



## Makbul Khan

Acquia Certified Developer

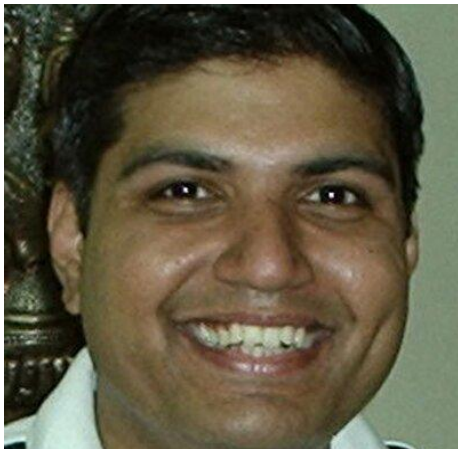
*Senior Software Engineer*



makbul\_khan8



makbul\_khan08



## Nikhil Sukul

*Senior Drupal Architect*



nikhilsukul



nikhilsukul

# Topics

1. What is Isomorphic JavaScript
2. Why Isomorphic JavaScript
3. Isomorphic in a wild
4. How to Isomorph
5. Available libraries
6. Isomorphic JavaScript with Drupal
7. Stop talking. Show me the code!

# What is Isomorphic JavaScript?

# Iso . morphic



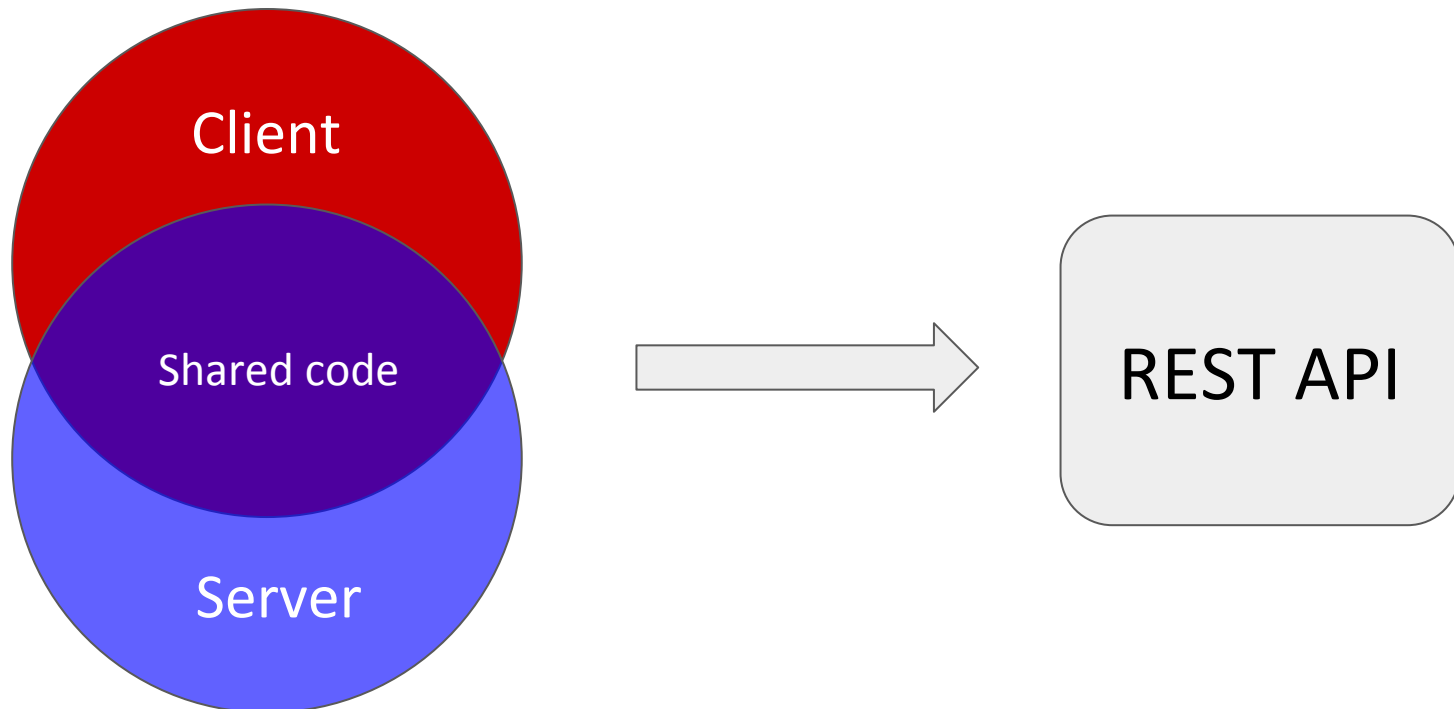
Same



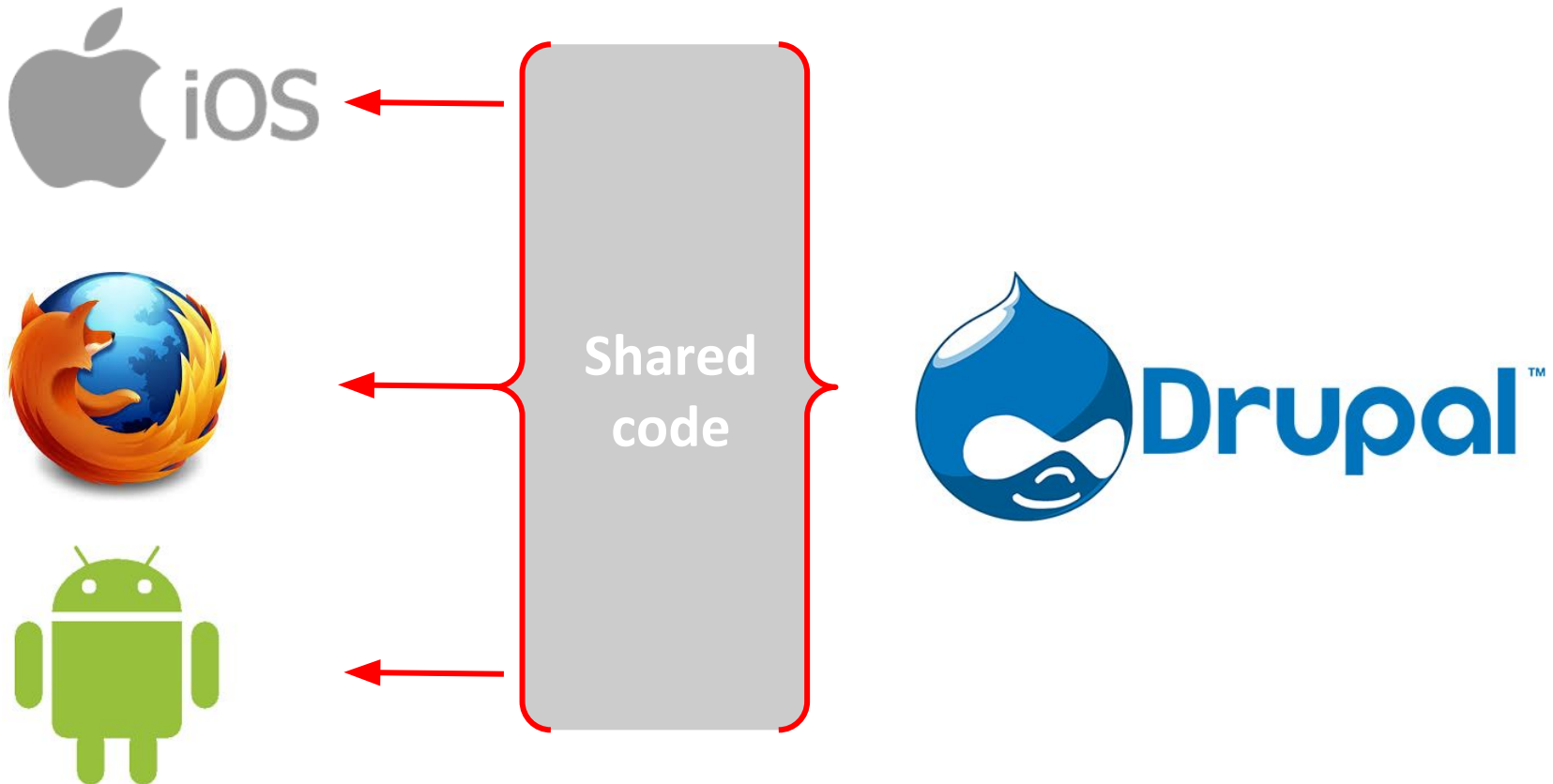
Form

# Isomorphic Application

- Dynamic website
- Capable of generating its html
- Use same code in both server and client side



Javascript code that can be shared  
between Client and Server apps.



# Why Isomorphic Javascript

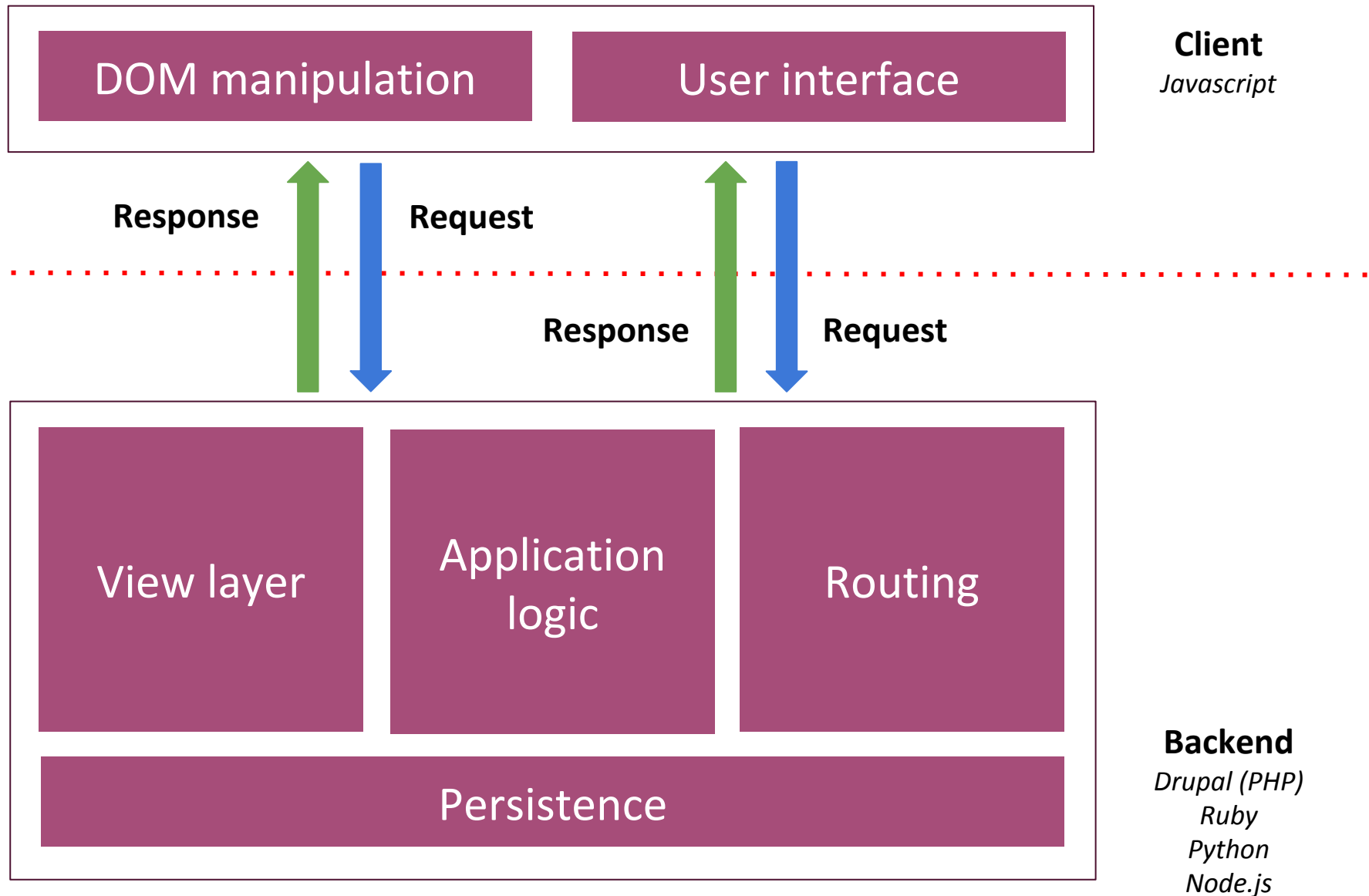
# Compiled Web applications

- Server-rendered application
- Client-rendered application
- Isomorphic web application

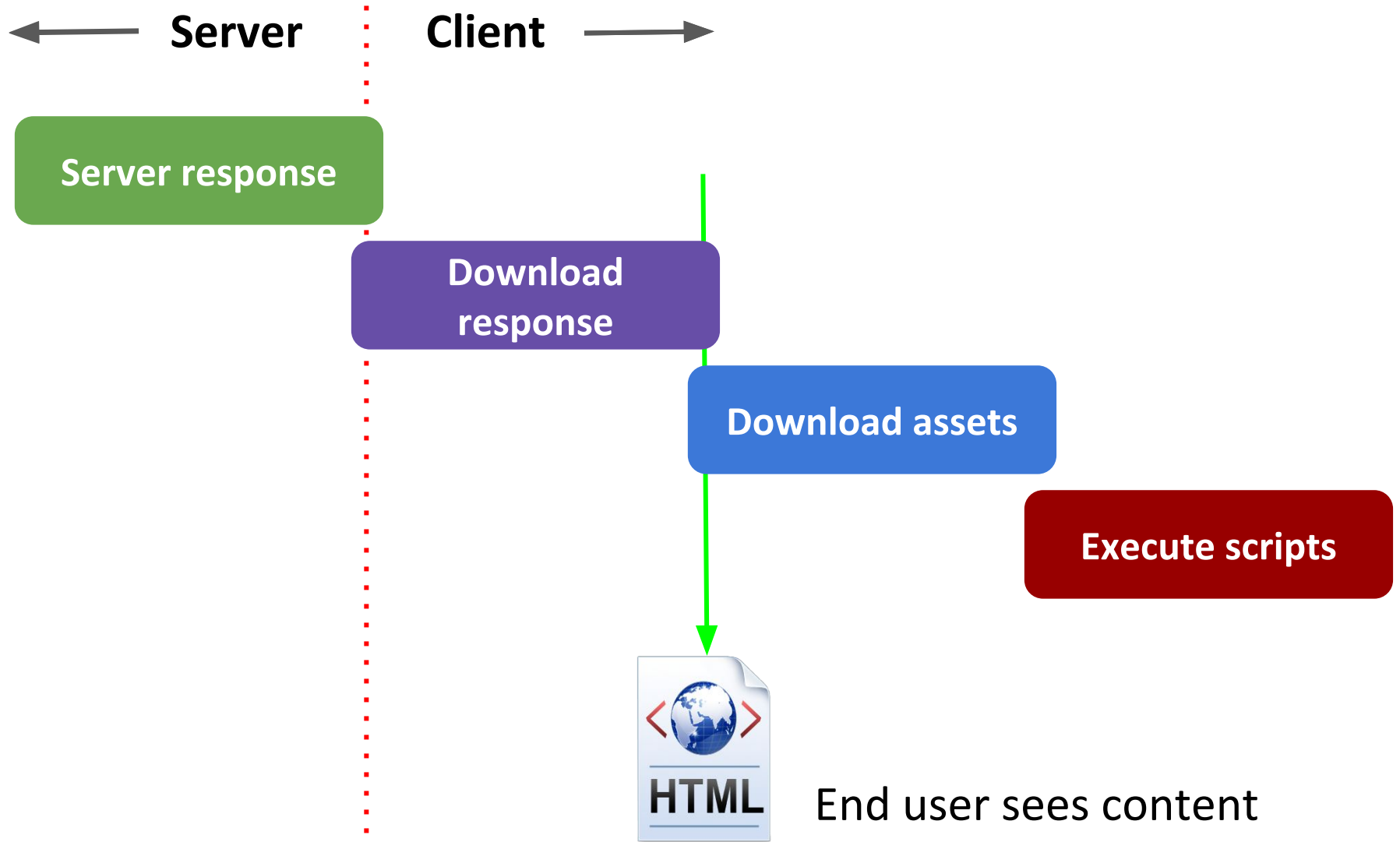


**Server-rendered application**

# Server-rendered application



# Server-rendered application



# Server-rendered application

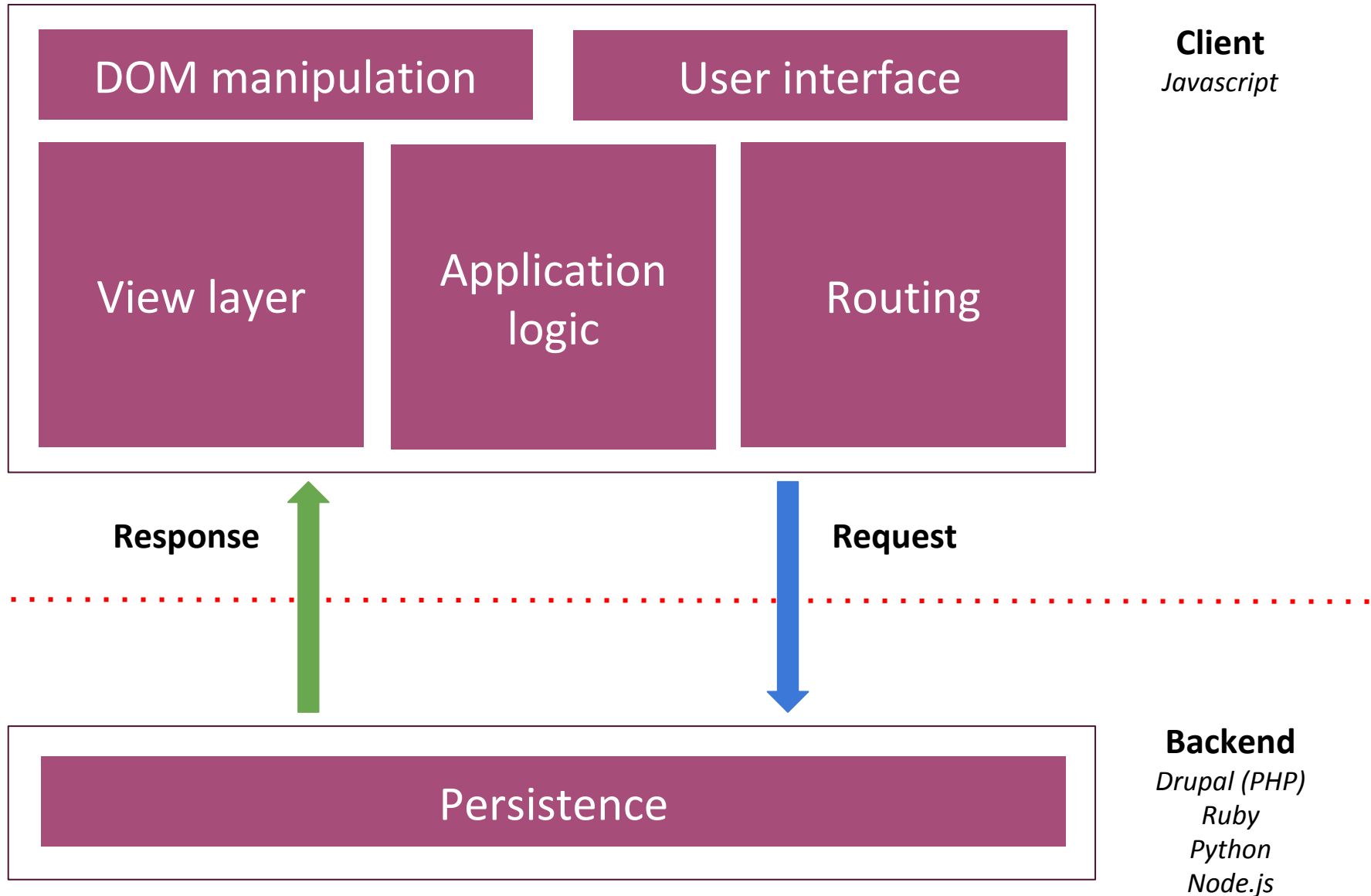
- Server render content
- Improved user experience by using AJAX, JQuery, ...
- Serving HTML on first-load is fast.
- Crawler, screen-readers are happy with HTML.

## **But:**

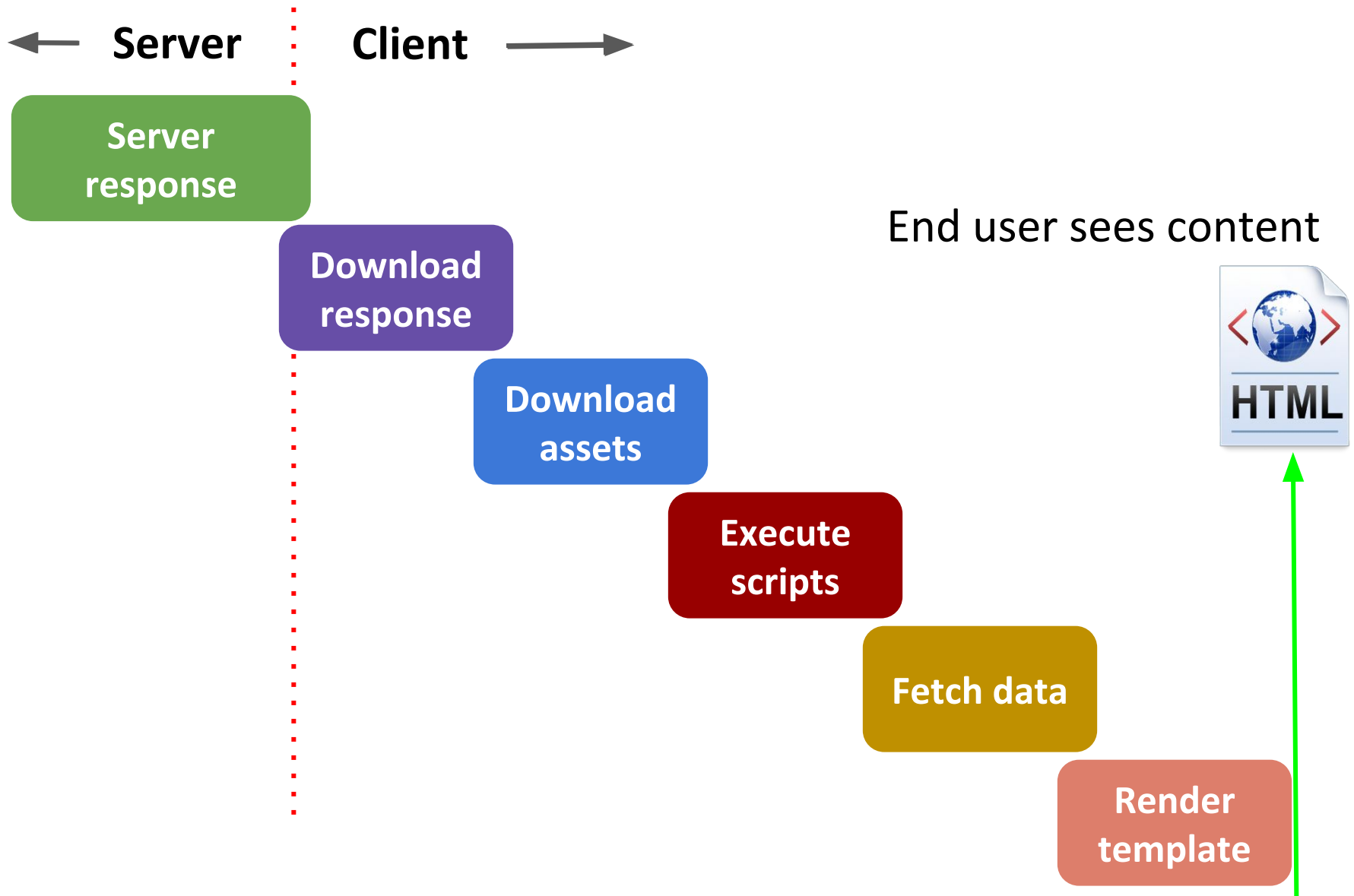
- Maintain UI render and logic in both Client & Server
- Duplication application logic in (usually) two languages, two frameworks, two development stack, two templates, ...

**Client-rendered application**

# Client-rendered application



# Client-rendered application



# Client-rendered application

- Client side render content
- Separate application logic and data retrieval
- More interactivity, optimistic UI, offline, mobile
- Eg. Gmail and StackEdit Editor

## **But:**

- Not SEO friendly
- Users have to wait a few seconds of blank page or loading spinner before seeing the content
- Expensive maintenance



# Server

*v/s*

# Client

Initial load

Initial load

SEO

SEO

User experience

User experience

Server-rendered Application

OR

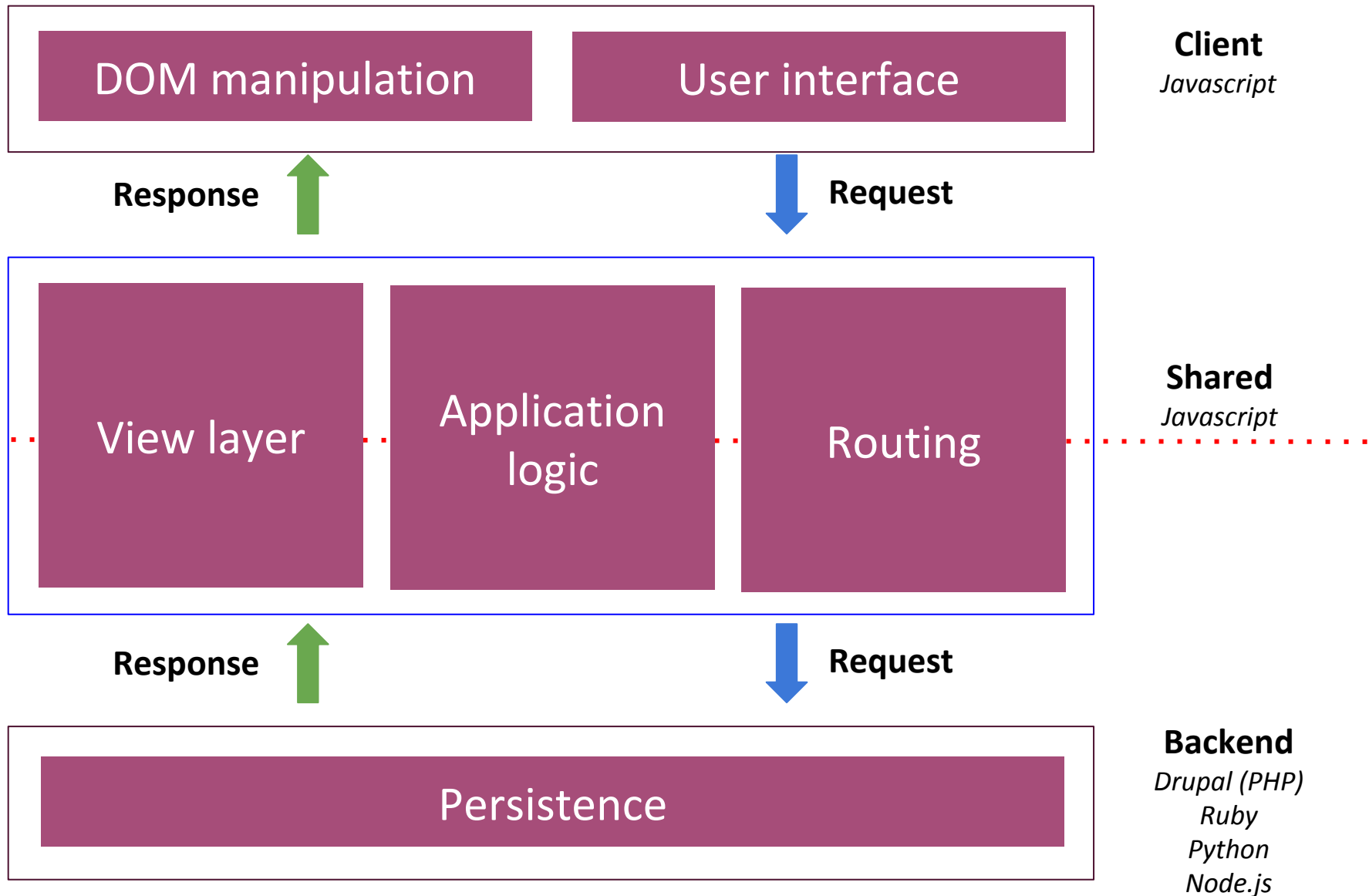
Client-rendered Application

We have another option:

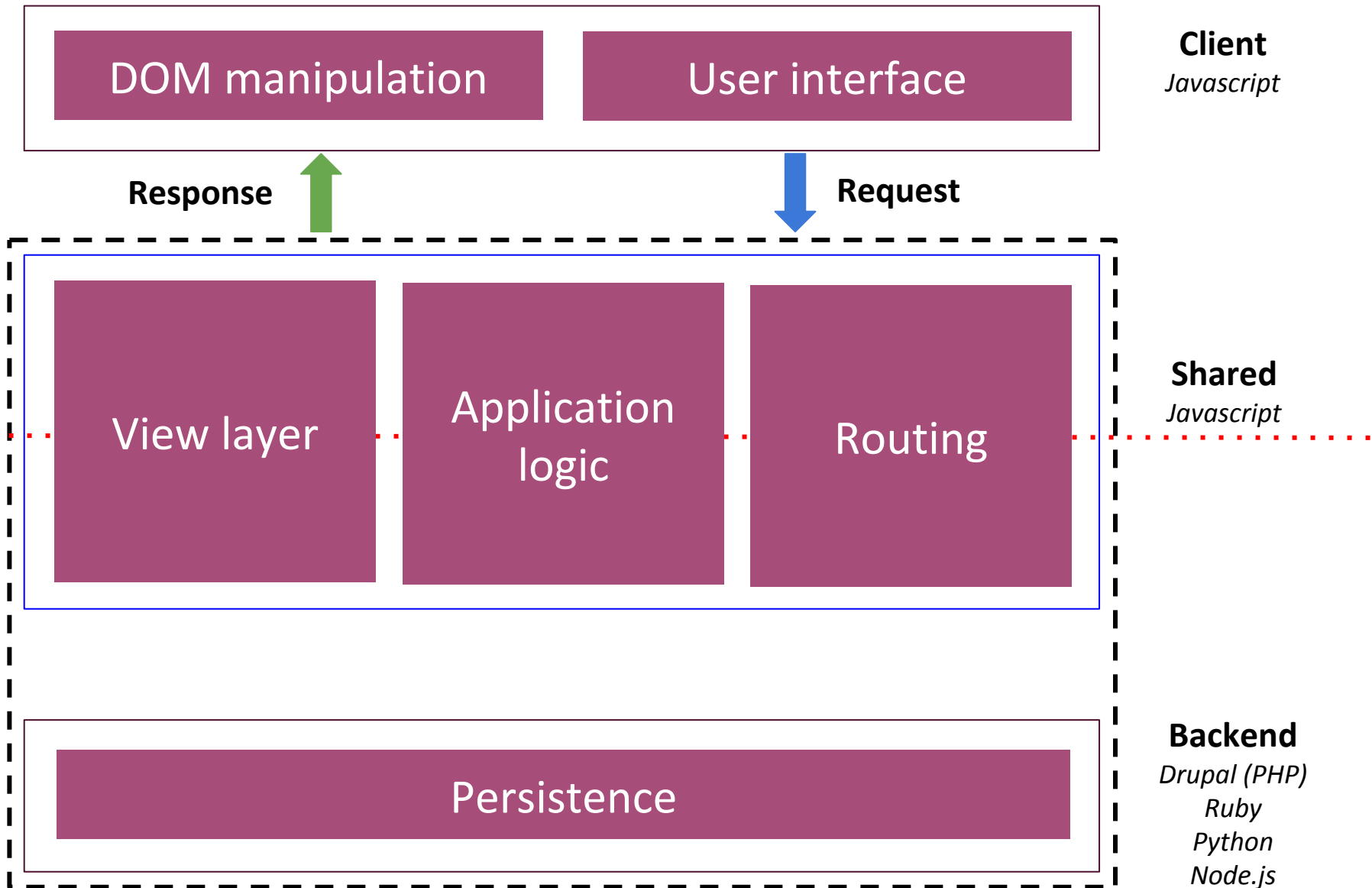
# Isomorphic Web Application

*The best of both worlds*

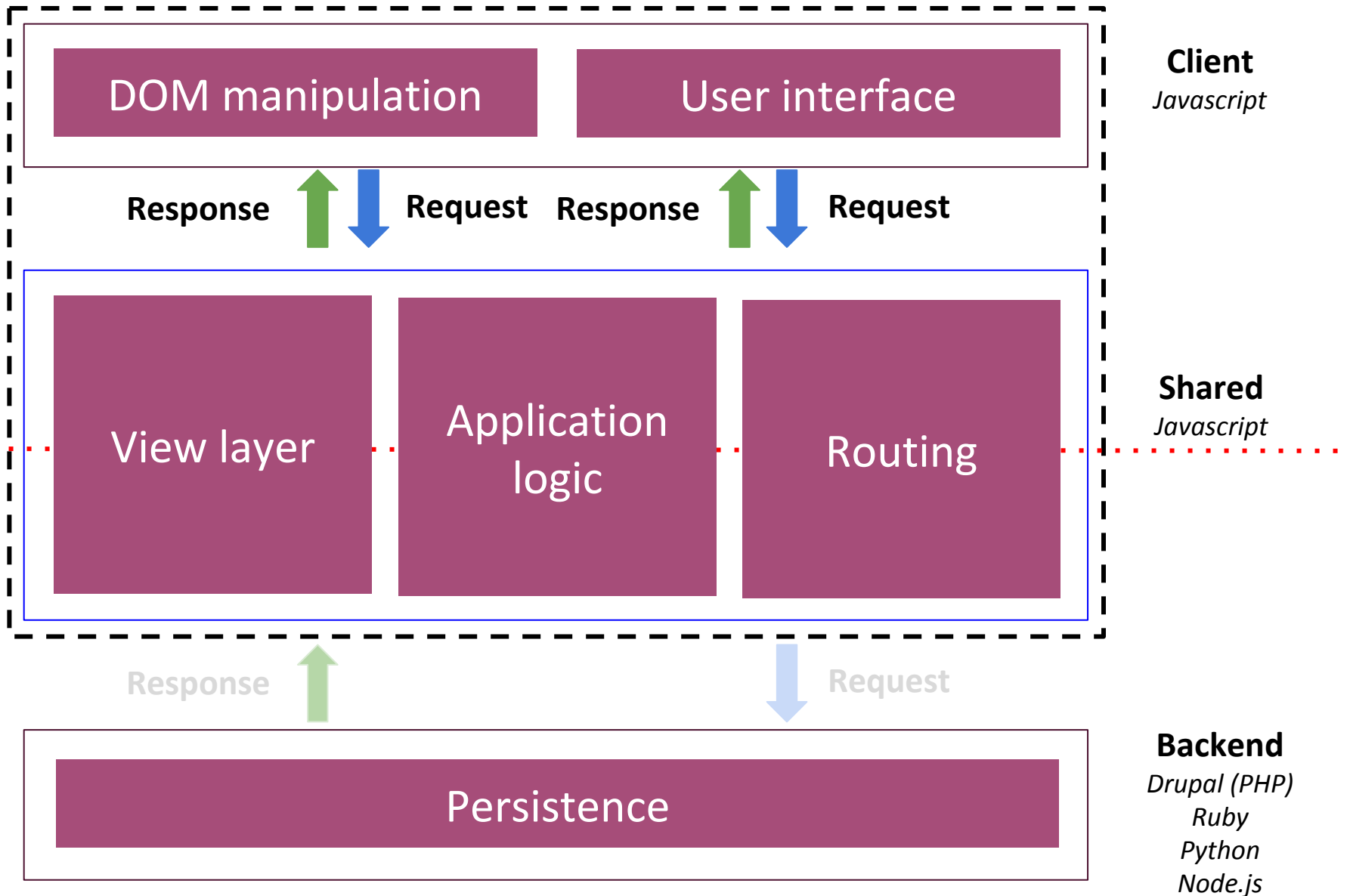
# Isomorphic application



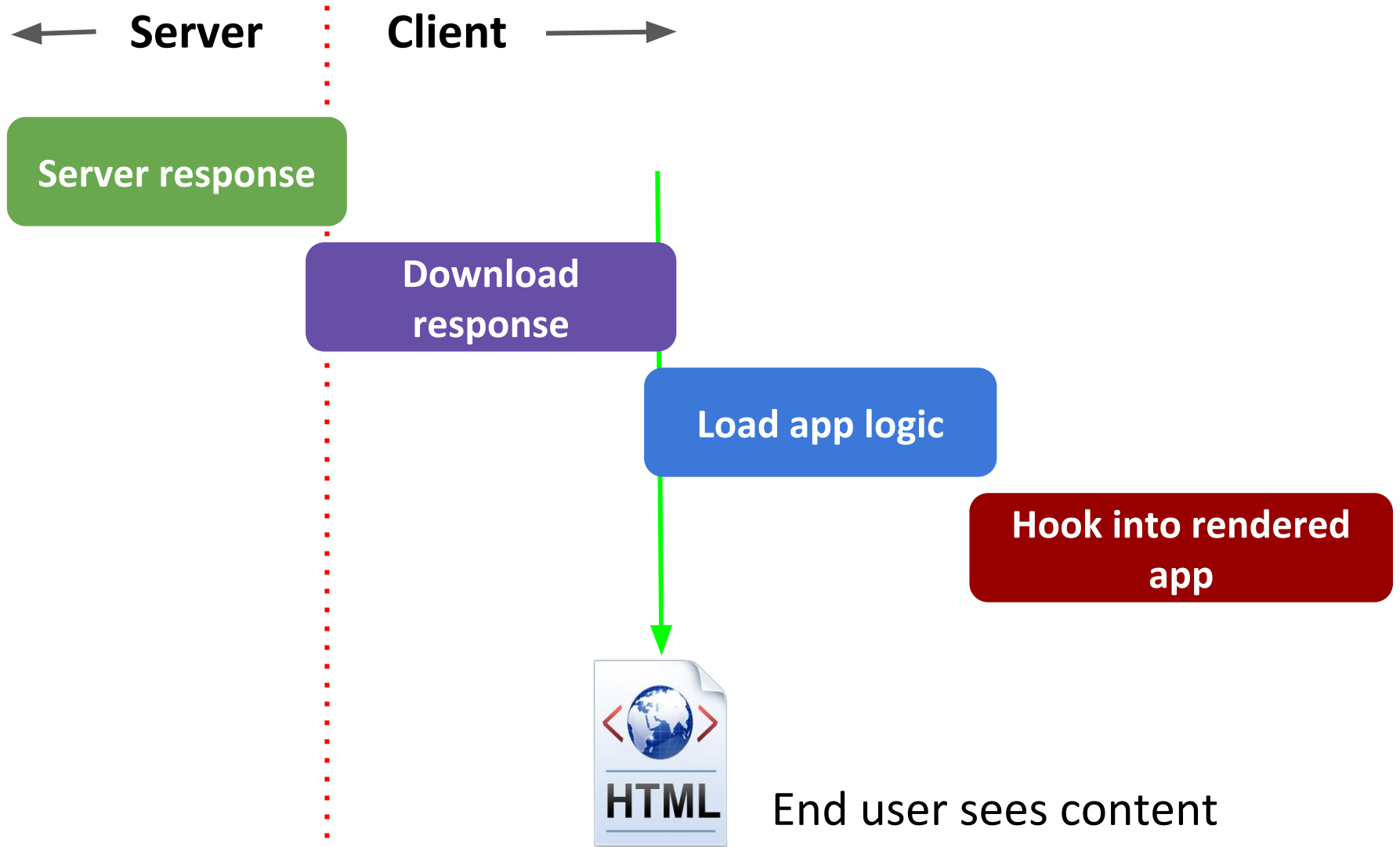
# Isomorphic application



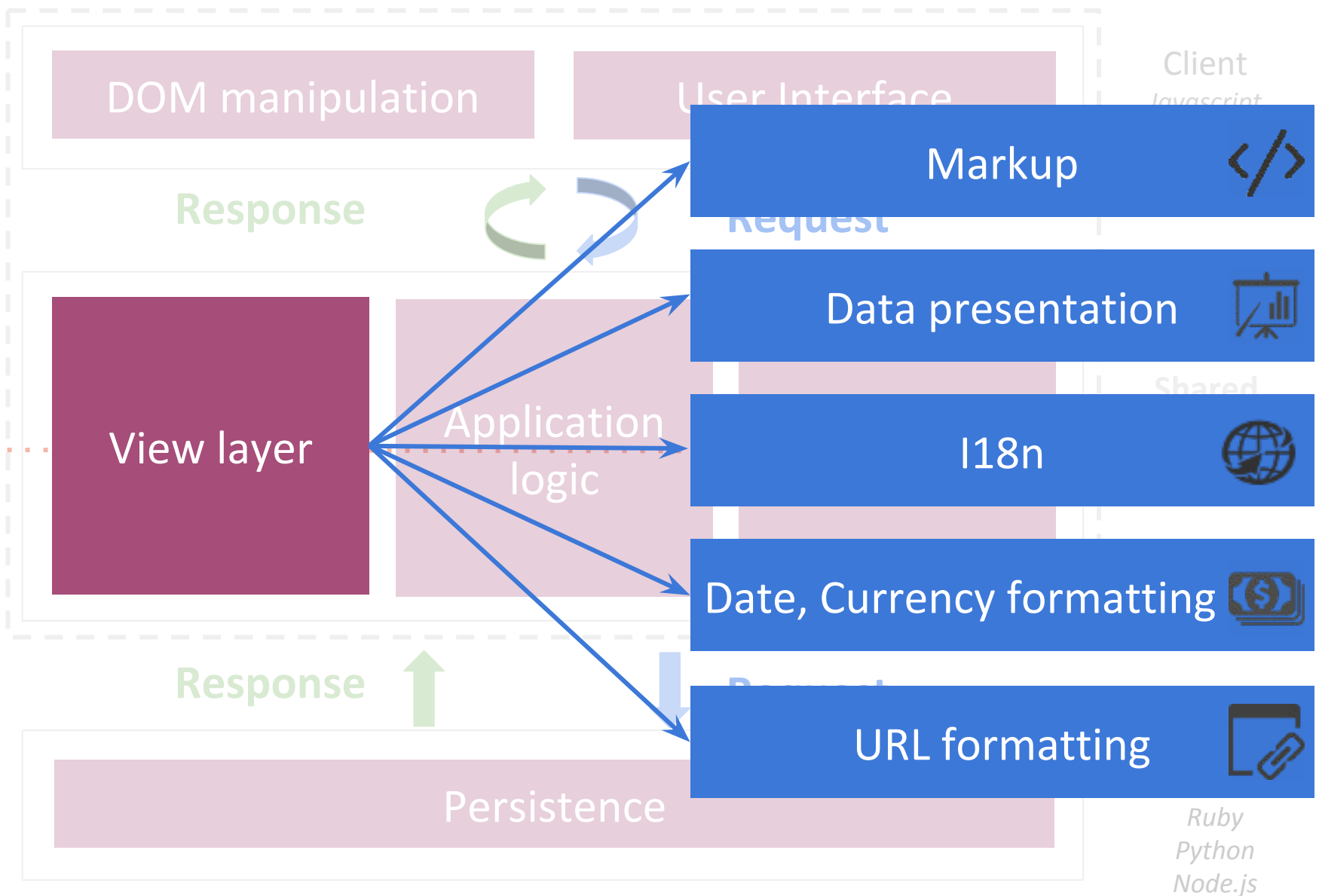
# Isomorphic application



# Isomorphic application



# Isomorphic application





**Why go to the trouble?**

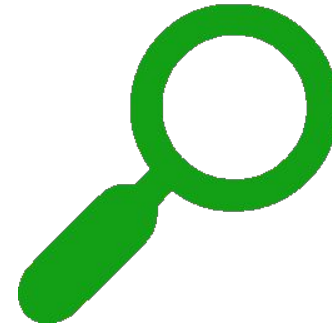
## Performance

Initial page load speed.



## SEO

Crawlable single-page apps.



## Flexibility

Run code anywhere.



## Maintainability

Reduce code duplication.



**Isomorphic in a wild**



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PRO

The Taj Mahal is the epitome of Mughal art and one of the most beautiful buildings in the world. It is a masterpiece of architecture and engineering, and a symbol of love and devotion. It was built by the Mughal emperor Shah Jahan in the 17th century, and it has been a UNESCO World Heritage Site since 1983. It is a must-see for anyone visiting Agra, India.

Ebba Koch, an important scholar, has been permitted to take a series of photographs of the palaces and gardens of Shah Jahan for thirty years and of the Taj Mahal itself—the tomb of the emperor's wife, Mumtaz Mahal—for a decade.

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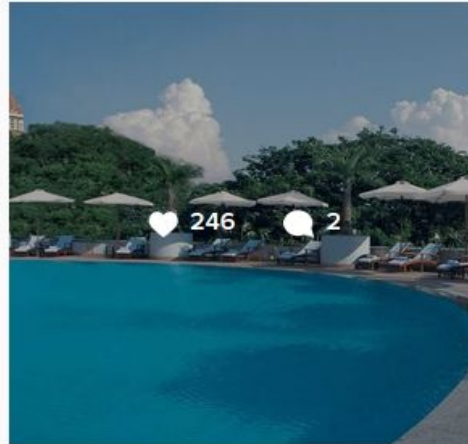
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#luxurylifestyle #good #WelcomeNewYear  
#newyear #newresolution #new  
@vashishthapra - Dinner for 101  
#diningroom #falaknumapalace #Regrann  
rathasingh9 Gorgeous Gorgeous!!

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# Instagram

Facebook's React library  
in a Django app.

NEW YEAR DELIGHTS





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# Meteor

## Realtime app framework.



### Meteor Galaxy is now available

Galaxy is the best way to operate and scale apps made with Meteor.

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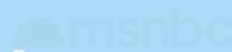


# Lullabot

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React, Node.js, CouchDB and Drupal as the  
backend CMS.

Our work includes strategy, design and development for some of the world's  
top brands. Hear what MSNBC had to say about working with Lullabot.



**How to Isomorph**

**Isomorphic JavaScript can be  
environment agnostic  
or  
shimmed per environment.**

# Environment agnostic

Does not depend on browser-specific properties  
(`window`) or server-specific properties  
(`process.env`, `req.cookies`).

# Shimmed per Environment

Provide shims for accessing environment-specific properties so module can expose a single API.

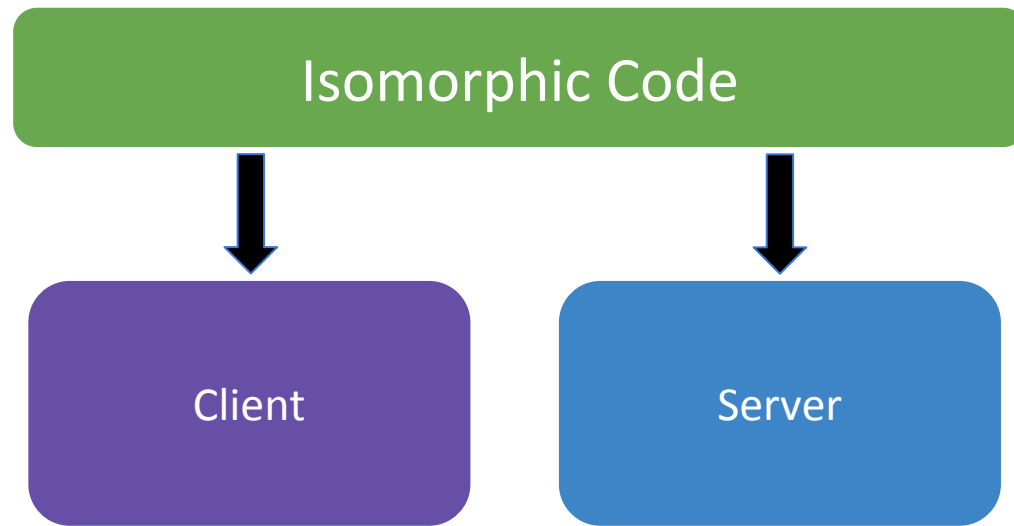
`window.location.pathname`

VS

`req.path`

# Abstractions

# Isomorphism



Abstract all the things!!

# Abstraction

## Cookies

```
setCookie('myCookie', 'root');
```



```
document.cookie =  
  'myCookie=root;  
  Domain=.example.org';
```

**Client**



```
response.setHeader(  
  'Set-Cookie: myCookie=root;' +  
  'Domain=.example.org');
```

**Server**



# Abstraction

## Redirects

```
this.transitionTo('/login');
```



```
document.location.href = '/login';  
window.pushState({}, "", '/login');
```

**Client**



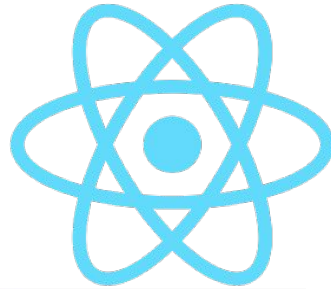
```
response.redirect('/login');
```

**Server**

**Most of your favourite JS  
libraries are Isomorphic**

# You can use these libraries

Invisible.js



React

Brisket

lazojs



Ezel

Taunus



Rendr

Derby

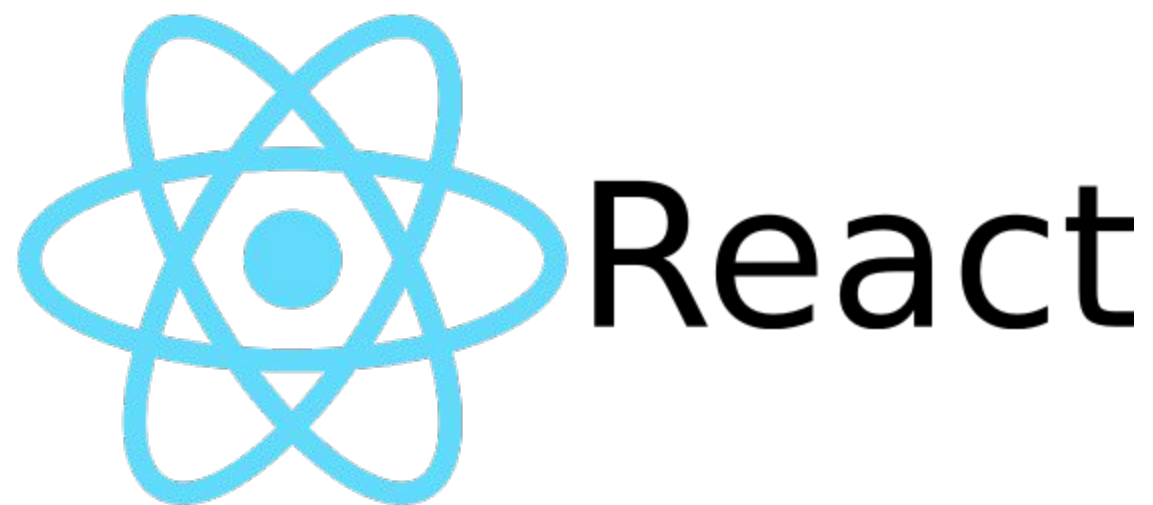
Sara.js

Este.js

Meteor

mojito





# React

(JavaScript framework by [Facebook](#))

- New and fashionable
- Uses a virtual DOM, and syncs only the changed parts
- A javascript library for building user interface
- Strict data control mechanism

# Isomorphic Javascript with Drupal

# Available libraries in Drupal as a Module

- React -- Recommended release (react & myreactjs)
- Meteor -- Sandbox
- Rendr -- No module yet

**Stop talking. Show me the  
code!!**



# THANK YOU



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