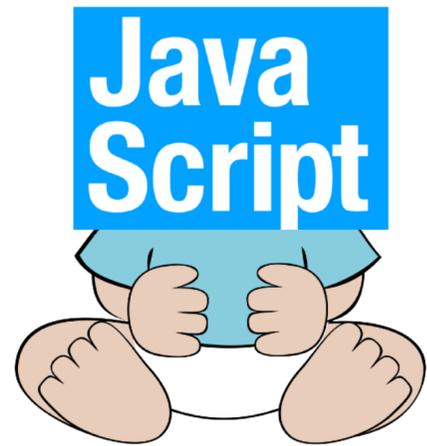


# **An Adventure with Client-Side XSLT to an Architecture for Building Bridges with Javascript**

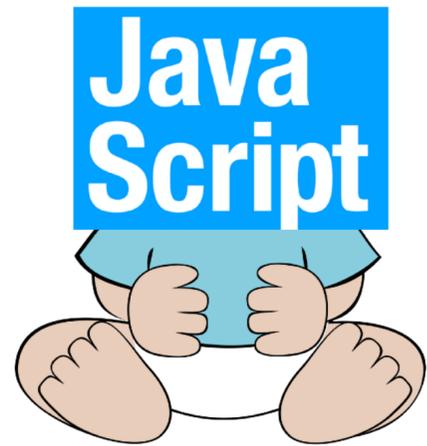
**Balisage 2018**

Katherine Ford  
Will Thompson  
*O'Connor's*

# 1999



# 1999



XSLT

Java  
Script

Java  
Script

Java  
Script

Java  
Script

# Java Script

XSLT

**Java  
Script**

**XSLT**

Java  
Script



XSLT

# Forms for Attorneys

TEXAS FAMILY LAW FORMS  
CHAPTER 4. SUIT FOR DISSOLUTION WITHOUT CHILDREN  
FORM 4D:1 DIVORCE – FINAL DECREE



### III. JURISDICTION

4. The Court finds that it has jurisdiction over this suit and the parties and that all persons entitled to citation were properly cited. The Court further finds that {28 at least 60 days/less than 60 days} have elapsed since the suit was filed. {See Tex. Fam. Code §6.702(a); O'Connor's Fam. Law Handbook, "Basis for jurisdiction," ch. 3-A, §16.4.6, p. 268.}

{CHOOSE ONE OF THE FOLLOWING IF APPLICABLE}

- A The Court waives the 60-day waiting period to render a final judgment for divorce because {29 name of respondent} has {30 finally been convicted of/received deferred adjudication for} an offense involving family violence against {31 name of petitioner}/a member of {name of petitioner}'s household}. {See Tex. Fam. Code §6.702(c)(1).}
- B The Court waives the 60-day waiting period to render a final judgment for divorce because there is an active {32 protective order under Texas Family Code title 4/magistrate's order for emergency protection} based on a finding of family violence committed by {33 name of respondent} during the marriage. {See Tex. Fam. Code §6.702(c)(2).}

### IV. RESIDENCY & DOMICILE

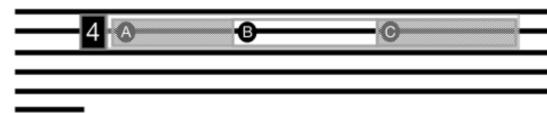
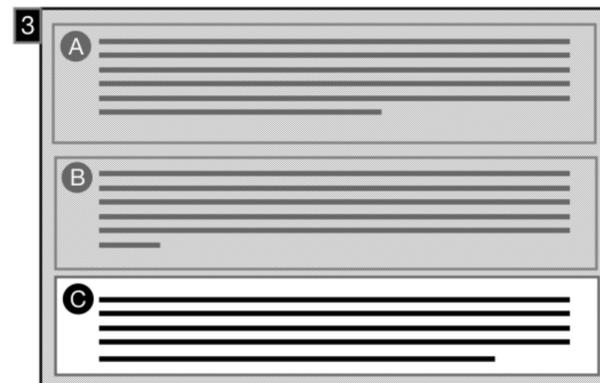
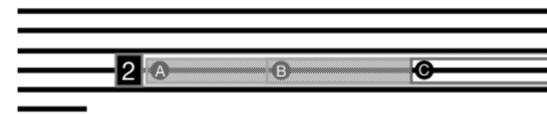
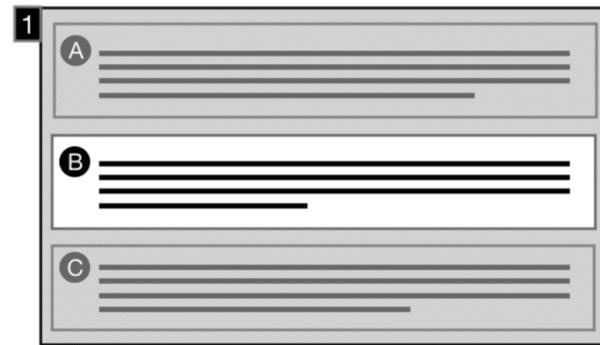
5. The Court finds that

{CHOOSE ONE OF THE FOLLOWING}

- A {34 name of petitioner} and {35 name of respondent} were domiciled in Texas for the six months before suit was filed and {36 name of petitioner or respondent} was a resident of {37 county} for the 90 days before suit was filed. {See Tex. Fam. Code §6.301.}
- B {38 name of petitioner} was domiciled in Texas for the six months before suit was filed and was a resident of {39 county} for the 90 days before suit was filed. {See Tex. Fam. Code §6.301.}
- C {40 name of respondent} was domiciled in Texas for the six months before suit was filed and was a resident of {41 county} when suit was filed. {See Tex. Fam. Code §6.302.}
- D {42 name of petitioner or respondent} is a {43 member/spouse of a member} of the armed forces {44 add if applicable: and accompanied {his/

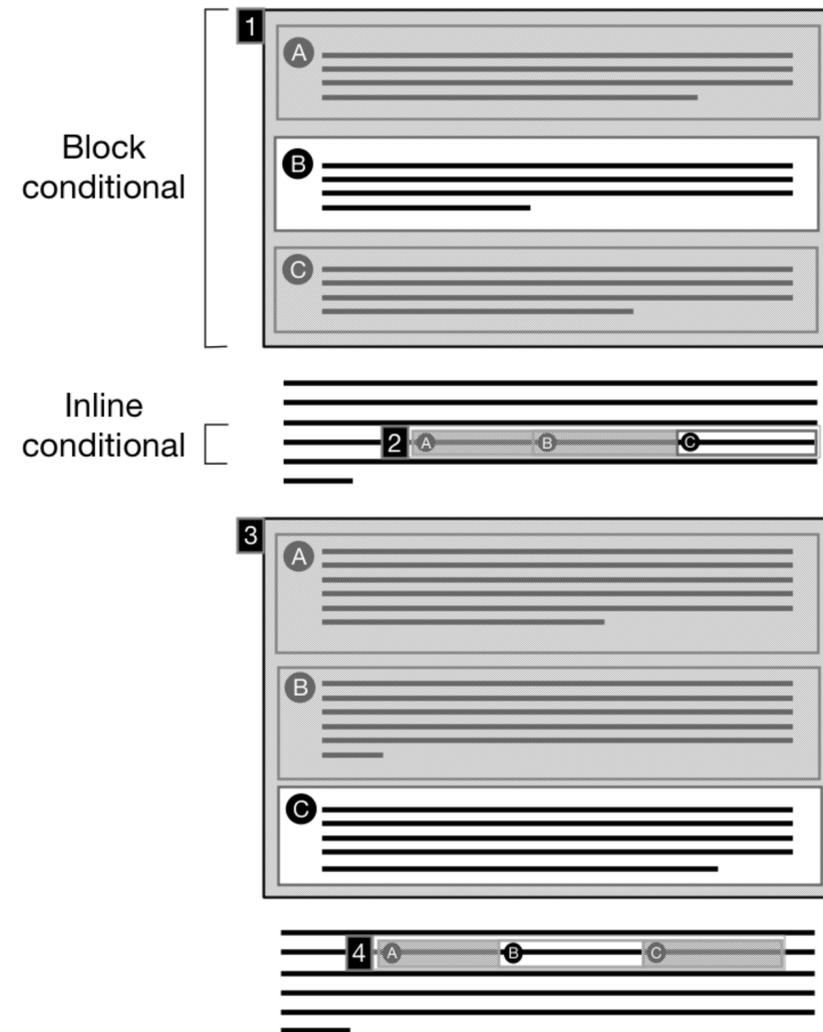
# User Interface

## WYSIWG



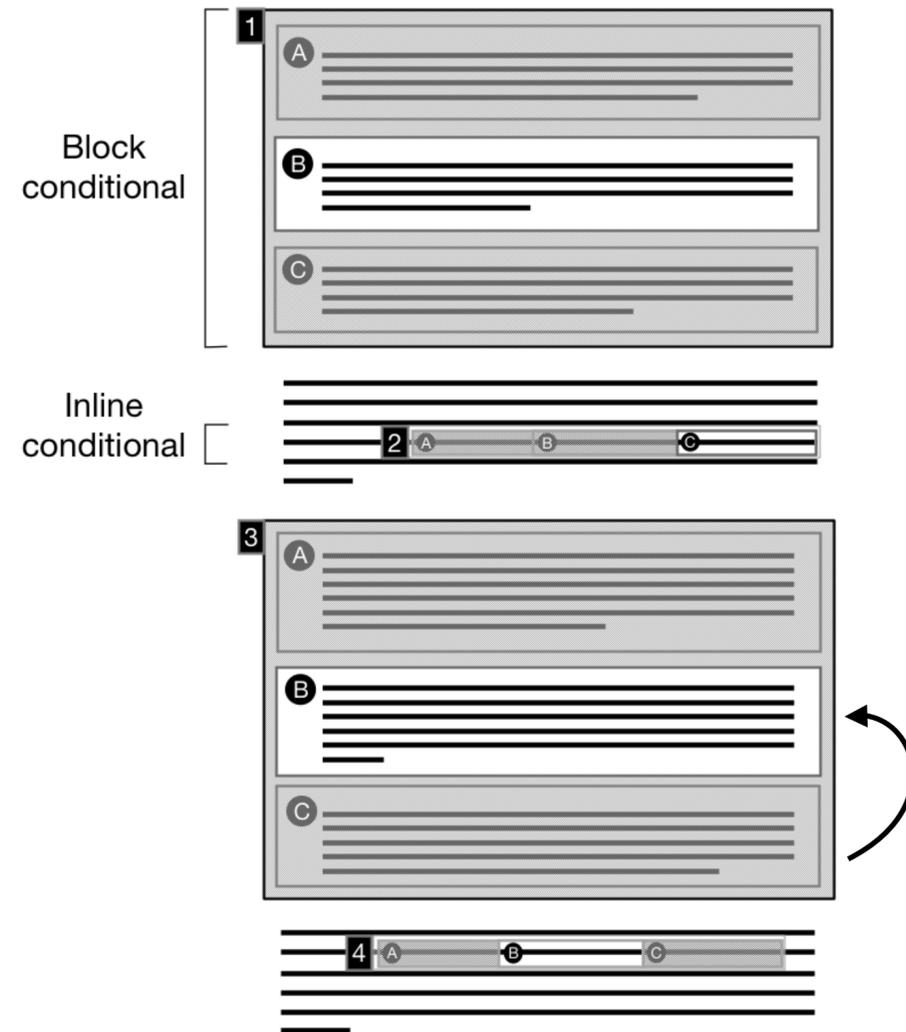
# User Interface

## WYSIWG



# User Interface

## WYSIWG

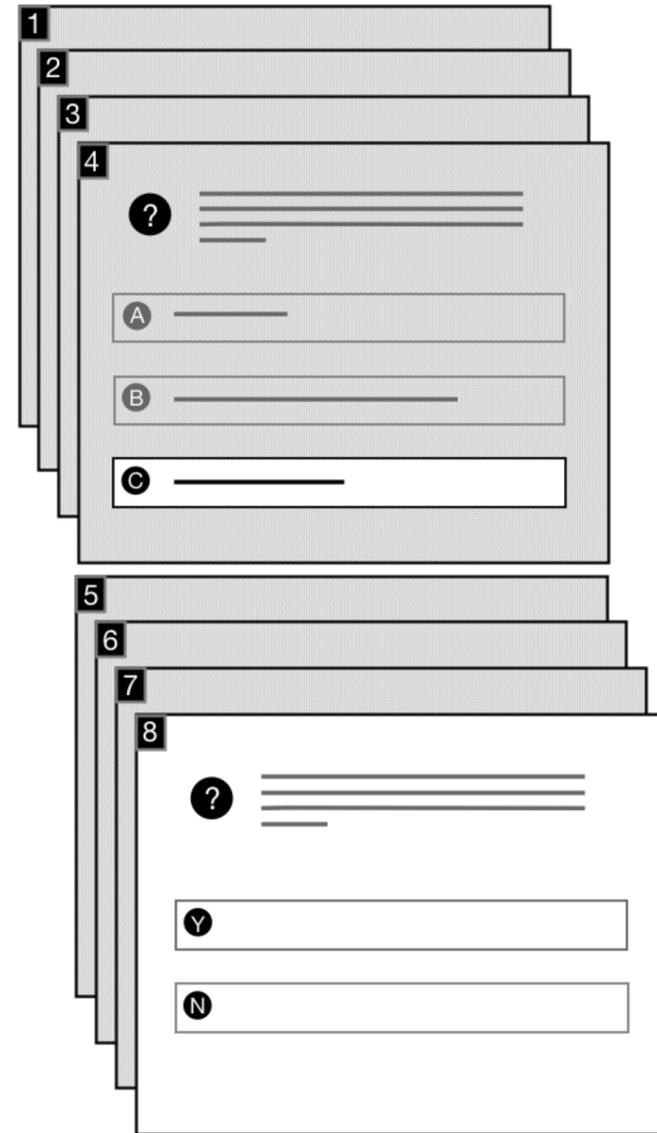


# User Interface

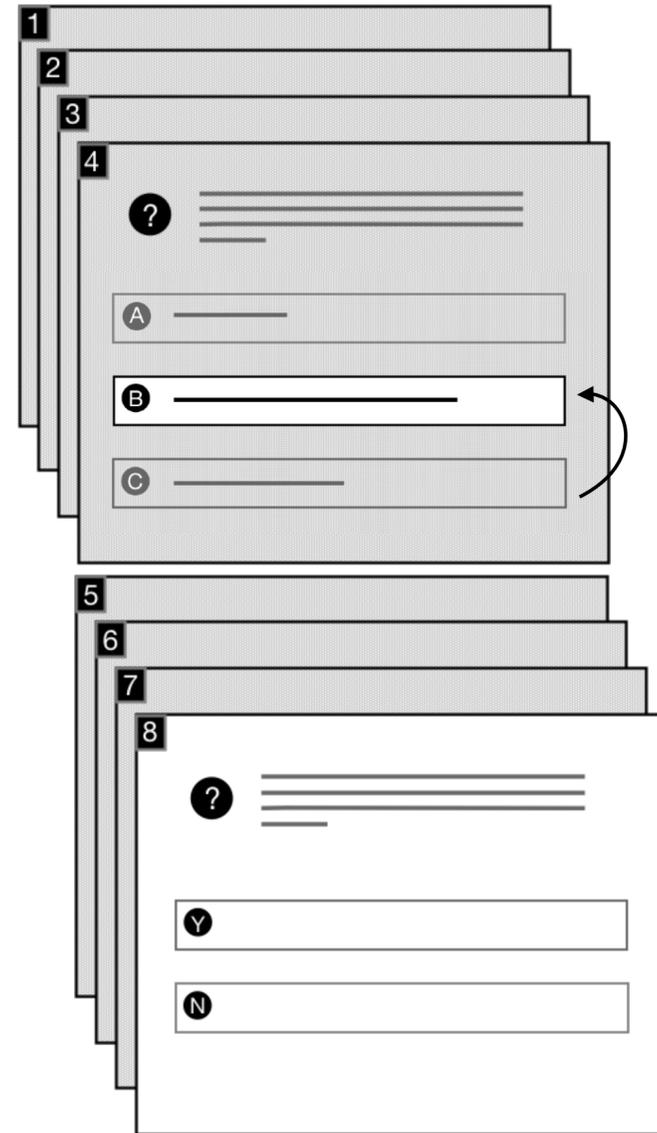
## WYSIWG



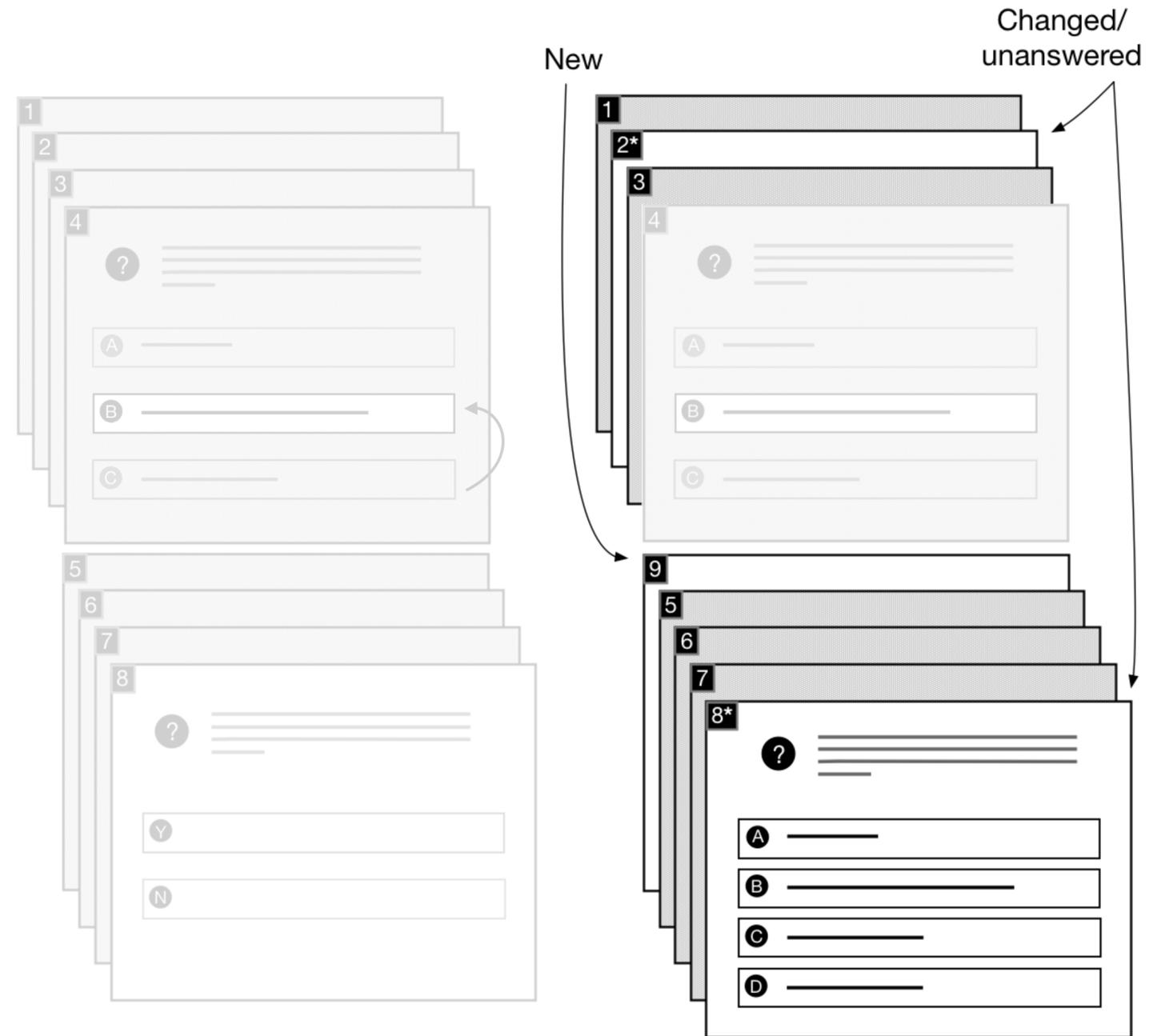
# User Interface Wizard



# User Interface Wizard



# User Interface Wizard

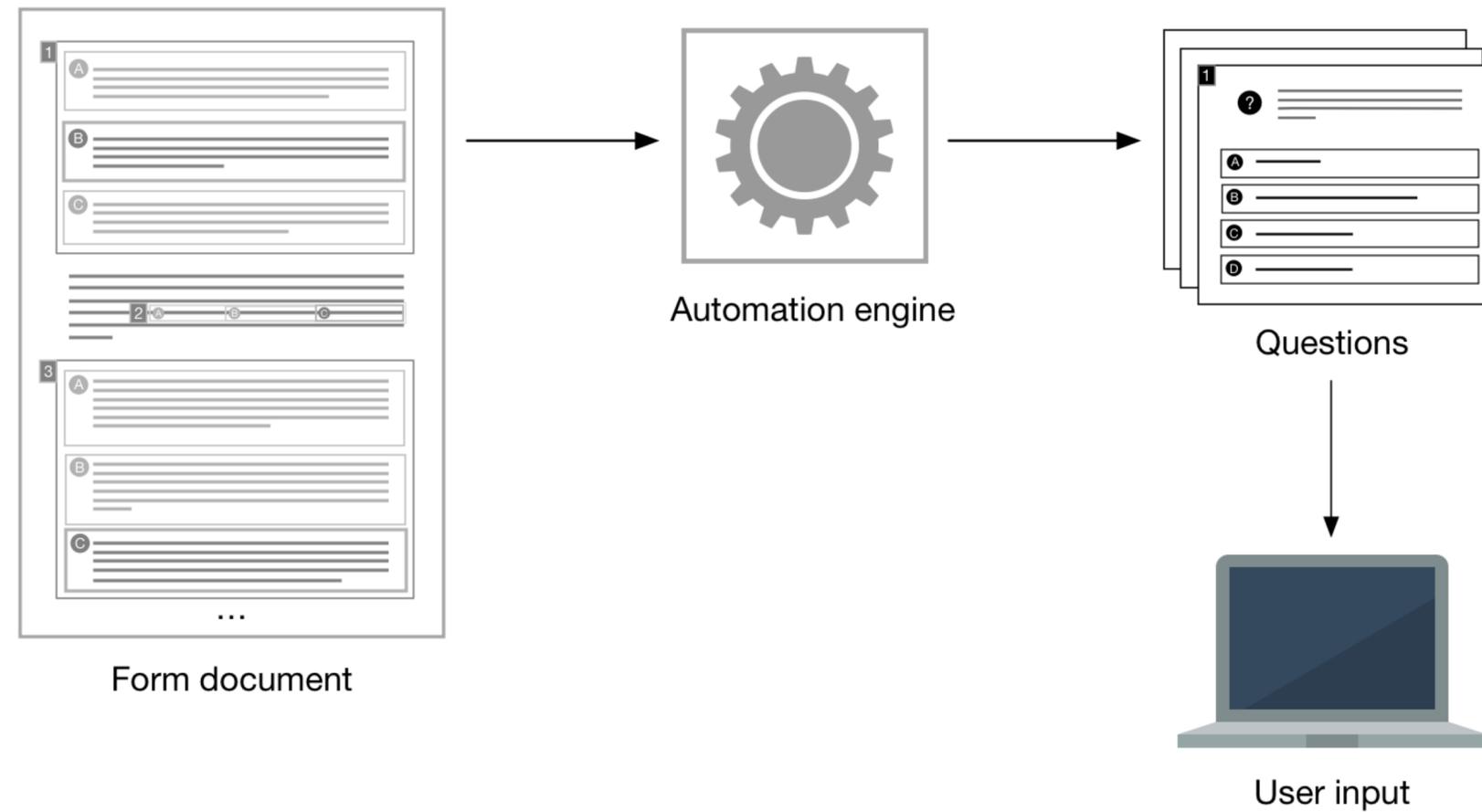


# User Interface Wizard



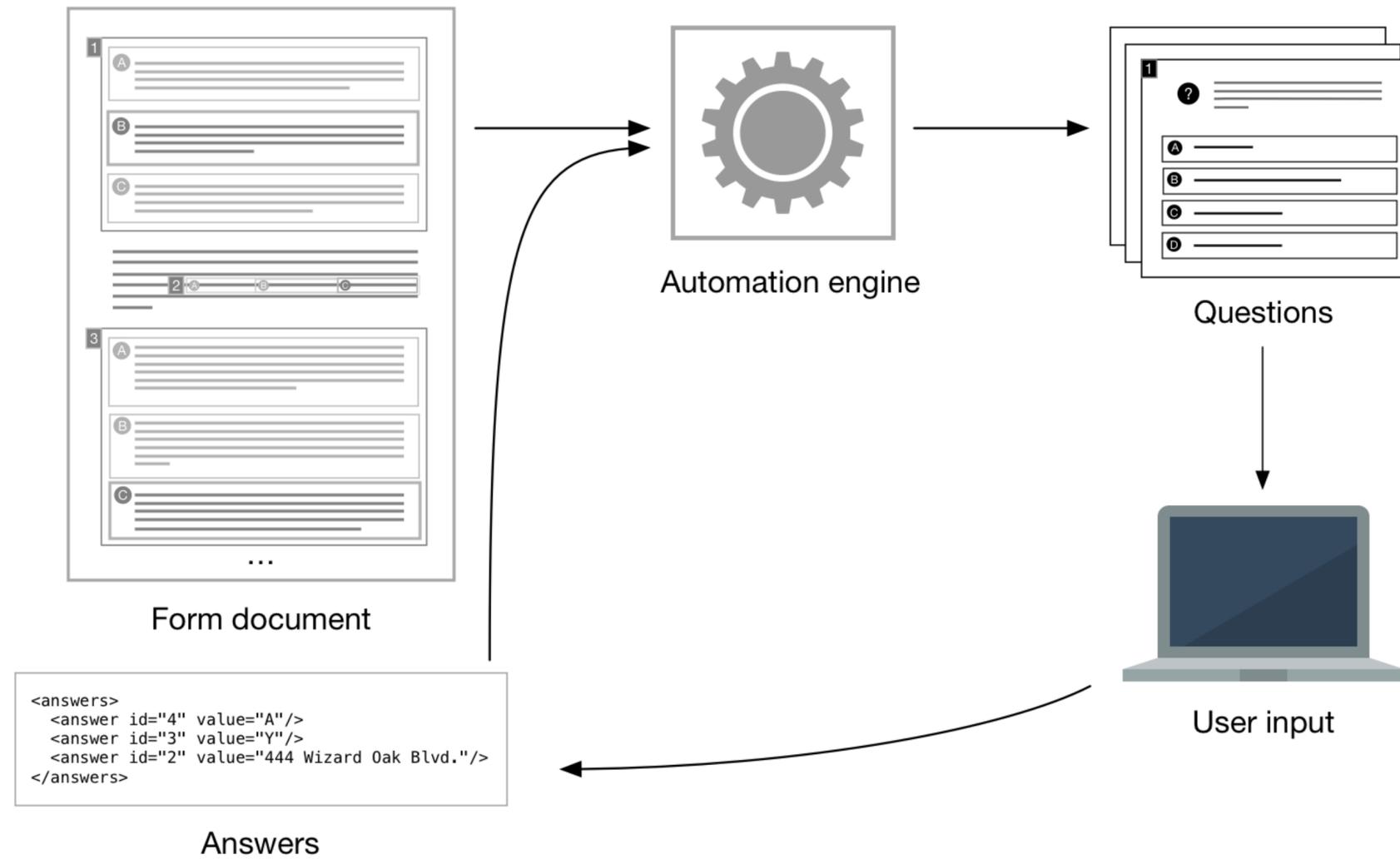
# User Interface

## Automation architecture



# User Interface

## Automation architecture



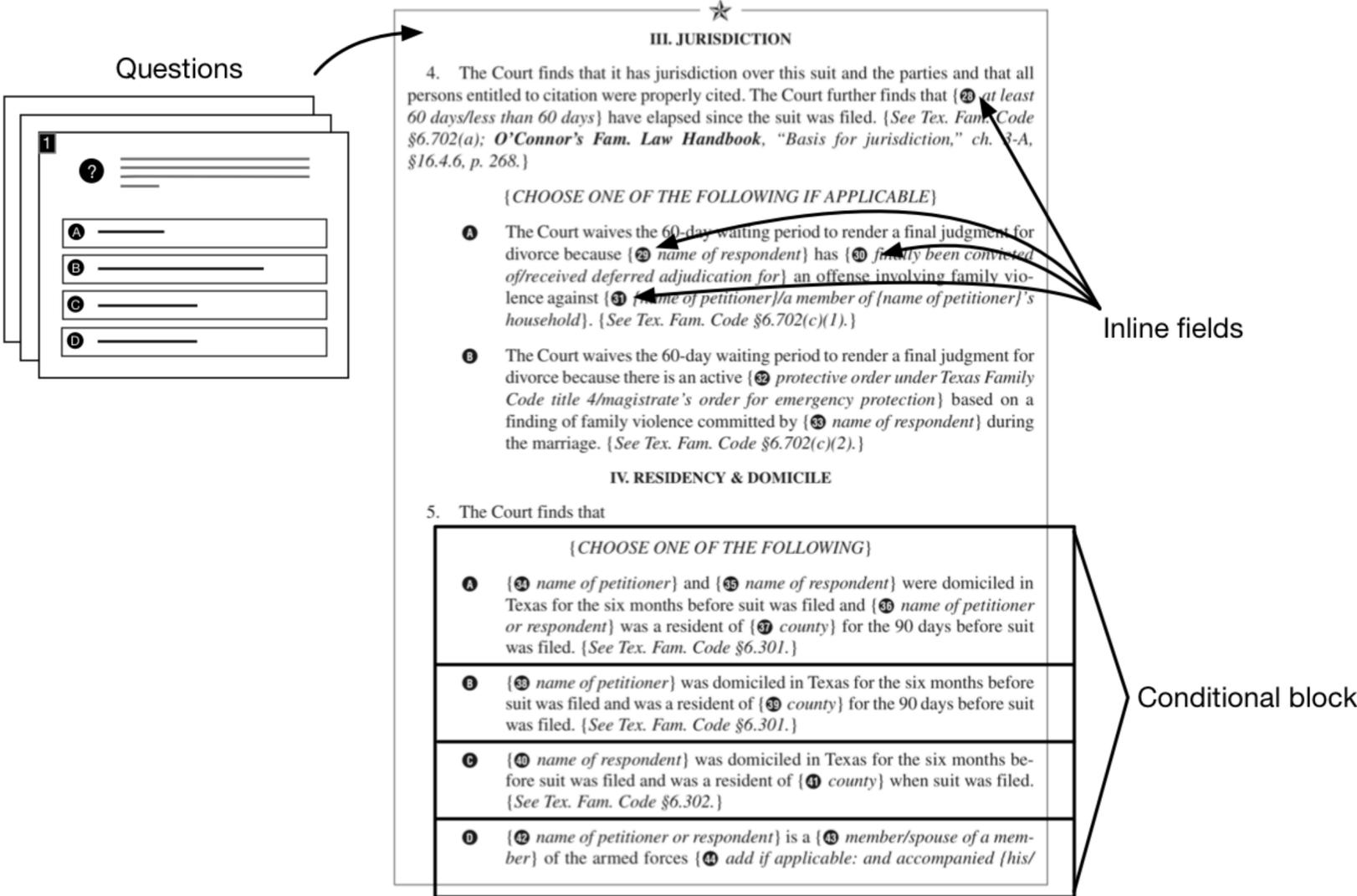
# Requirements

- *Authoring system integration*
- *Online product integration*
- *UX/UI consistency*
- *Feasible*

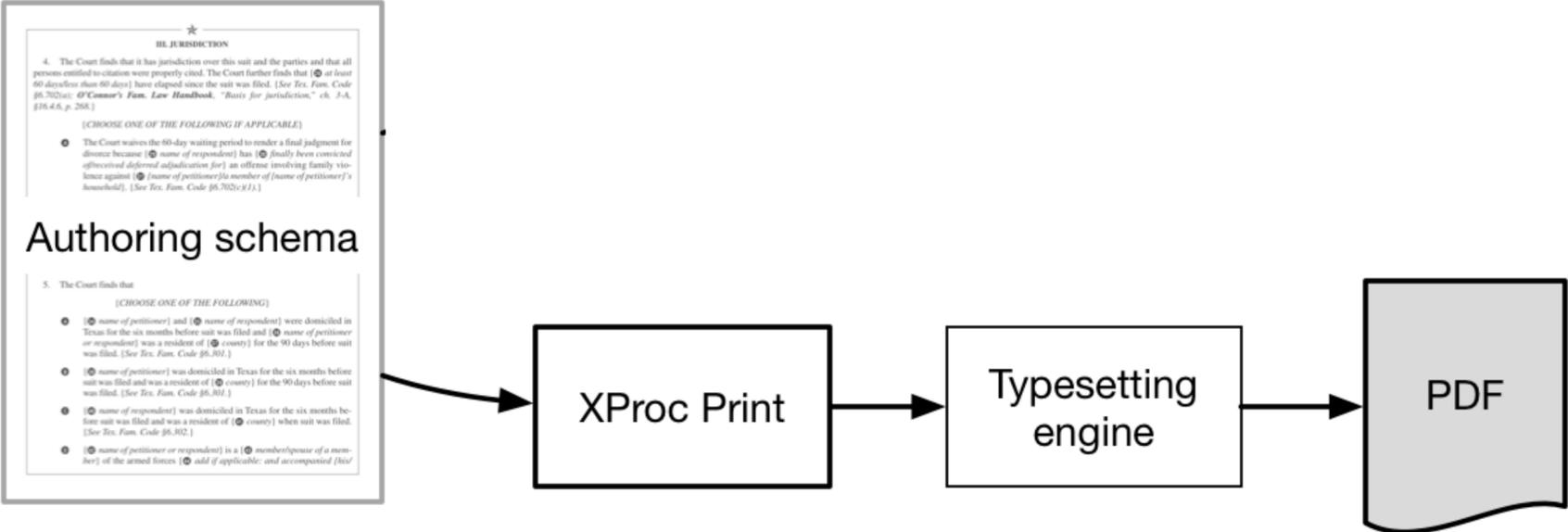
***A Third-party solution***

# Implementation

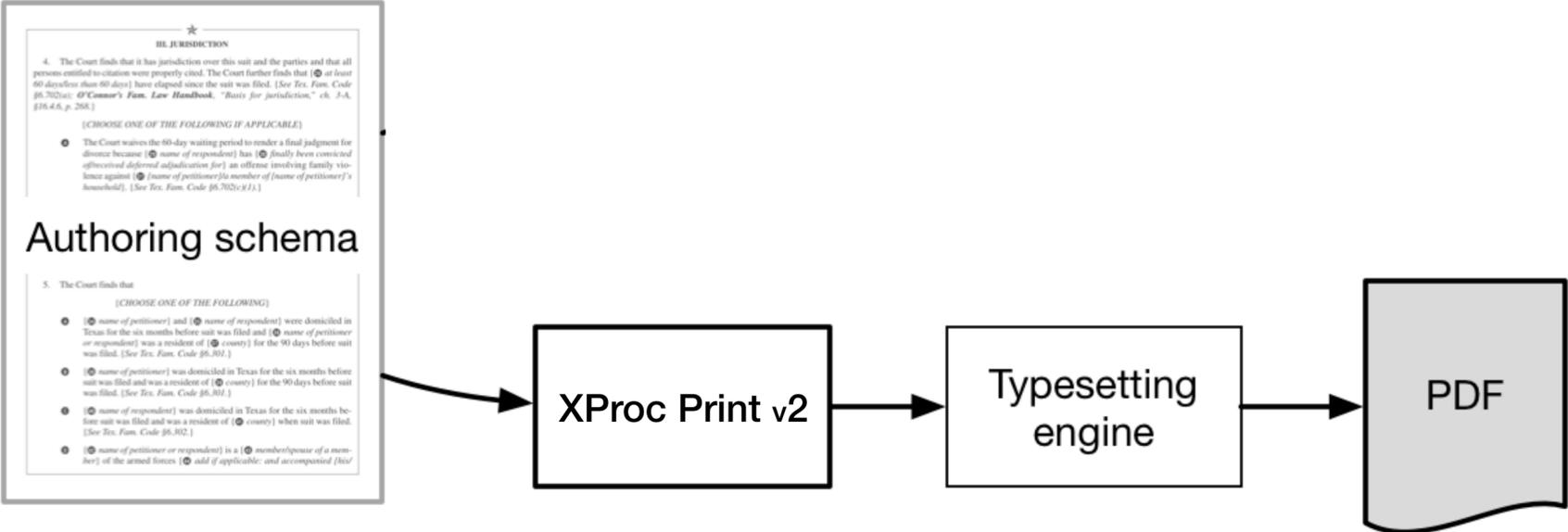
## Hybrid schema



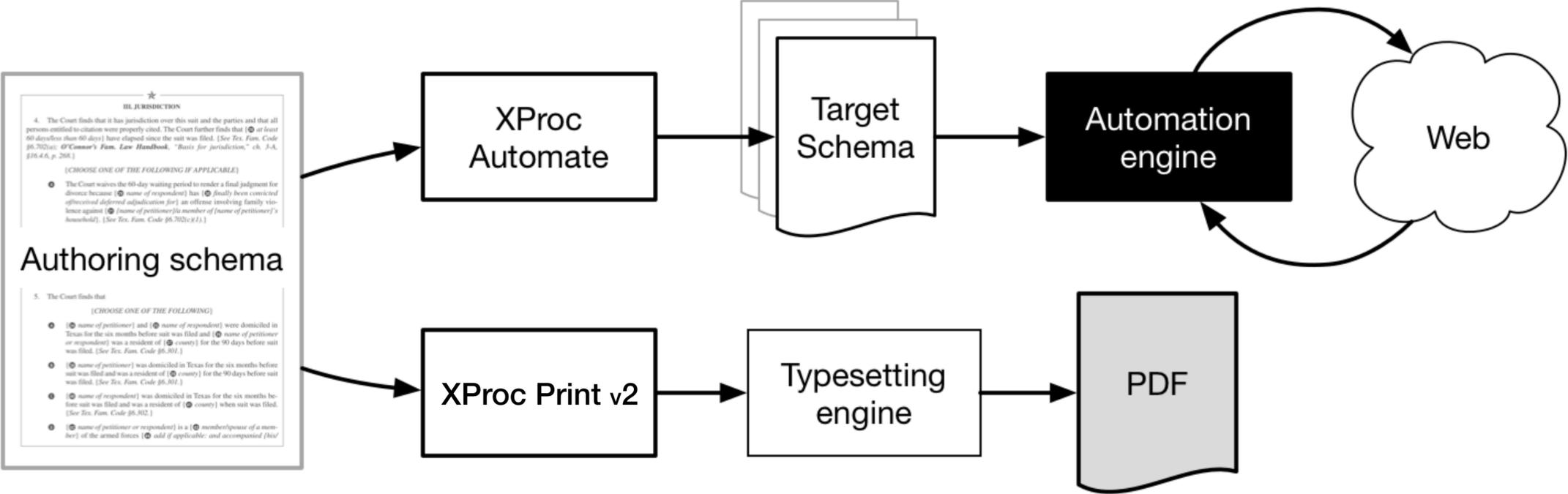
# Implementation Pipelines



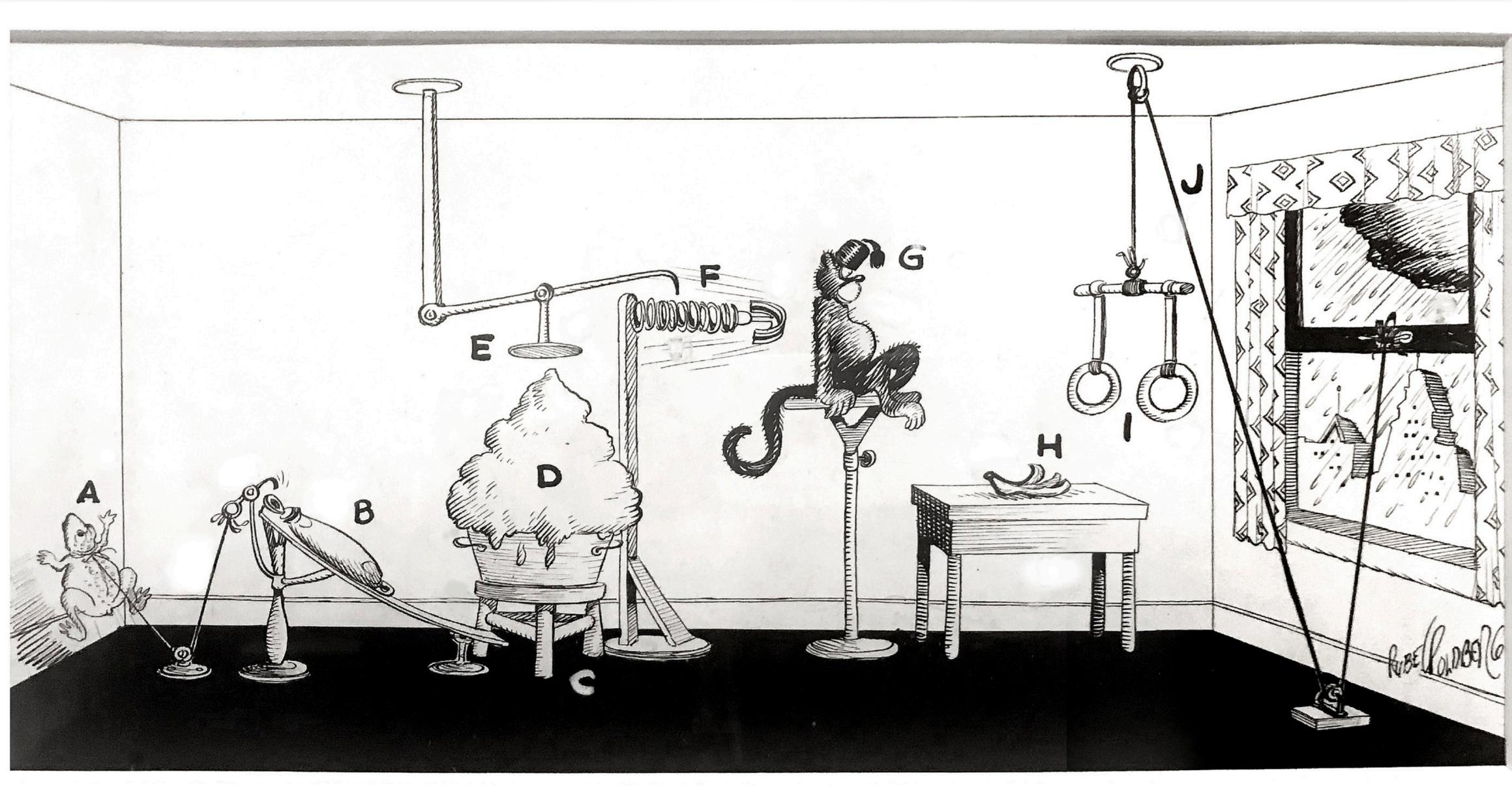
# Implementation Pipelines



# Implementation Pipelines



# Implementation Layers



# ***A New Approach***

# Refined Goals

- *Portable*
- *Client-side processing*
- *Low-dependency*
- *JavaScript UI*

# **XSLT Implementation**

## **Client-side options**

- **frameless.io, Saxon-CE, Saxon-JS**
- **Browser-native XSLT 1.0?**

# XSLT Implementation

## Desktop testing

	Edge 41	IE 11 [10]	Chrome 66 (desktop)	Firefox 59 (desktop)	Safari 11 (desktop)
document()	Yes	Yes	No	Yes	No
xsl:include	Yes	Yes	Yes	Yes	No
node-set() namespace	msxsl	msxsl	exsl	exsl	exsl
xsl:message	No	No	No	No	No
<i>Non-string stylesheet parameters</i>	No	Yes	No	Yes	No

# XSLT Implementation

## Mobile testing

	Chrome 65 (Android)	Firefox 59 (Android)	Firefox 11 (iOS)	Safari 11 (iOS)
document()	No	Yes	No	No
xsl:include	Yes	Yes	No	No
node-set() namespace	exsl	exsl	exsl	exsl
xsl:message	No	No	No	No
<i>Non-string stylesheet parameters</i>	No	Yes	Yes	No

# XSLT Implementation

## Limitations

**EASIER**

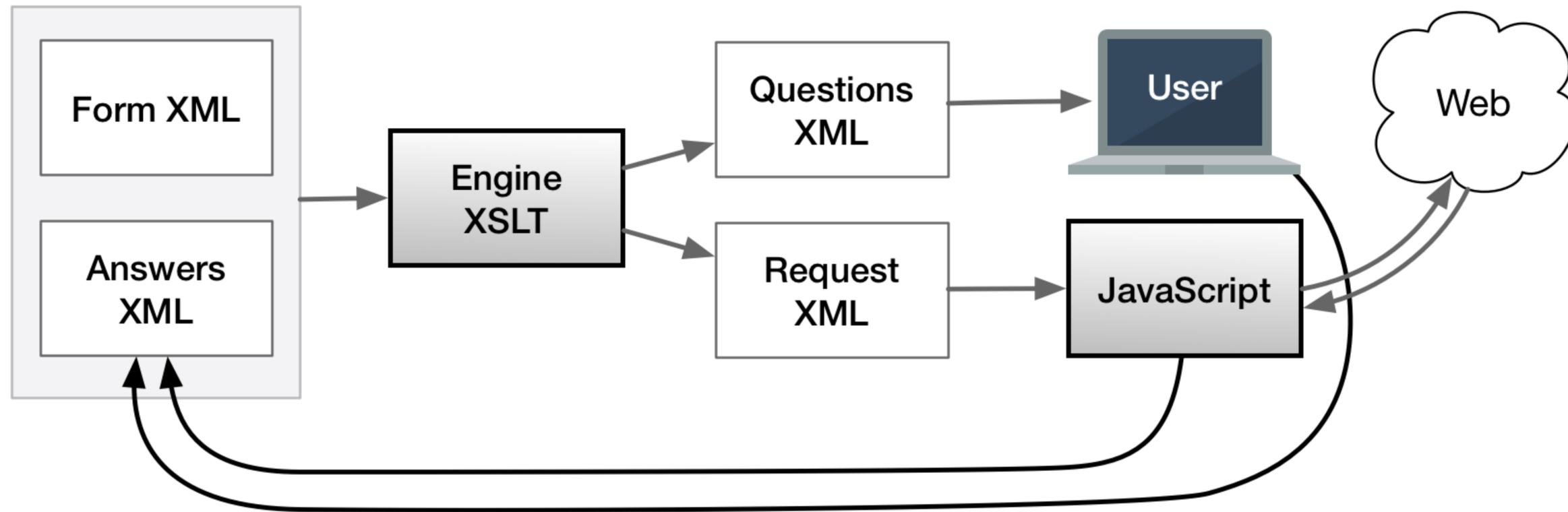
- *Weak string processing features*
- *Weak grouping tools*
- *No `xsl:include`*

**HARDER**

- *No debugging tools*
- *No `document ( )`*
- *String external parameters only*

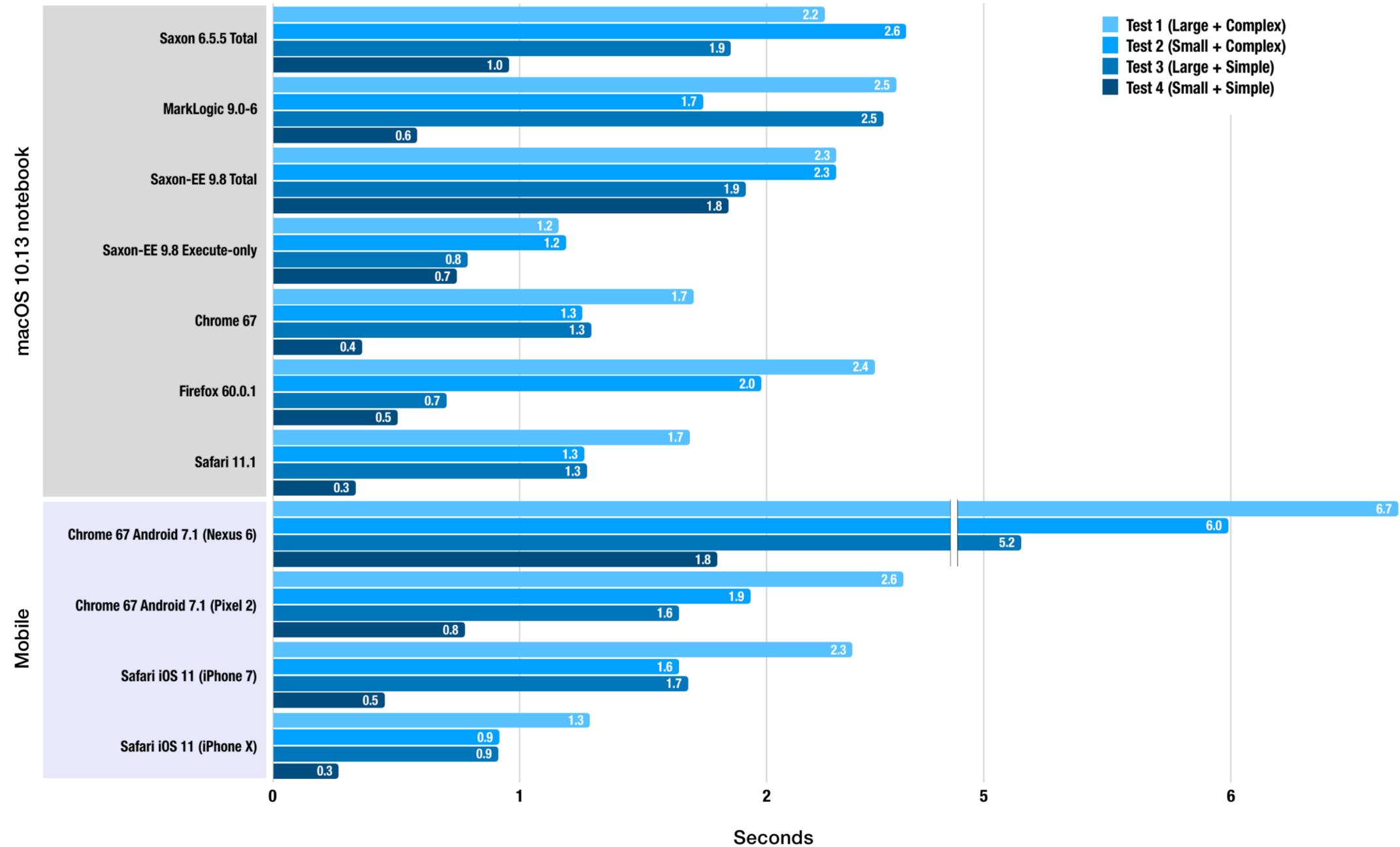
# XSLT Implementation

## Message passing



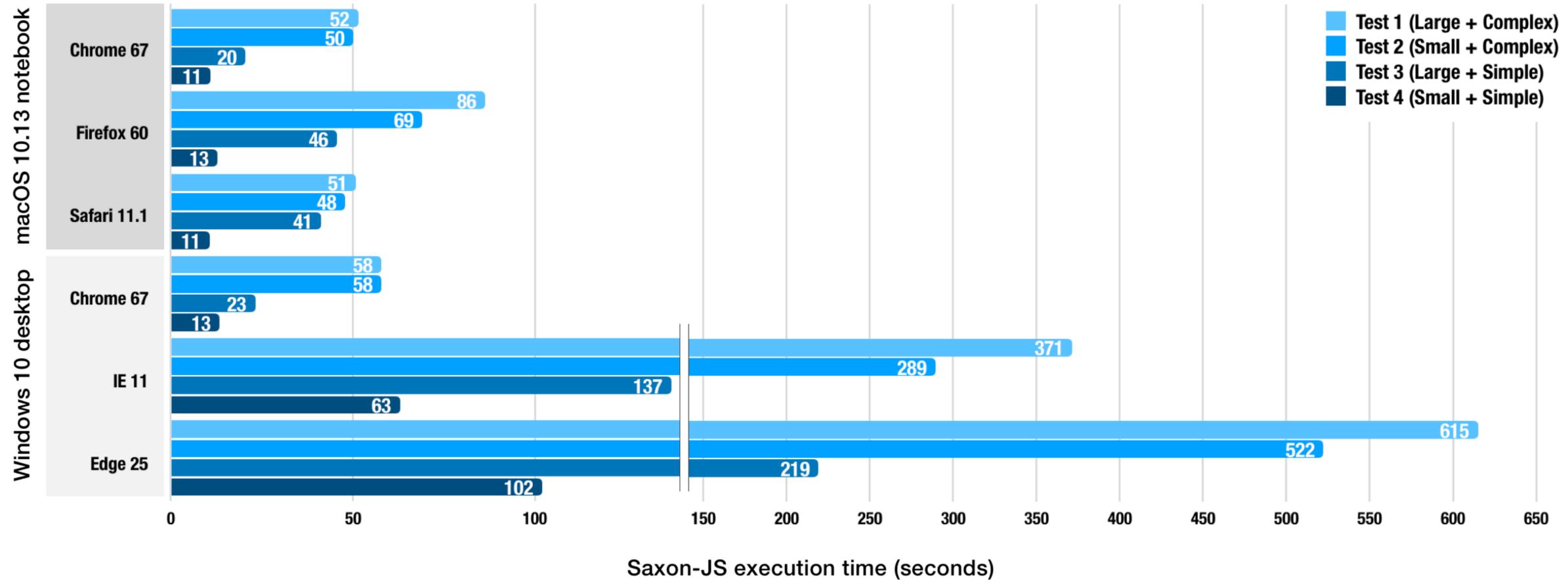
# XSLT Implementation

## Native XSLT performance



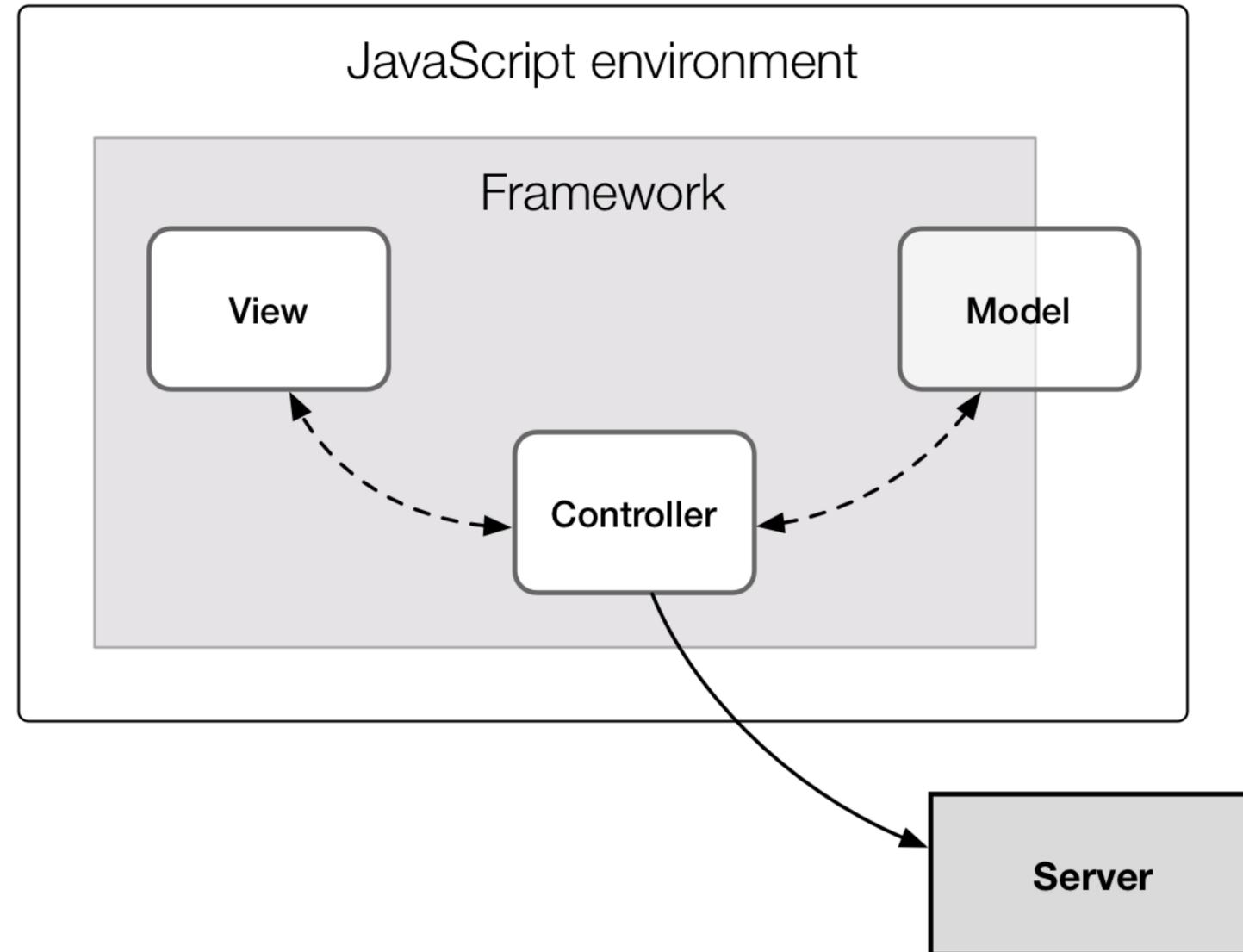
# XSLT Implementation

## Saxon-JS performance



# JavaScript

## Data-binding



# JavaScript virtualDOM

- *Tracks content in the DOM*
- *Fast diff-optimized data structure*
- *Optimizer converts diffs into patches*

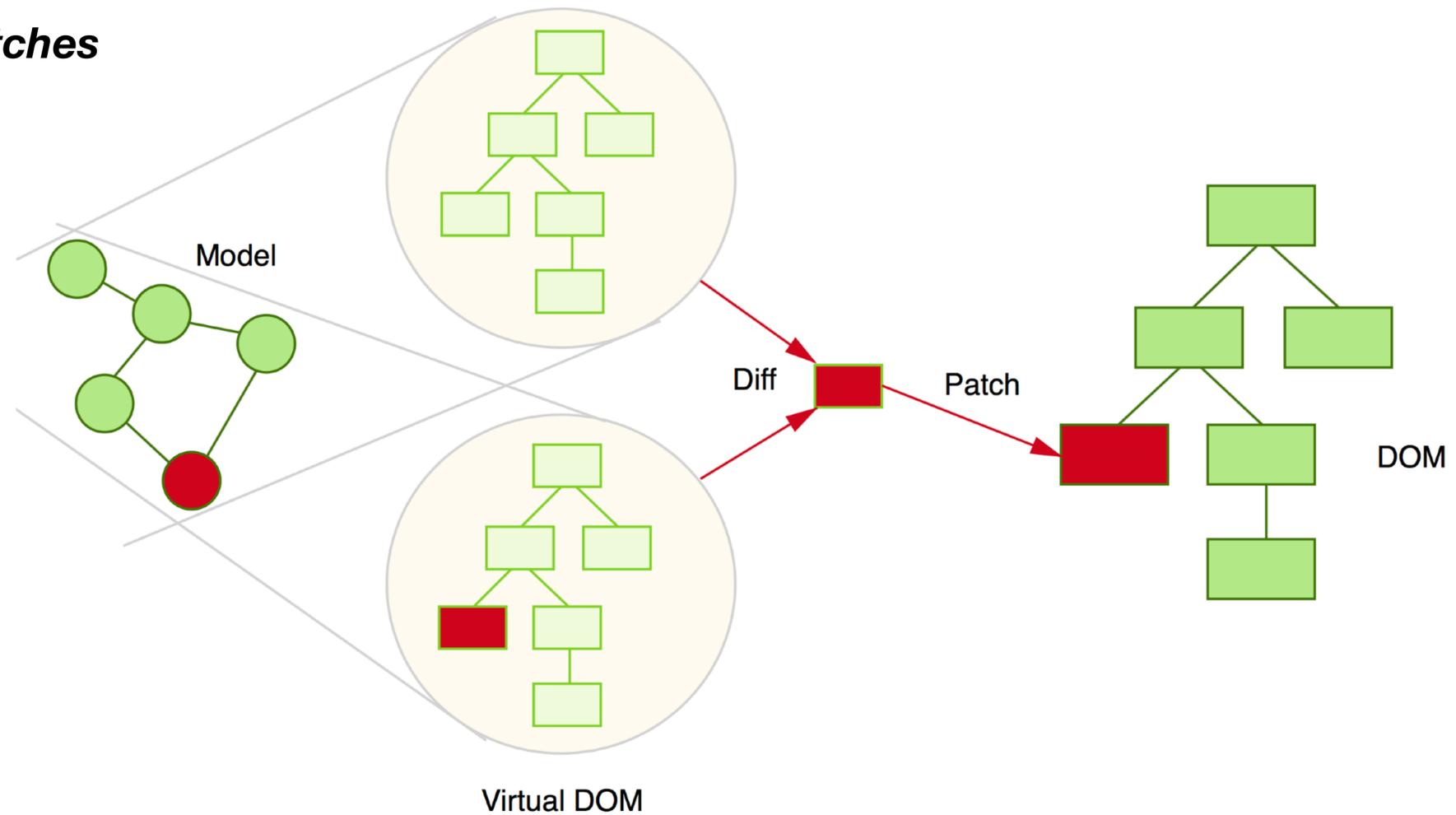


Image: <http://teropa.info/blog/2015/03/02/change-and-its-detection-in-javascript-frameworks.html>

# JavaScript virtualDOM

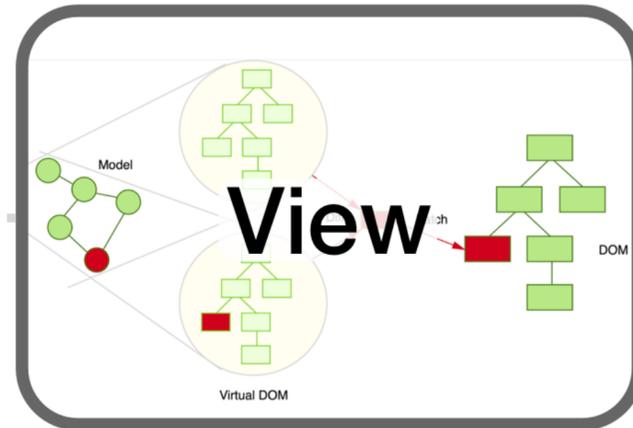
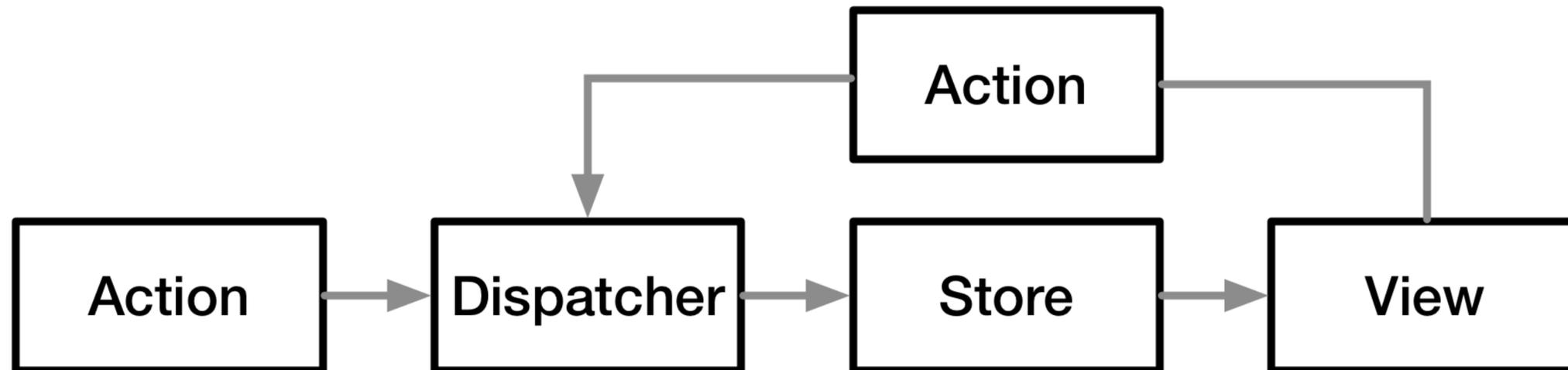


Image: <http://teropa.info/blog/2015/03/02/change-and-its-detection-in-javascript-frameworks.html>

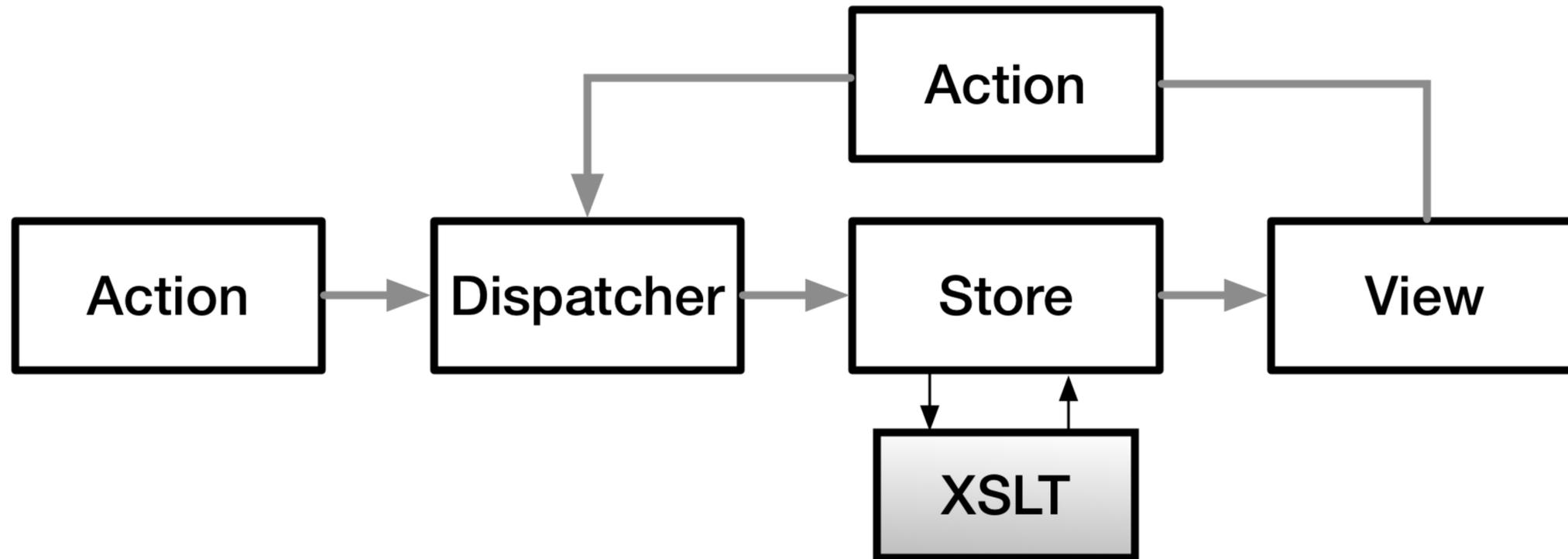
# JavaScript

## Application architecture



# JavaScript

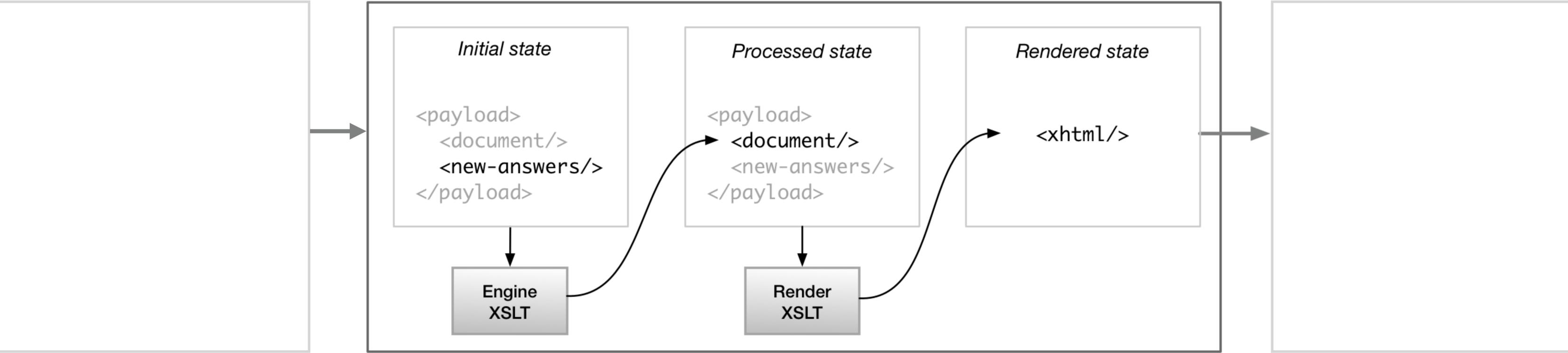
## Application architecture



# JavaScript

## Application architecture

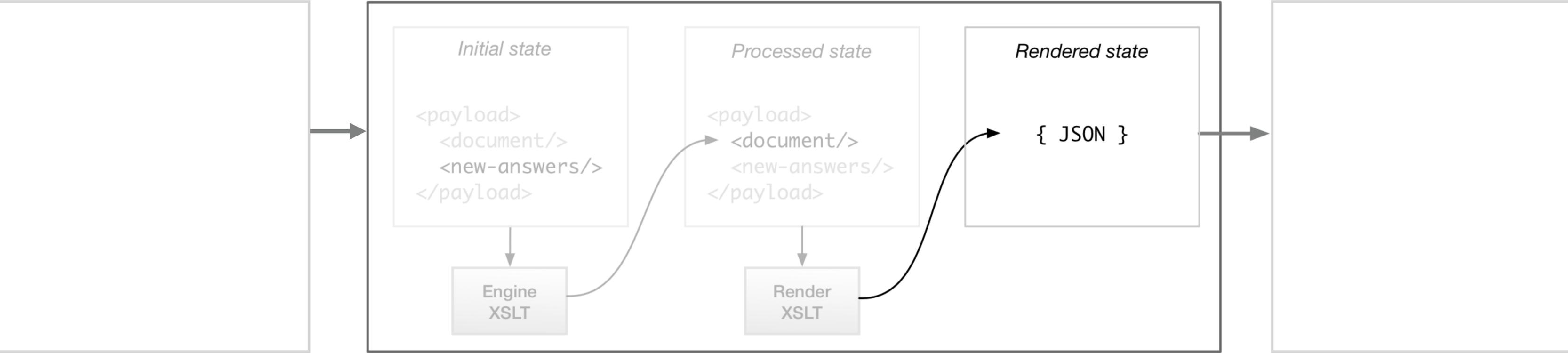
Store



# JavaScript

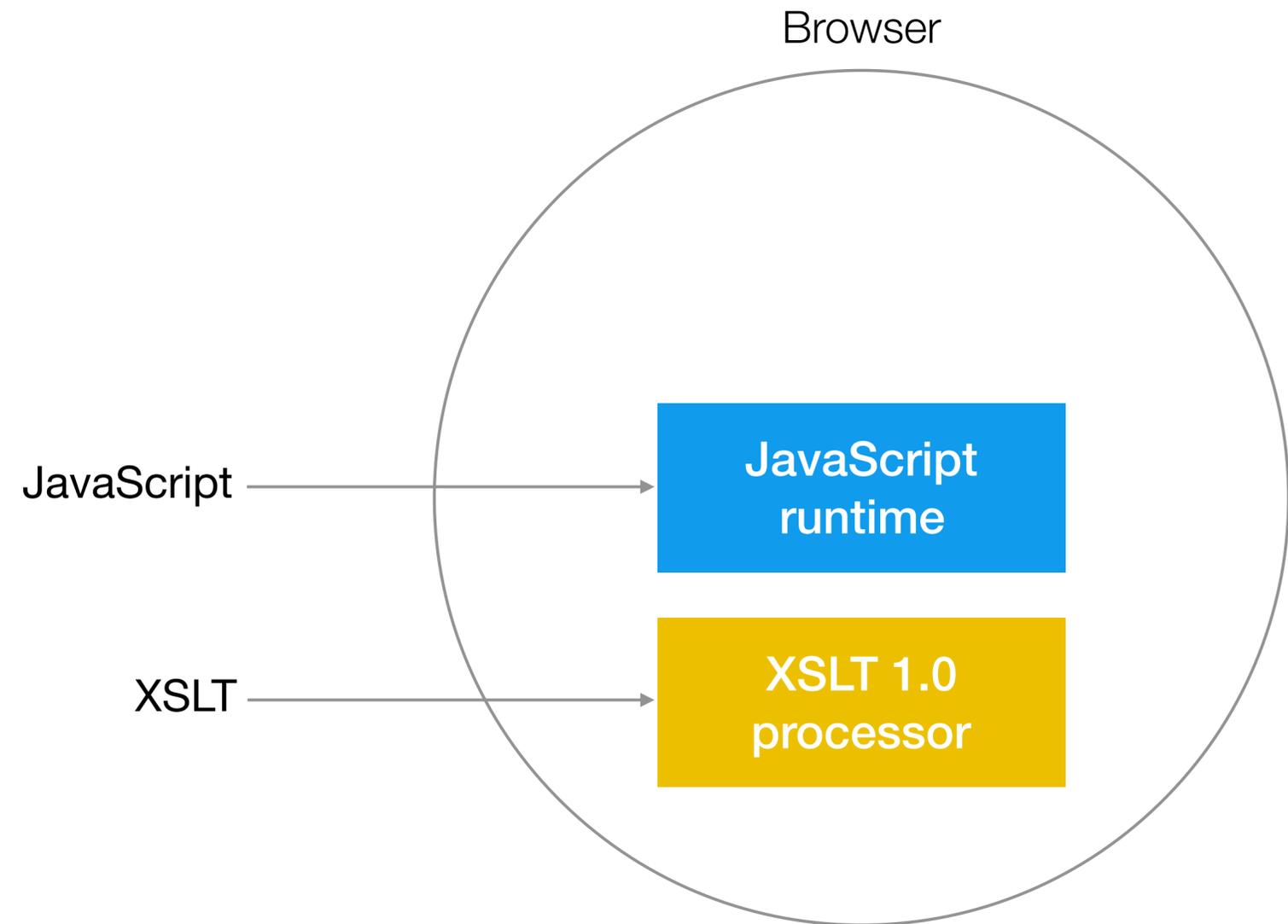
## Application architecture

### Store



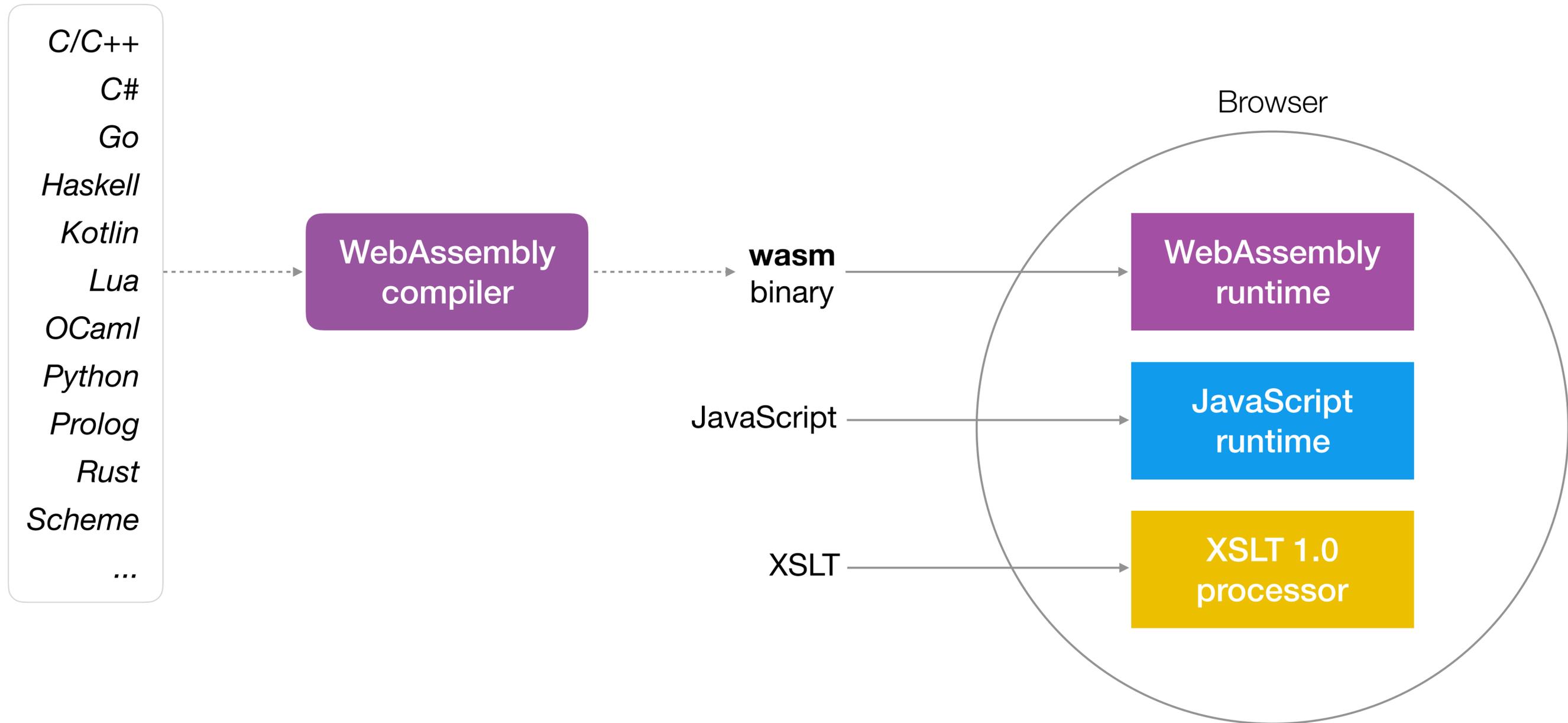
# WebAssembly

## The future

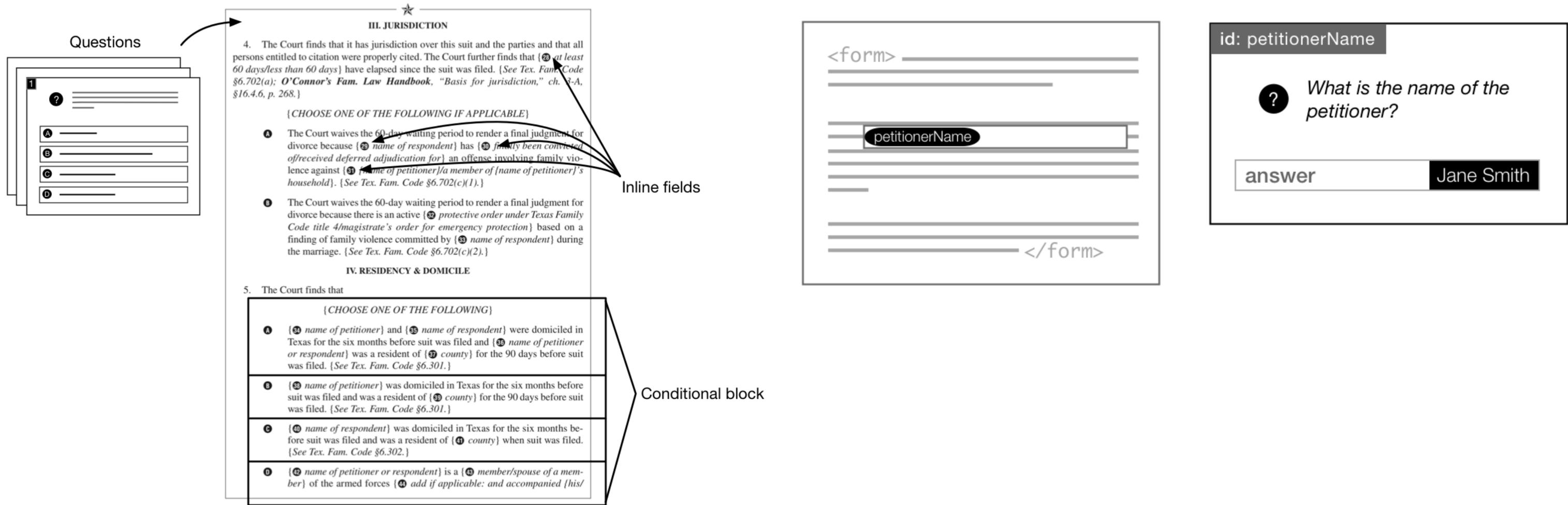


# WebAssembly

## The future



# Redesign Model



# Redesign

## Visibility dependency

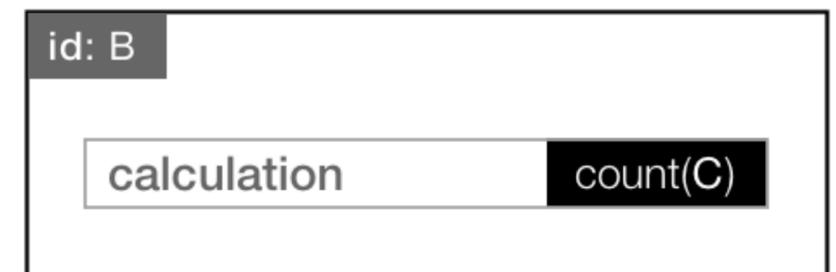
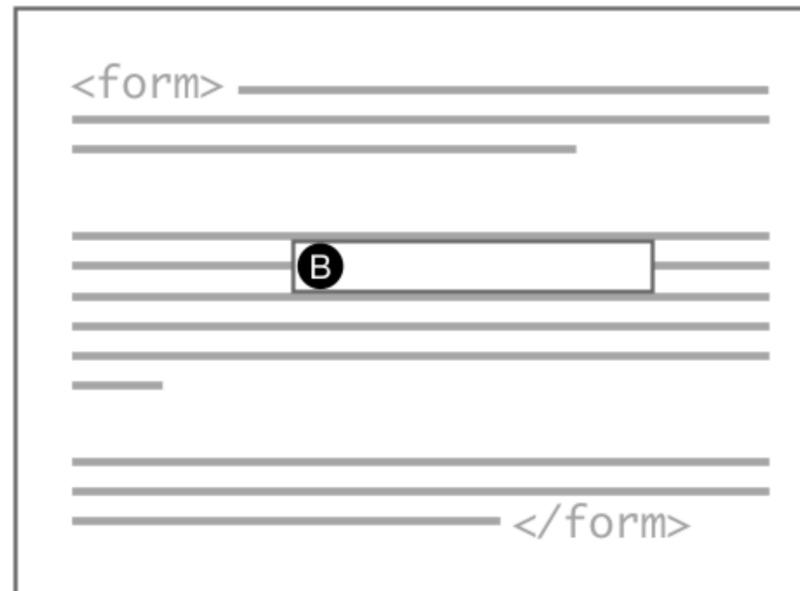
- *Question B will only be asked if Question A has answer "x"*

The diagram shows a form structure with a visibility dependency. At the top, there is a form container labeled `<form>` containing several horizontal lines representing input fields. Below this, there is a table with two columns: "condition" and "A = x". The "A = x" cell is highlighted in black. Below the table, there is a section containing a horizontal line with a circled "B" next to it, followed by several more horizontal lines, representing a question that is only visible when the condition "A = x" is met.

# Redesign

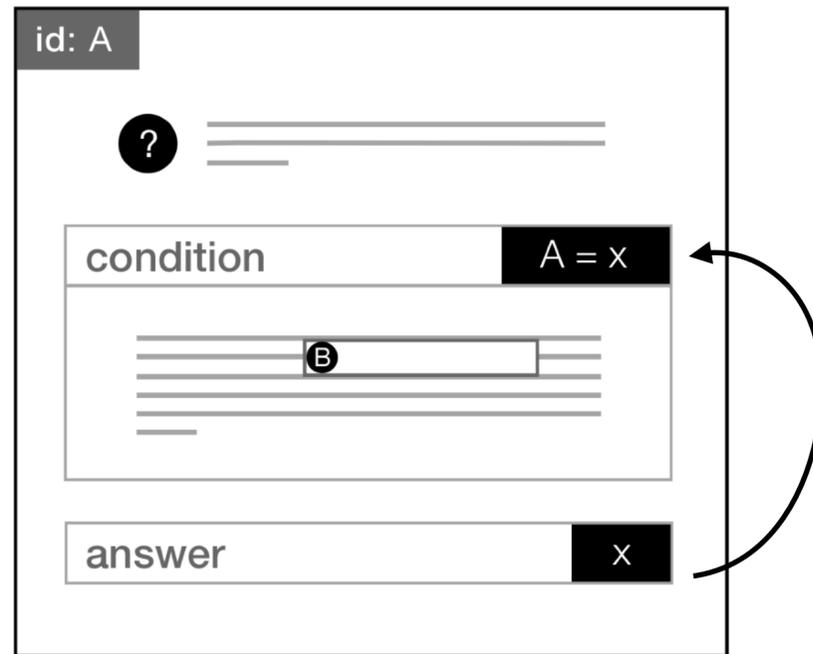
## Evaluation dependency

- *Calculation B can't be evaluated until Question C has been answered*



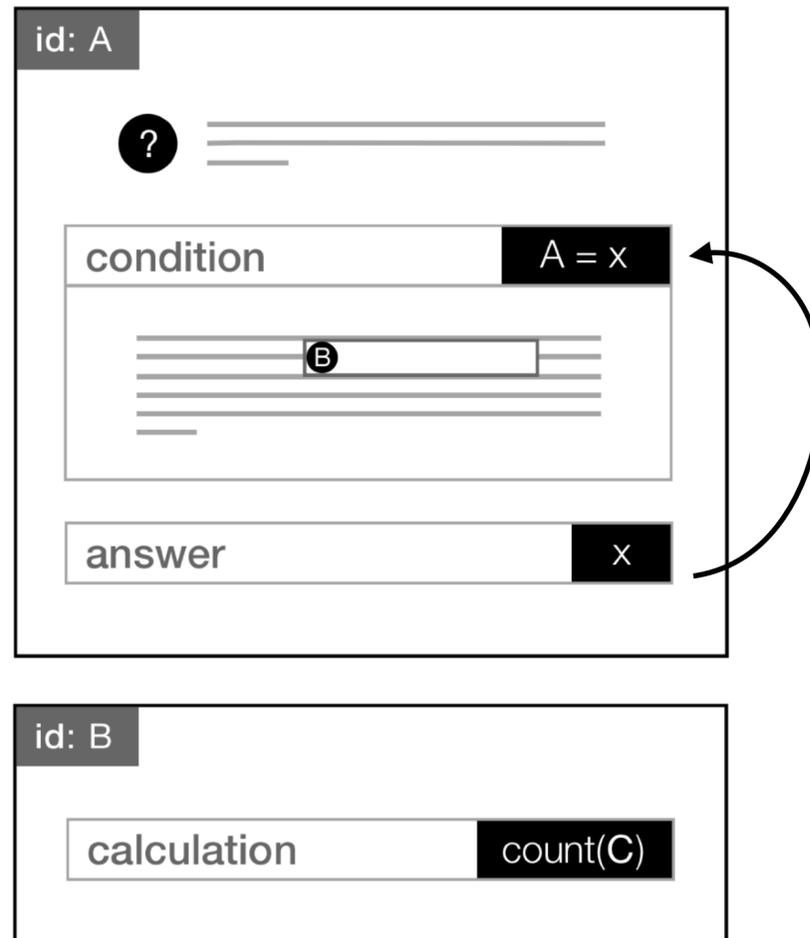
# Redesign

## Stack-based model



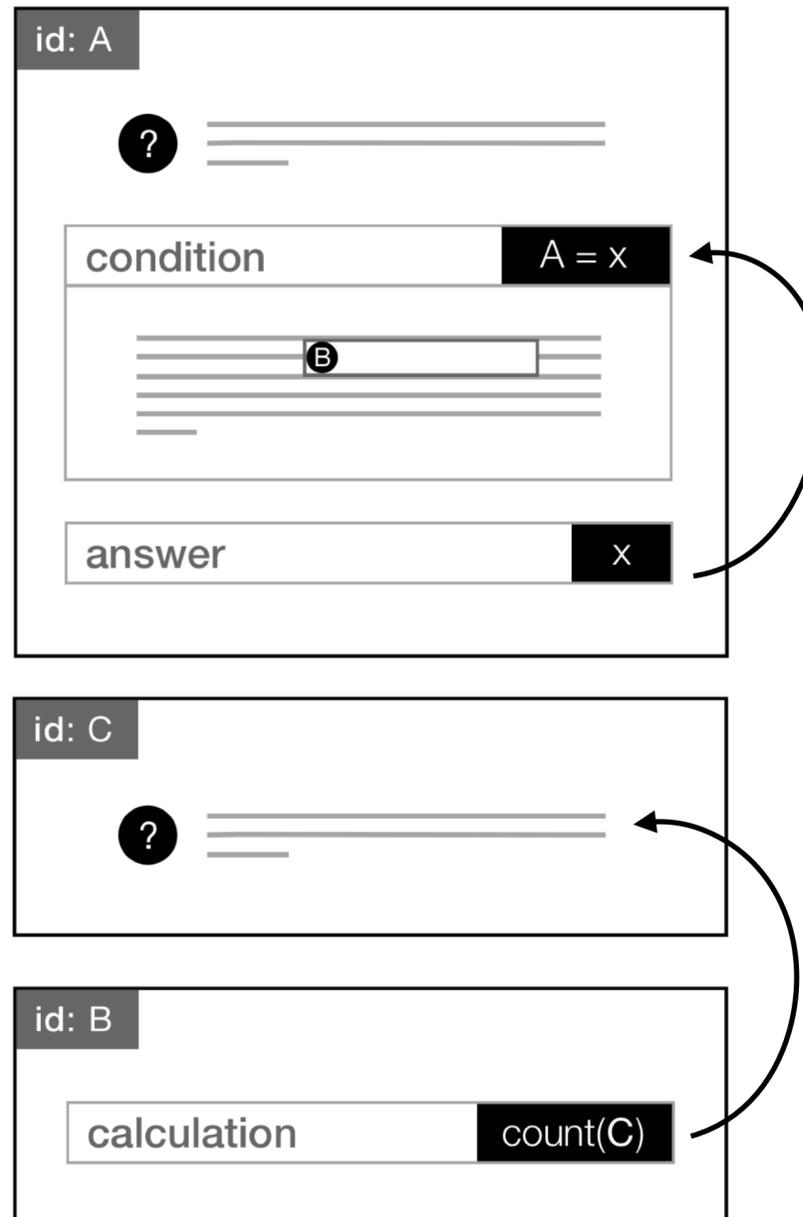
# Redesign

## Stack-based model



# Redesign

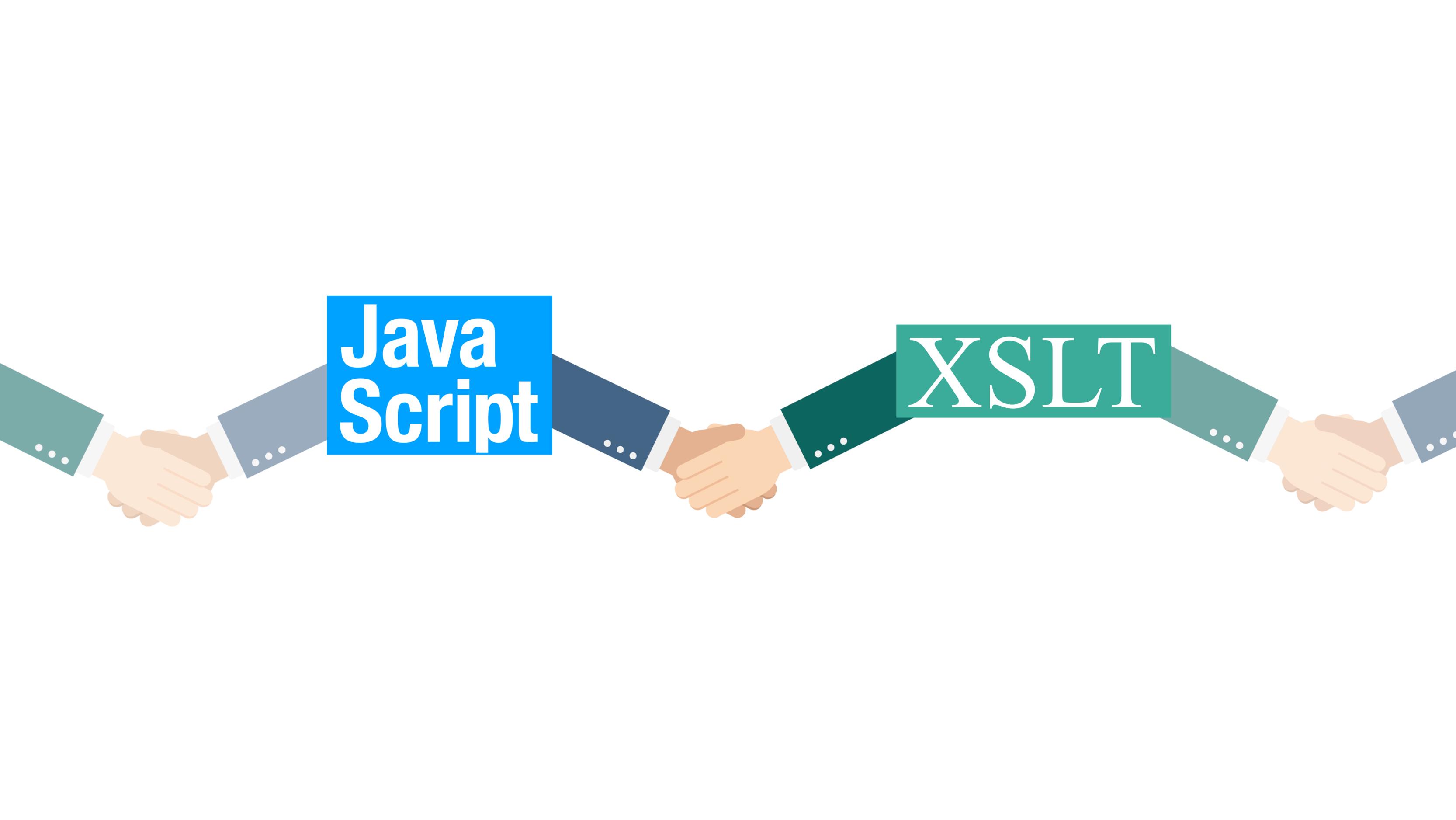
## Stack-based model



**Java  
Script**



**XSLT**



Java  
Script

XSLT