

Reasoning about Web Programs

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Local Reasoning

Hoare Logic: cannot do modular reasoning about heap programs

Separation logic: local reasoning about heap programs

O'Hearn, Reynolds, Yang: CSL'01

Applications: reasoning about Microsoft device-driver code (10K lines of code) and parts of Linux (1M lines of code)

Context Logic: abstract local reasoning about libraries for manipulating structured data Calcagno, G., Zarfaty: POPL'05

Applications: a formal specification of DOM Core Level 1 Smith's thesis; reasoning about small mashup programs G., Smith and Wright: VS-theory'10

Reasoning about Client-side Web Programs

Formal specification of DOM, local reasoning about small mashup programs [Imperial gang](#)

Operational semantics for Javascript [Maffeis, Mitchell, Taly: APLAS'08](#)

Aim: full reasoning about Javascript/DOM programs [G., Maffeis, Smith](#)

Types for a fragment of the XQuery Update Facility 1.0

[Benedict, Cheney DBPL'09](#)

Reasoning about Linux path expressions [Ntzik, M.Sc project'10](#)

Aim: full reasoning about client-side web programs