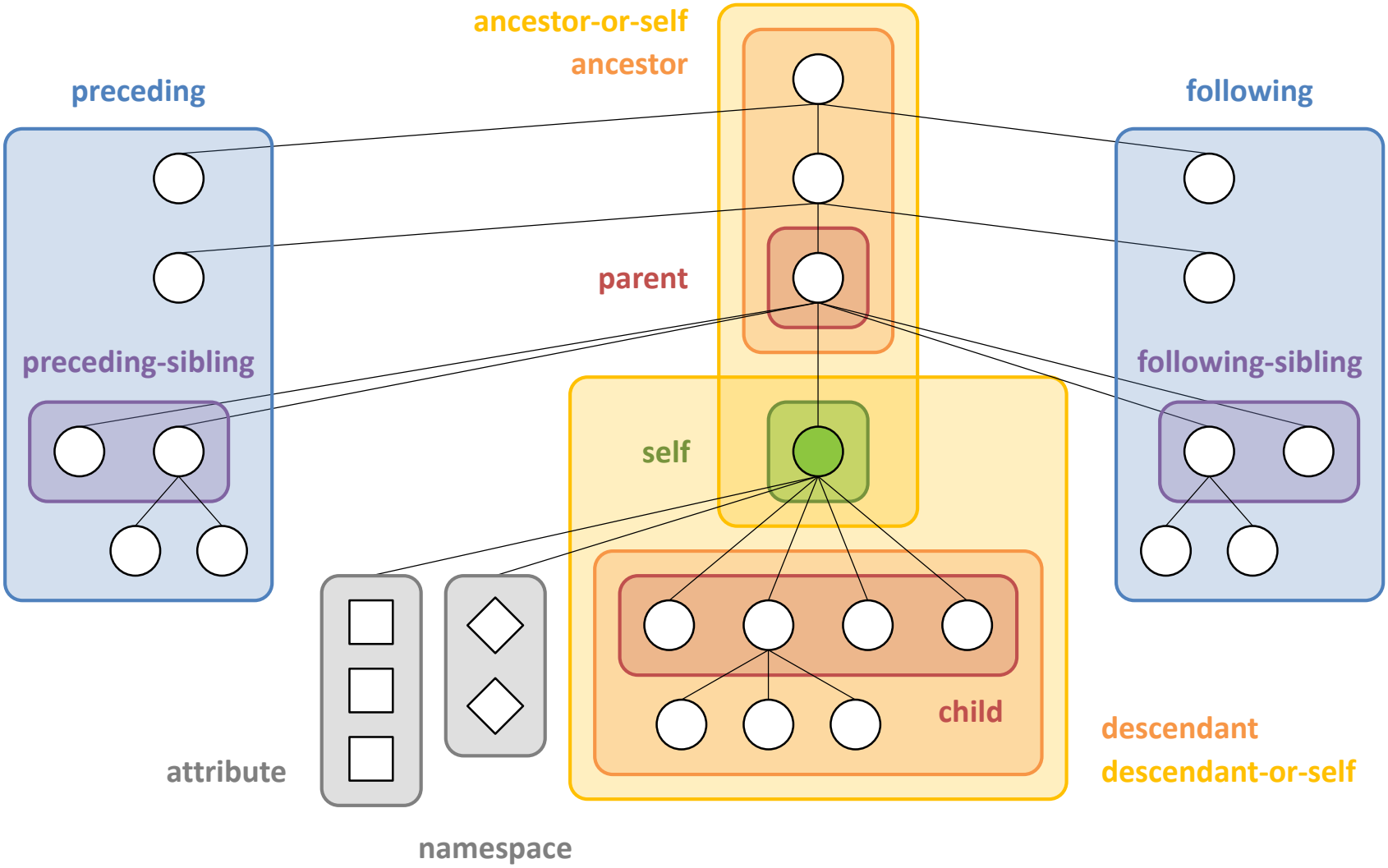
- **Paths**
  - Absolute
    - `/Step`$_1$`/Step`$_2$`/…/Step`$_N$
  - Relative
    - `Step`$_1$`/Step`$_2$`/…/Step`$_N$



- **Steps**
  - `axis::test predicate`$_1$ `predicate`$_2$ …



Axes


ancestor-or-self
ancestor
preceding
following
parent
preceding-sibling
following-sibling
self
child
descendant
descendant-or-self
attribute
namespace

Axes

- **Forward axes**
  - self, child, descendant(-or-self), following(-sibling)
- **Reverse axes**
  - parent, ancestor(-or-self), preceding(-sibling)
- **Attributes**
  - attribute
- **Namespace declarations**
  - namespace

Node Tests

- Tests
  - `node()` – all nodes selected by the axis
  - `text()` – all texts nodes
  - *name* – elements / attributes of the given *name*
  - `*` – all elements / attributes selected by the axis
  - `comment()`
  - `processing-instruction()`

Path Expressions

- **Abbreviations**
  - …/… <=> …/child::…
  - …/@… <=> …/attribute::…
  - …/…. <=> …/self::node()…
  - …/….. <=> …/parent::node()…
  - …//… <=> …/descendant-or-self::node()/…

Predicates

- **Predicates**

- **Conditions**
  - Path expressions: both relative and absolute
  - Comparisons: $= \neq < \leq \geq >$
  - Positions

Functions

- **A few useful functions...**
  - `position(), last()`
  - `count()`
  - `sum(), avg(), min(), max()`
  - `data()`
  - `name()`
  - `distinct-values()`
  - `normalize-space()`
  - …