

Third exercise sheet for the lecture

XML and Programming Languages

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Exercise 7

Give the unabbreviated versions of the following CoreXPath queries, and describe their semantics relative to a context node n :

1. `..[self:: σ]`
2. `../ σ [ancestor-or-self::*/ δ]`
3. `../ σ /ancestor-or-self::*` ◇

Exercise 8

Discuss the semantic equivalence or inequivalence of the path expressions

`/descendant::test[q]`

and

`//test[q]`

for arbitrary $test$ and q , using the formal semantics. ◇

Exercise 9

In XPath, it is possible to have several filter expressions in a single navigation step, i.e., “`axis::test[q_1] ··· [q_k]`” instead of just “`axis::test[q]`”. The semantics is given by successive filtering in left-to-right order.

1. Why is this feature superfluous in CoreXPath, and thus has been omitted from our formalization? ◇
2. What is the situation for full XPath? ◇

Exercise 10

Assume we wanted to allow unions “ \cup ” anywhere in path expressions, rather than just at top-level. What changes to the CoreXPath syntax and the semantic functions would be necessary? Would there be an expressivity gain? ◇