R : Location-based Community Service

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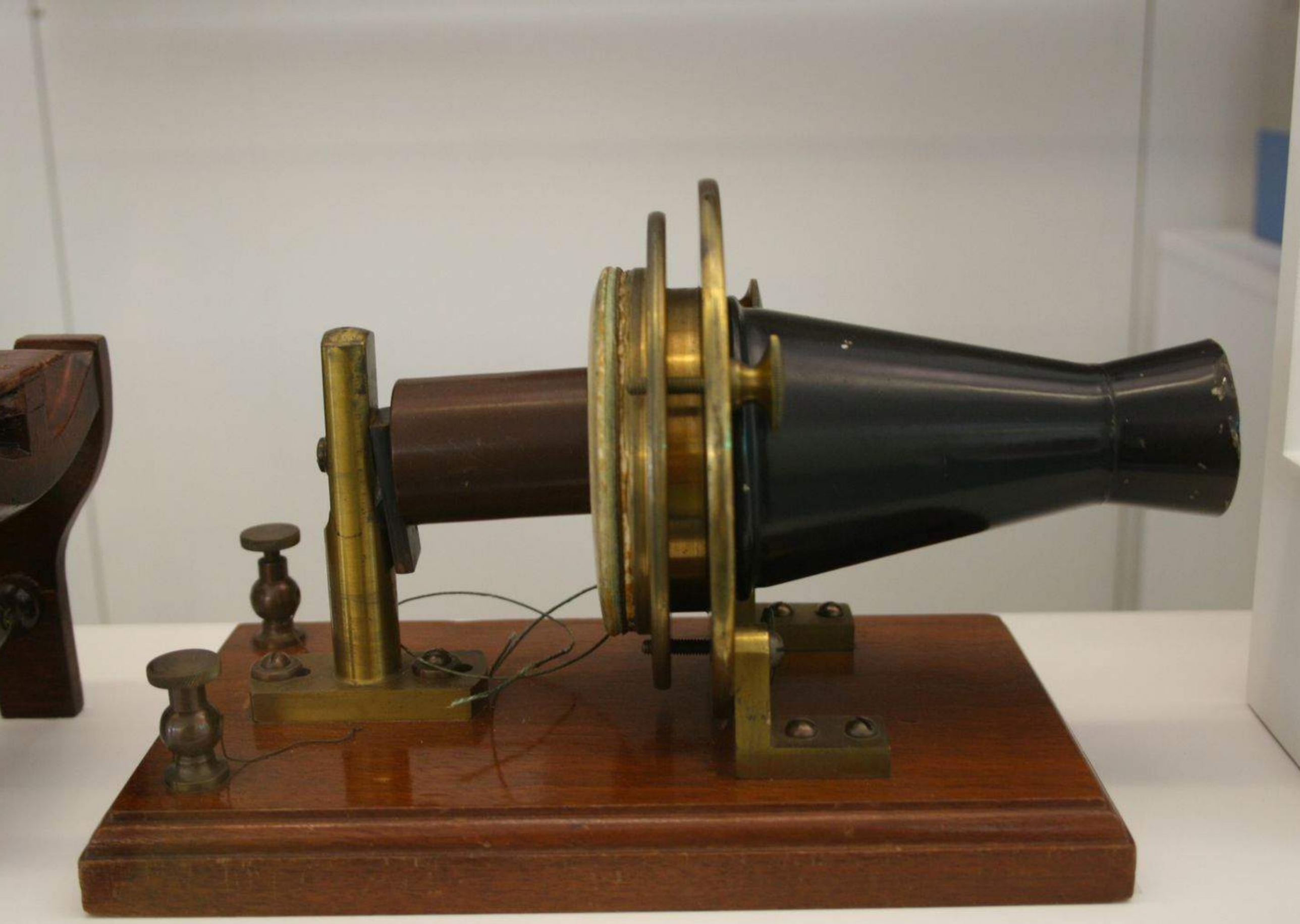
Idea

http://www.gtreview.com/wp-content/uploads/2014/10/Seoul-skyline-South-Korean.jpg

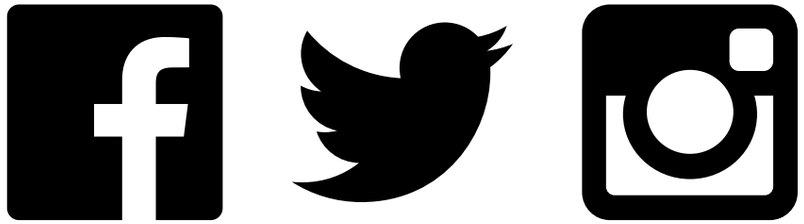


”1876년 알렉산더 벨은 자신이 만든 전화 특허를 전보 회사에게 팔려고 하였지만 거절 당하였다. 당시 전화기는 정말로 누구에게라도 쓸모 없는 장난감으로 보였을것이다. 가격도 비싸고, 음질도 않좋아 알아듣기 어려우며, 확성기같은 기계를 입에 대고 말하는것이 어색하고 품위 없게 보였을것이다.

하지만 그 장난감같은 전화기를 만들어내기 위해 수년의 시간을 바쳤던 벨은 전혀 다른 상상을 하고 있었을 것이다. 그는, 미국의 모든 집의 마루 한 중심에 자신이 만든 전화기가 놓여 있는 장면을 상상했을 지도 모른다. 어쩌면, 불가피한 이유로 떨어져 살게 된 가족들이 서로의 안부를 묻고 목소리를 들으며 눈물을 흘리는 장면을 상상했을 지도 모르겠다.”

From http://sungmooncho.com/2015/11/10/makers-change-the-world/

love, belonging



esteem, self-actualization or !#?*

from Maslow's hierarchy of needs

Essentiality Matter!

What is our essentiality?

What is R?

What is the things we provides?

Which problem we trying to solve?

R is,

Community where you can find and share essential things through locations.

We want to,

Review

Feeling

News

Provides **Things** that Matter

Thinking

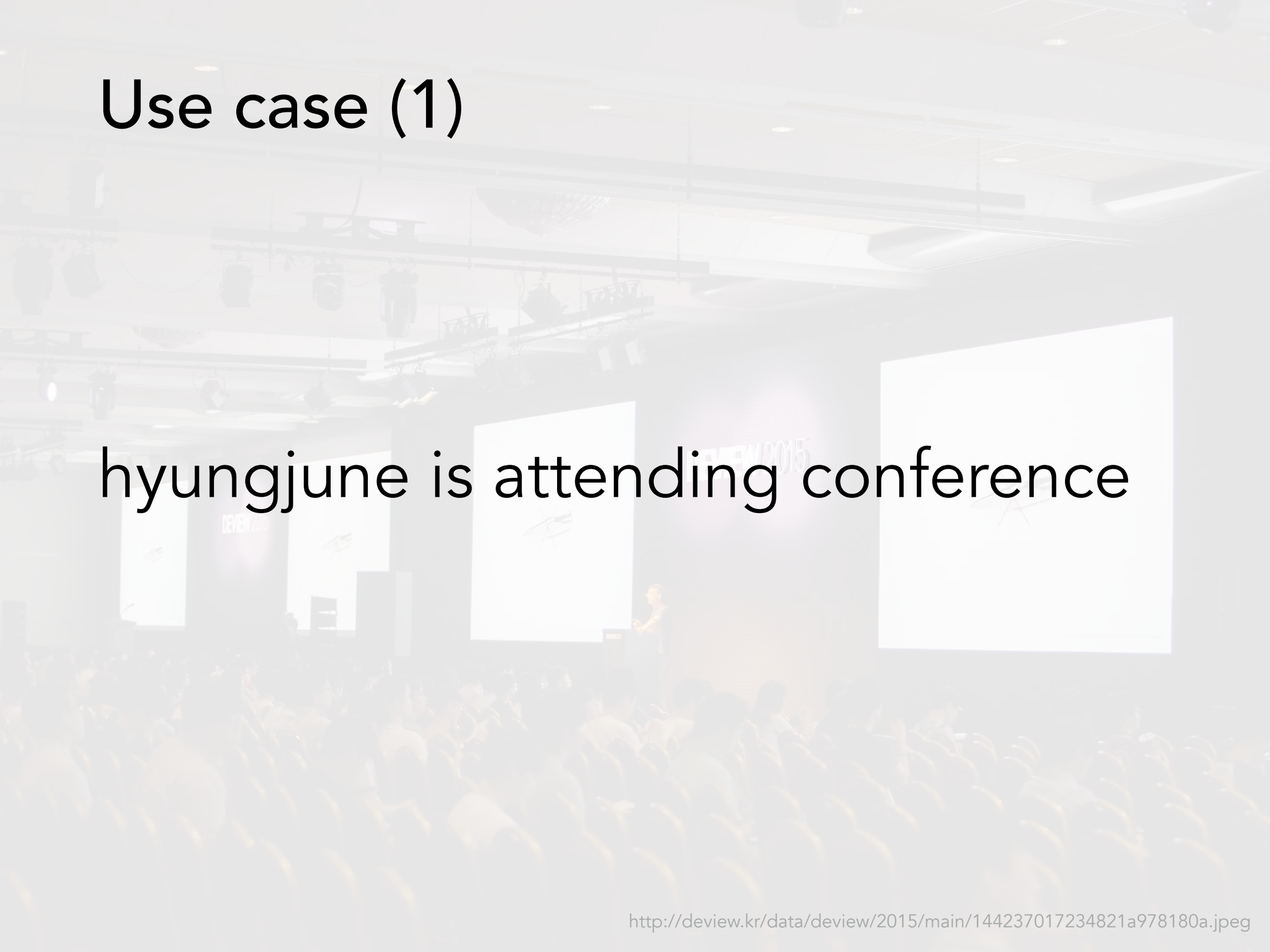
Information

Meetup

To solve,

Difficulties around find and share **essential** information

Use case (1)



hyungjune is attending conference

http://deview.kr/data/deview/2015/main/1442370172348 21a978180a.jpeg

Use case (2)

gitaek is attending university

https://en.wikipedia.org/wiki/University#/media/File:Bologna-vista02.jpg

Implementation

https://www.flickr.com/photos/intvgene/370973576/

Redis

txt2html

MongoDB

ECMAScript 2015

Nginx

Node.js

Webpack

Python Fabric

Git

React

AWS SES

AWS EC2

jQuery

AWS S3

Client

Server

Cloud Dependencies

Components

Parse

Push

Amazon Web Services

S3

SES

Cloud Dependencies

Mobile Gadget

Mobile Gadget

Web

Clients

Nginx

Node API

Node Web

Mongo

Redis

Web Application Server (WAS)

Design Goals

Design in software is architecture - not just internal of it, but external as well.

What is good architecture?

Good architecture is done by,

The essence of **abstractions** is preserving information that is relevant in a given context, and forgetting information that is irrelevant in that context. *by John Guttag*

MongoDB

Redis

Nginx

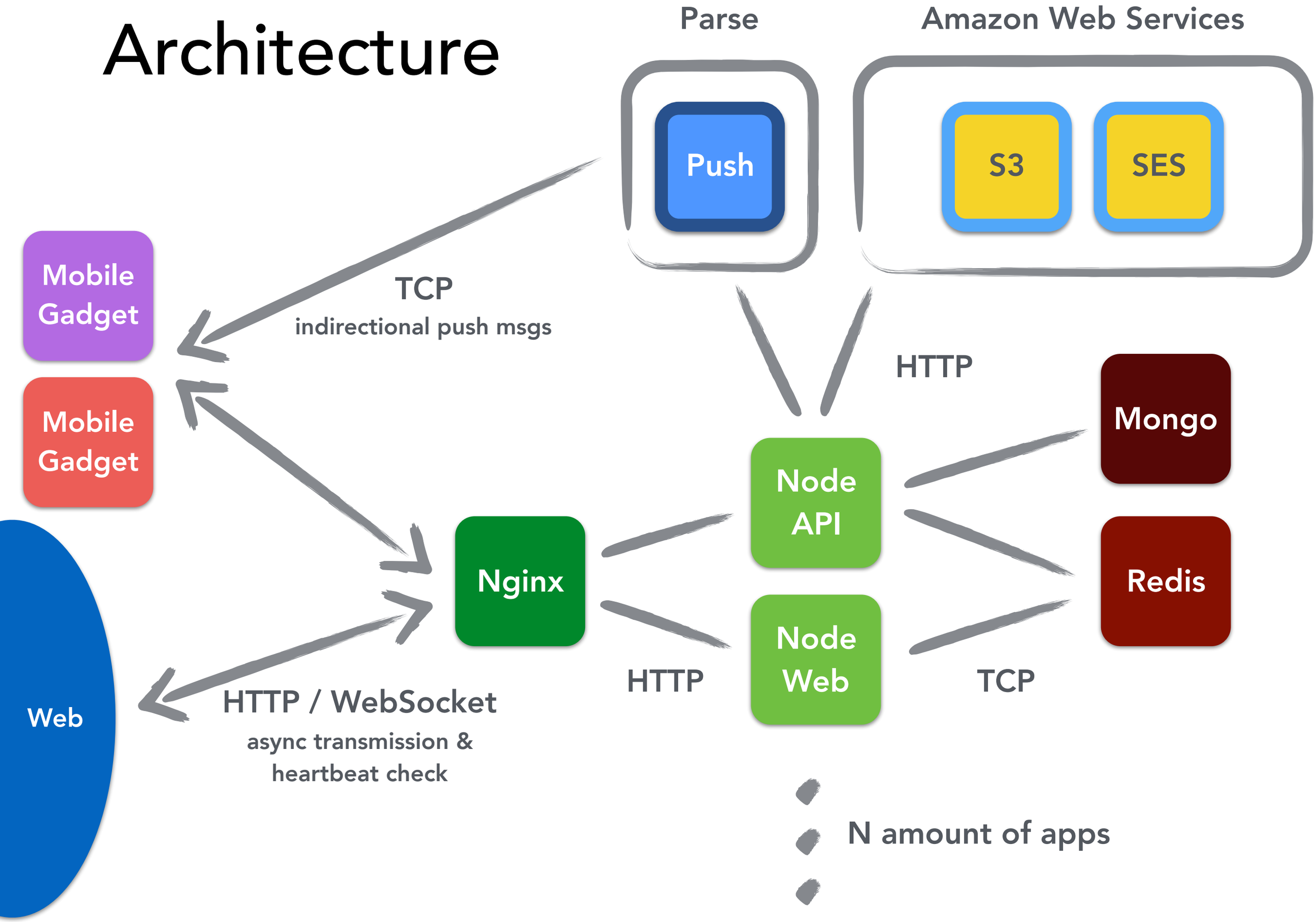
AWS

Inside the Application

New York City, New York, circa 1959

https://www.archives.gov/exhibits/twww/assets/img/4.19.jpg

Architecture



Centralized Configuration

Multilingual Support?

Modularity

Ajax Decorator

HTTP Decorator

Loose Coupling

Right Abstraction

Promise Pattern

Lazy Definition

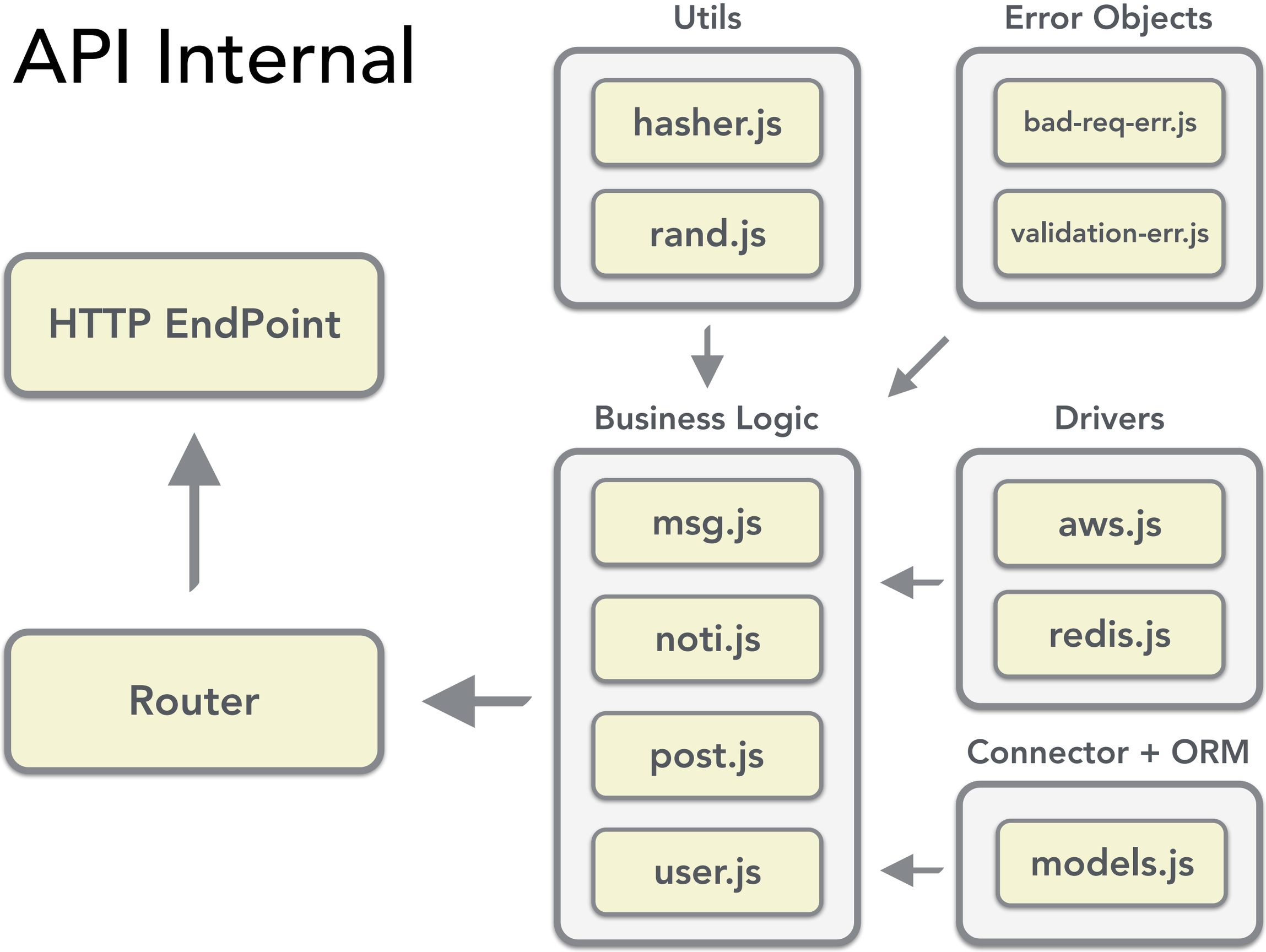
Load Balancing

Event communication

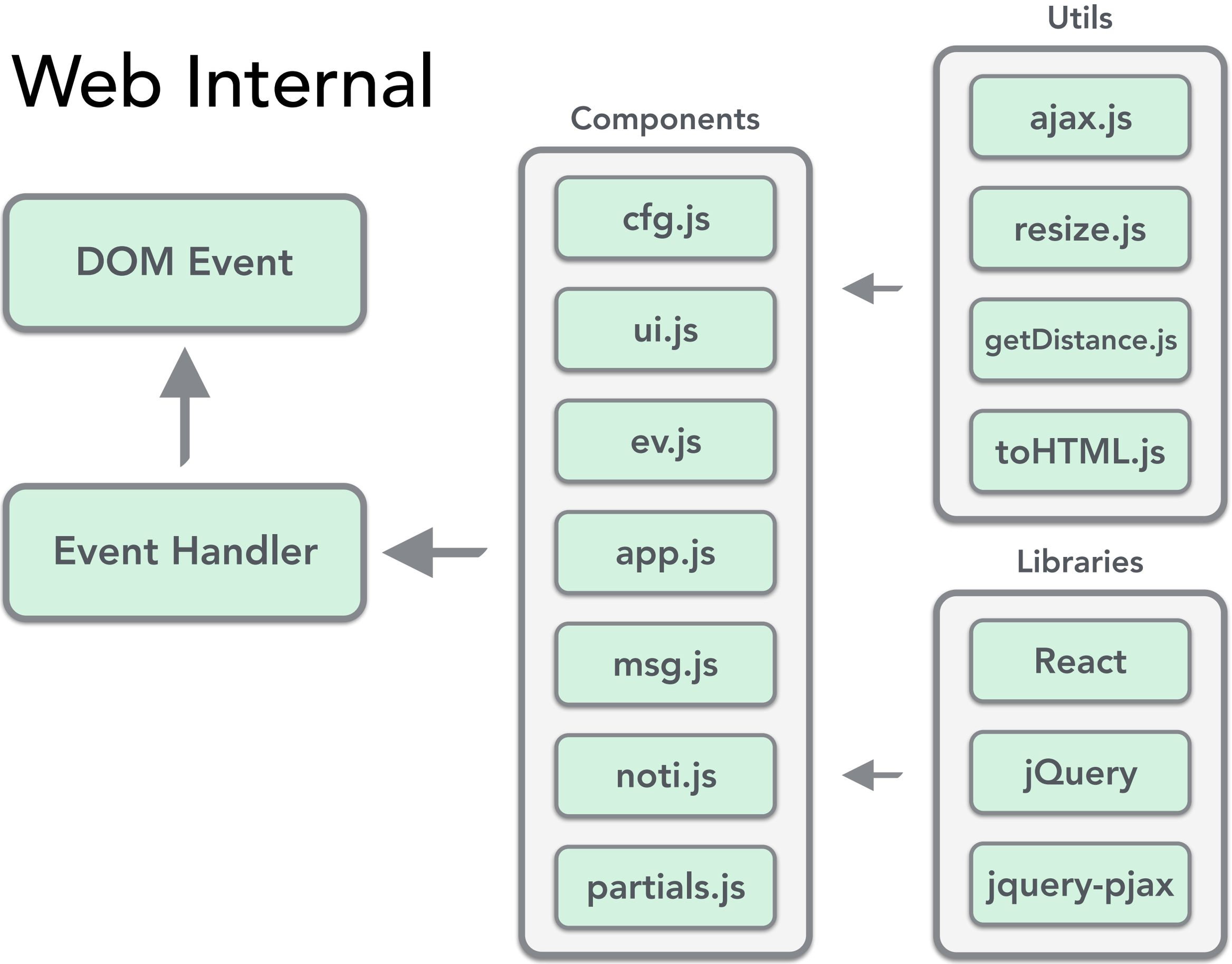
Location-based Search

Single Page Application

API Internal



Web Internal



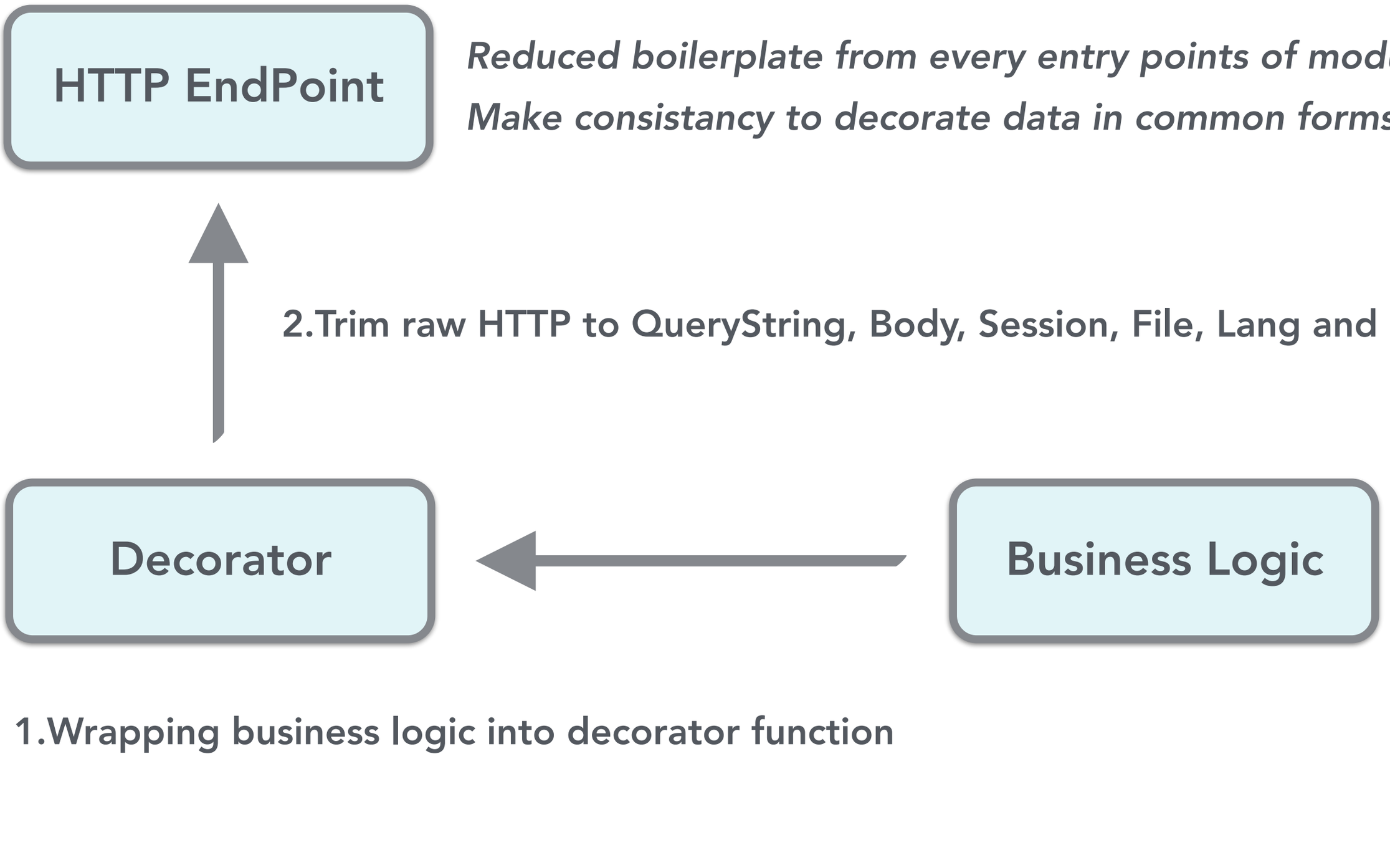
Decorator Pattern

Attach additional responsibilities to an object dynamically keeping the same interface. Decorators provide a flexible alternative to subclassing for extending functionality.

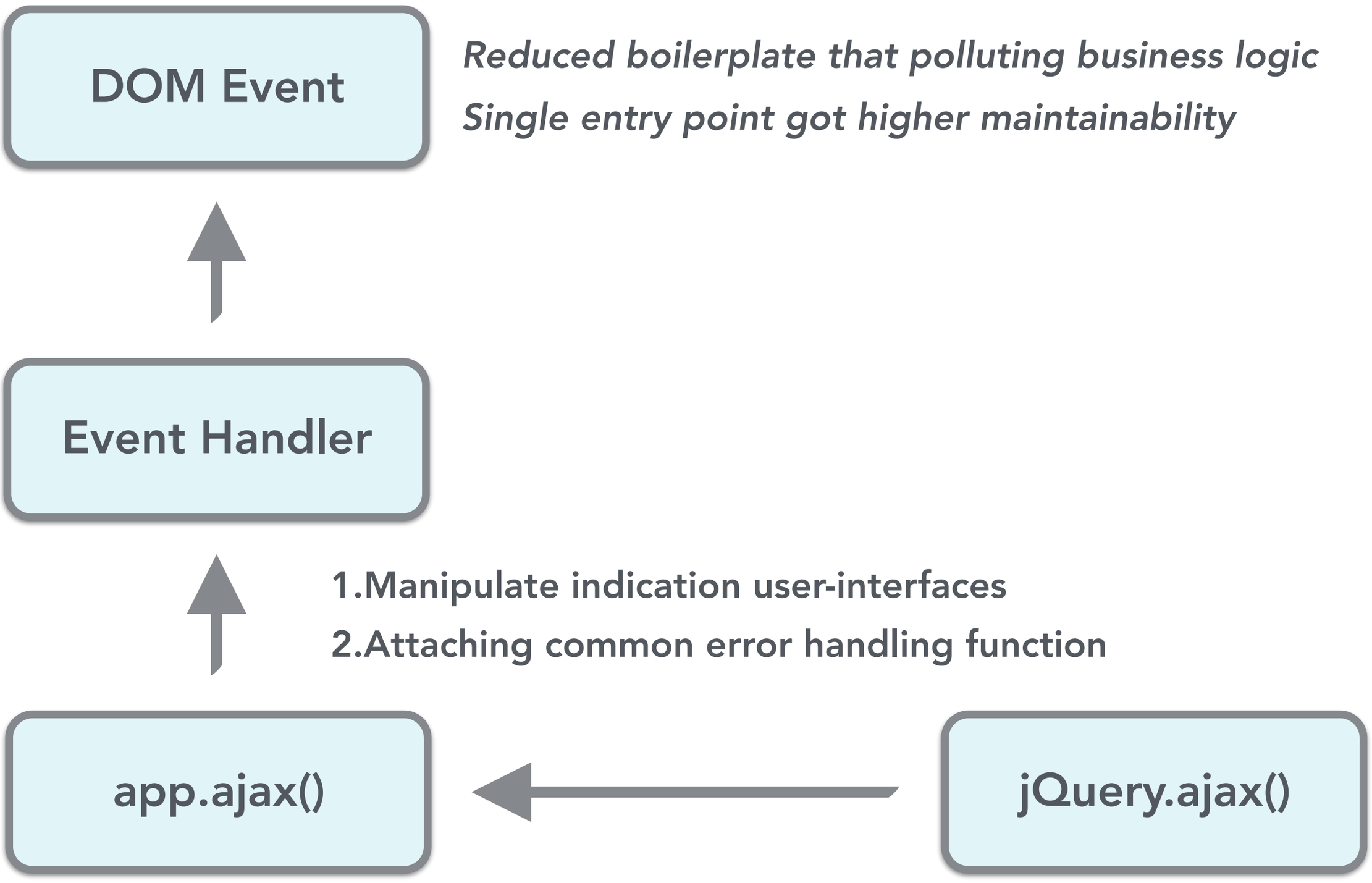
A.K.A Wrapper Pattern

https://en.wikipedia.org/wiki/Swarm_behaviour#/media/File:Fugle,_%C3%B8rns%C3%B8_073.jpg

HTTP Decorator



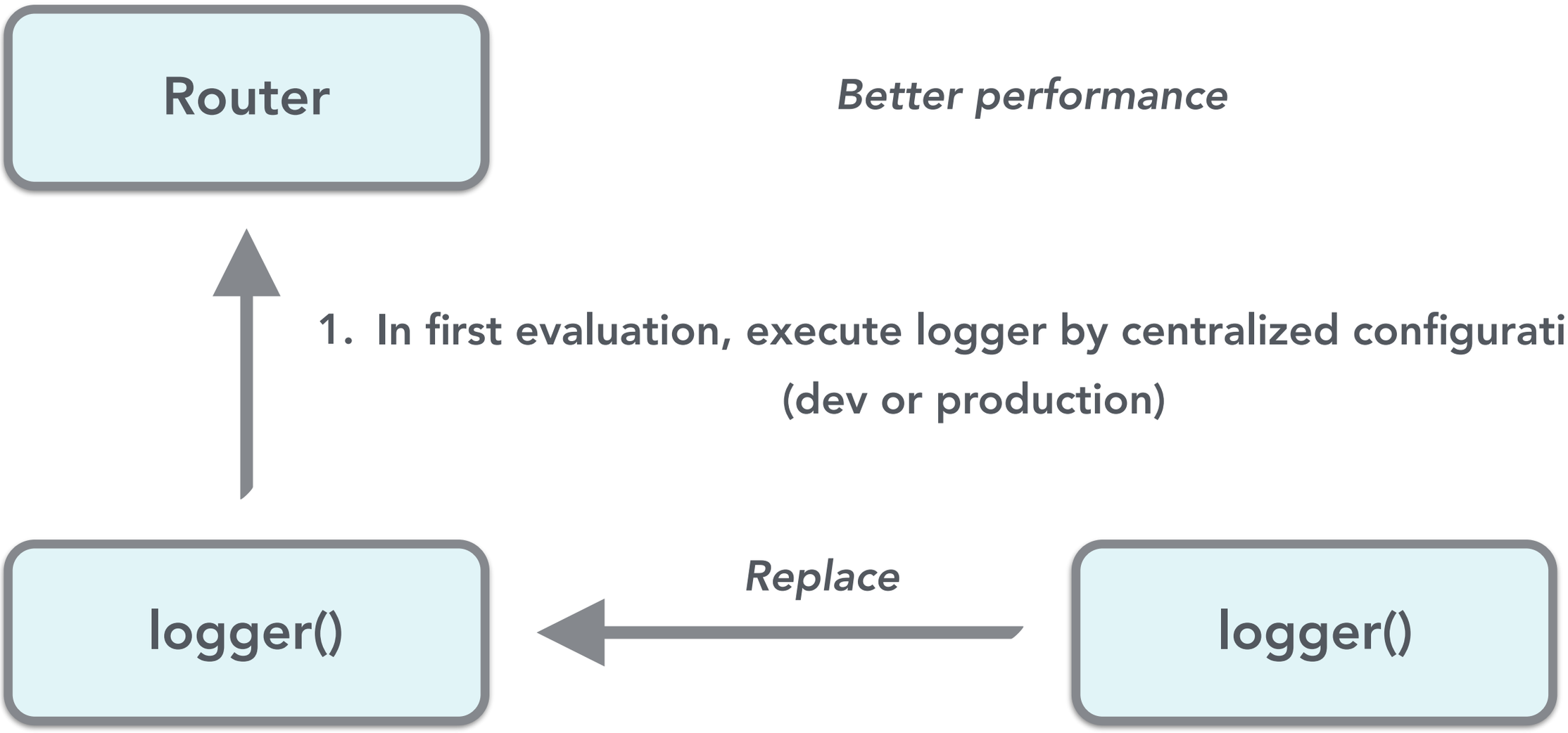
Ajax Decorator



Reduced boilerplate that polluting business logic

Single entry point got higher maintainability

Lazy Definition



2. Child logger function is placed in parent logger function, child replace parent logger function and will used for next evaluation.

Multilingual Support

HTTP EndPoint

Reduced boilerplate that polluting business logic

Single entry point got higher maintainability

1.Decorator invoke negotiator with passing HTTP header

Decorator

2.Negotiator retrive approprite lang by supported langs

3.Rendering template by selected locale in localeSelector

Negotiator

localeSelector()

Searching contents

Location-based content search + pagination in stateless environment

https://www.flickr.com/photos/adam_knight/550678242/

Searching contents (cont.)

Difficulties to calculate circular inclusion in DB

MongoDB provides 2dsphere index with $near aggregator able to search closet element in specified range or all

Searching contents (cont.)

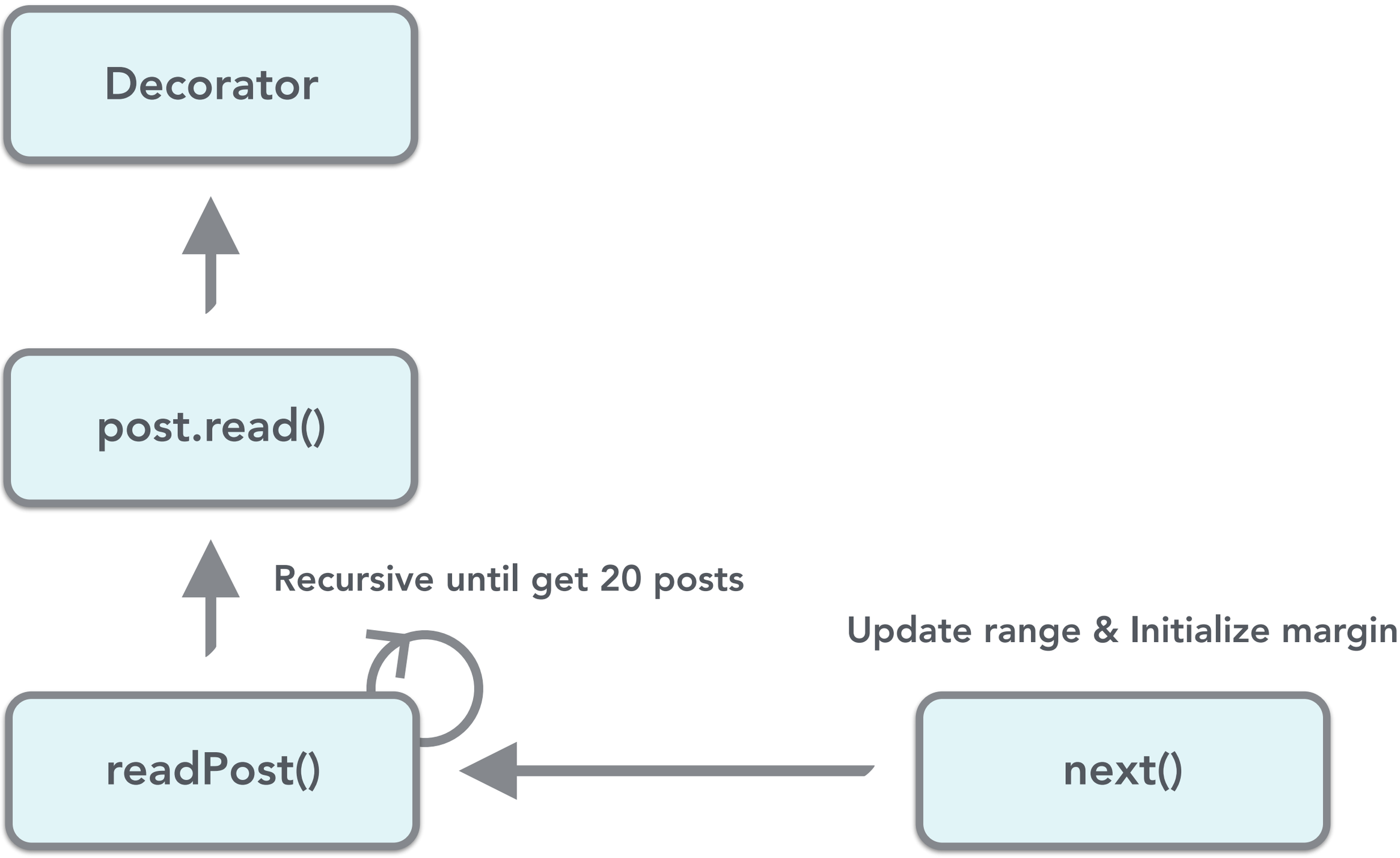
By location coordinate in stateless env.

-> Based in client-side continuity

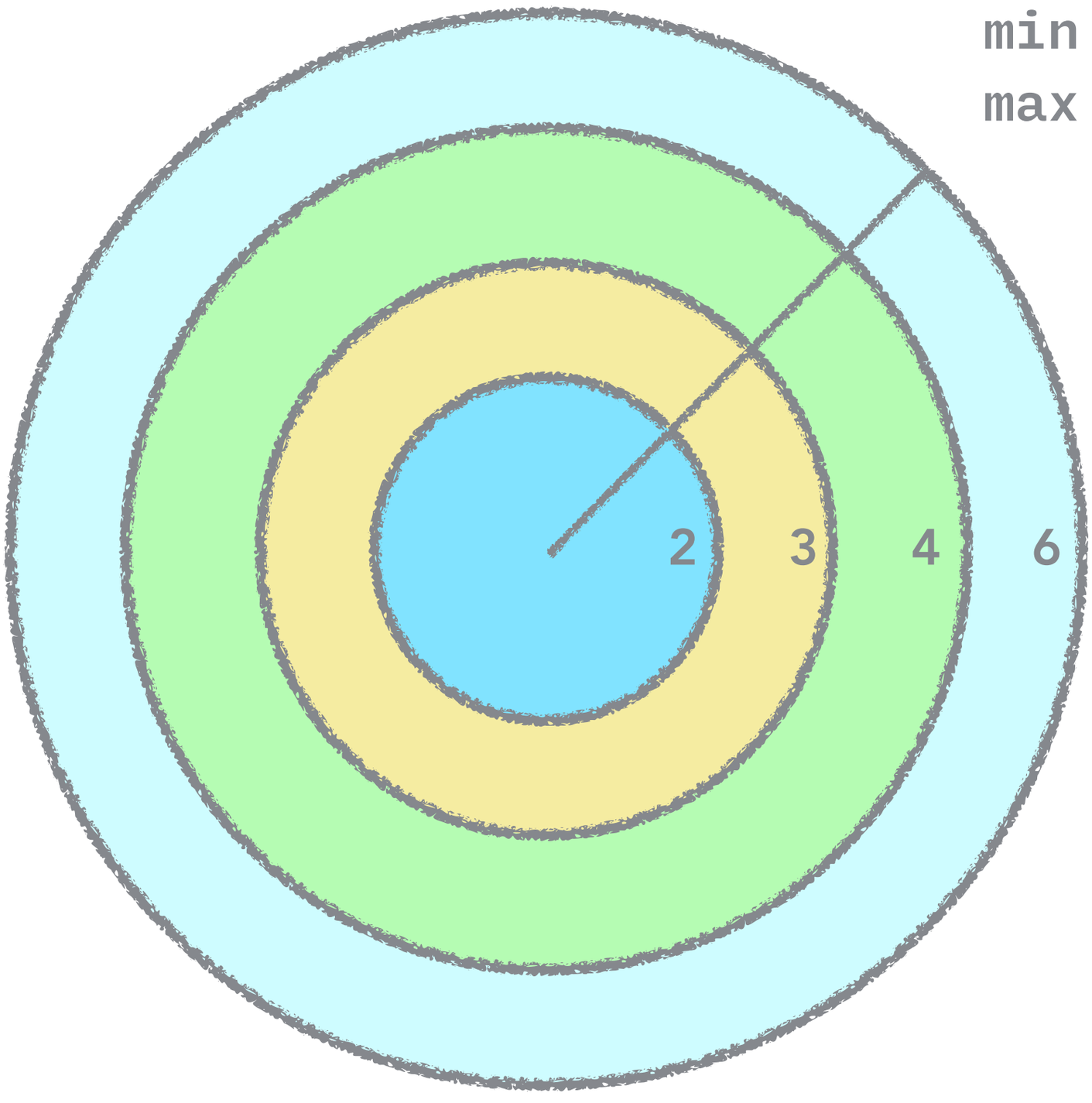
-> Tradeoff between accuracy and performance

-> Prune duplicate in client side

Searching contents (cont.)



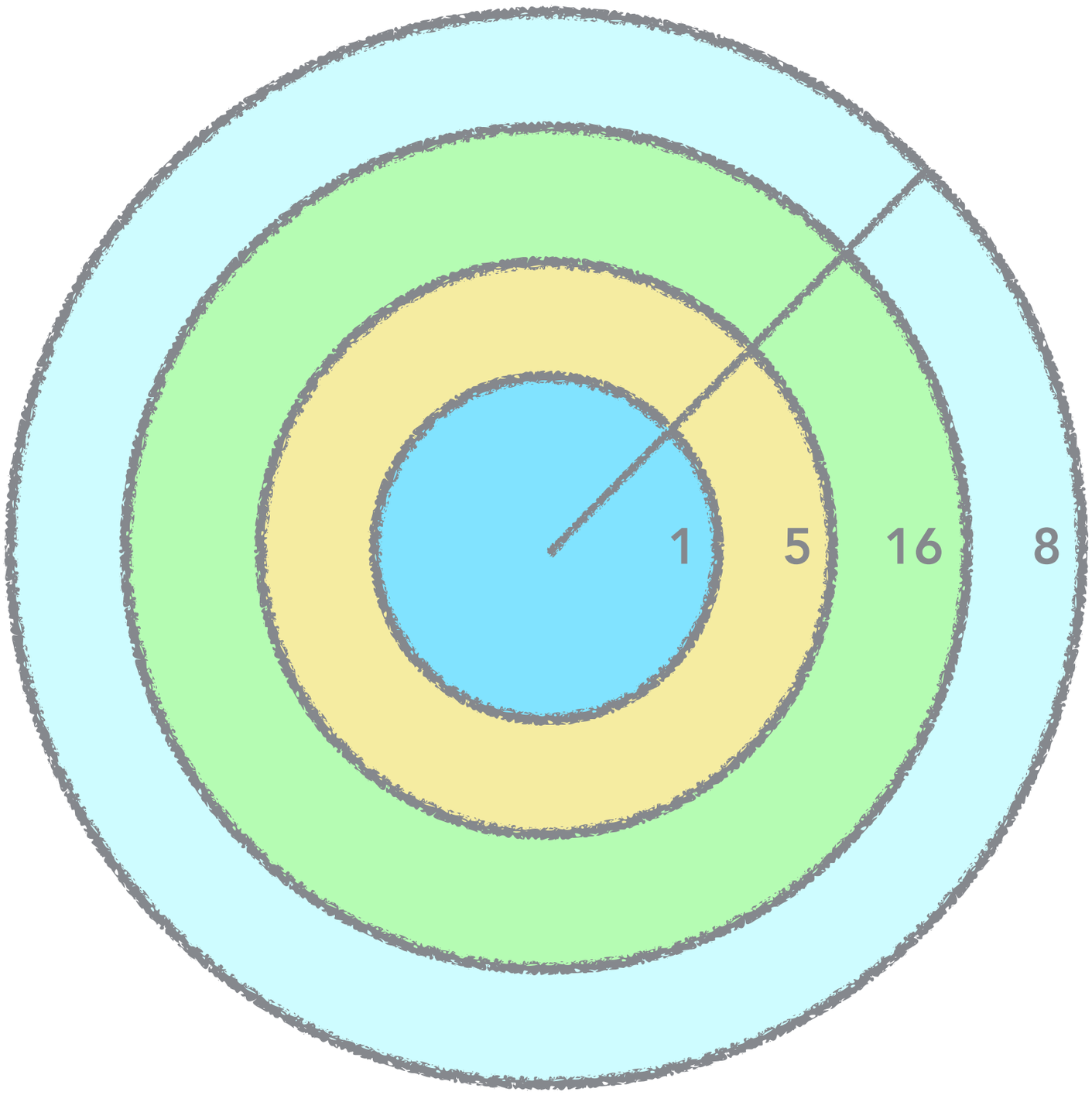
Searching contents (cont.)




```
min = max
max = Math.round(max * 1.3)
```

7 10 13 16 21 … 20000 (km)

Searching contents (cont.)



Loading unit per time : 20

posts in range respectively.

Searching contents (cont.)

Query to get content in specific range with Mongoose

```
DB.Posts.find({
 loc: {
  $near: {
   $geometry: {
    type: 'Point',
    coordinates: loc
   },
    $maxDistance: (Math.round(maxDistance) * 1000),
    $minDistance: (Math.round(minDistance) * 1000)
   }
 }
}).limit(20).skip(margin).exec();
```

Go Real-time

User think current state is latest state

For maximum usability, realtime notification and messaging is required

https://www.flickr.com/photos/menteblu61/263018880

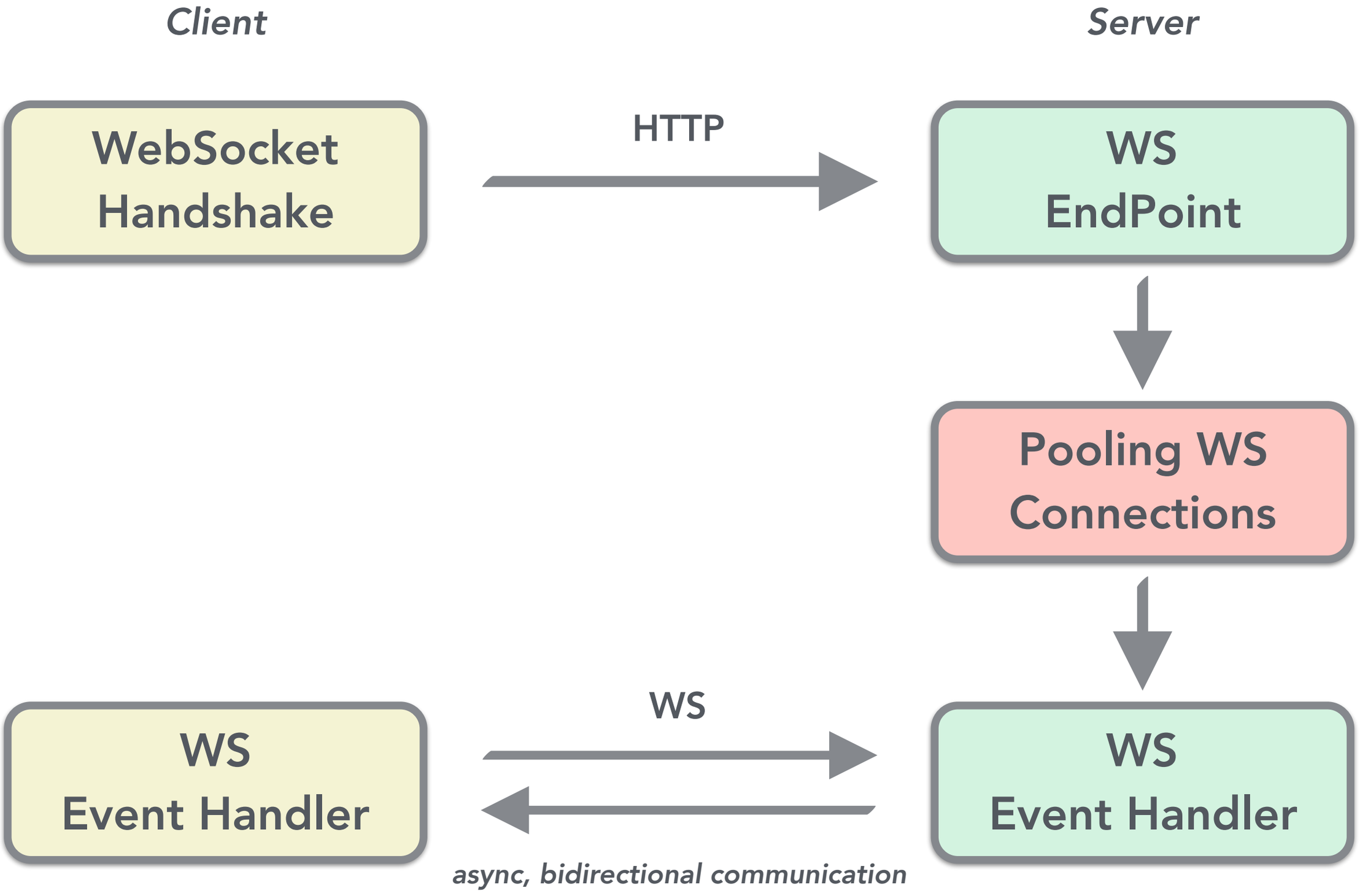
Go Real-time (cont.)

HTTP has request - response structure

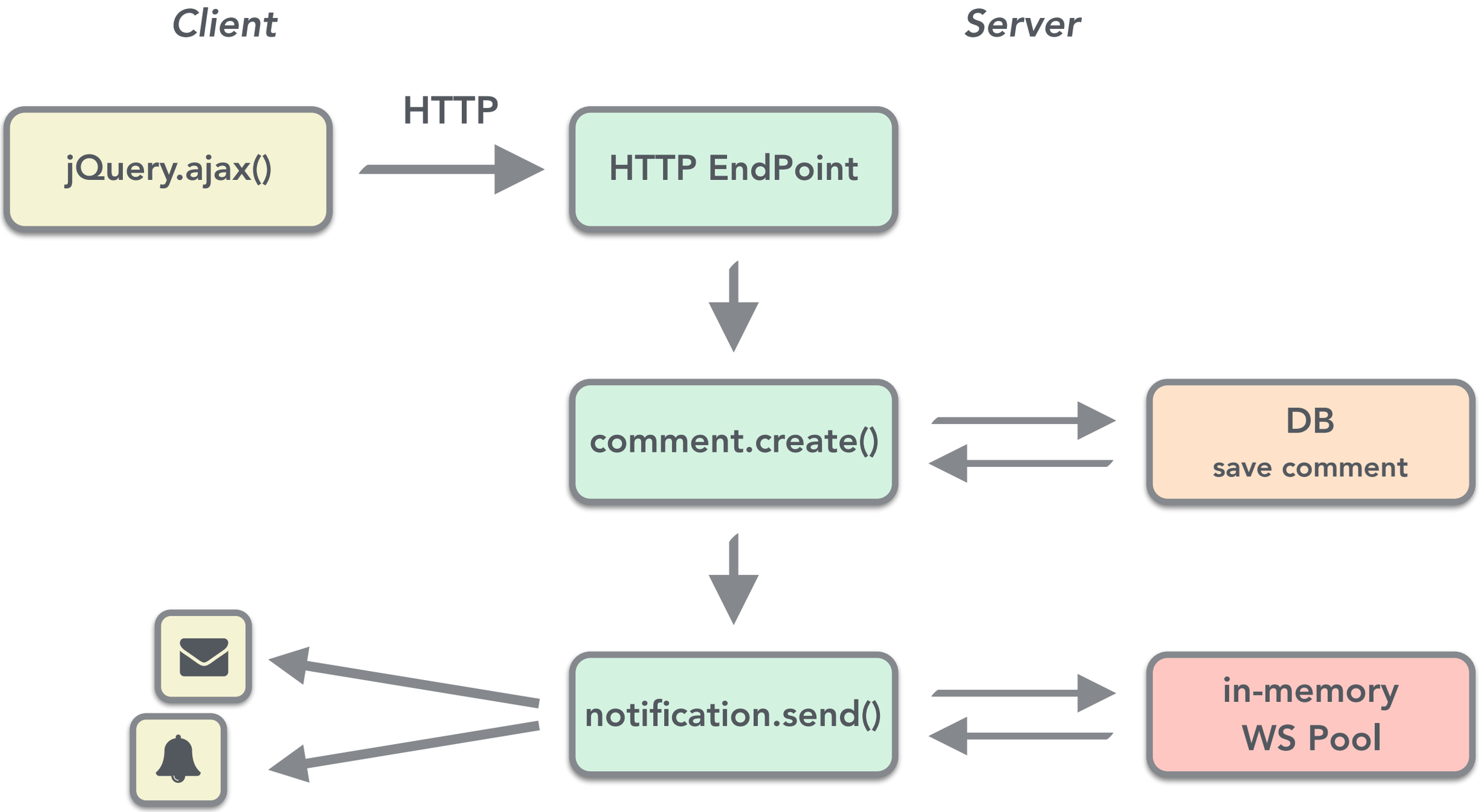
WebSocket for chatting and notification

XMPP for mobile push notification

When user opens web page,



When user creates comment,



Push Real-time Notifications & Messages

Single Page Application

Seamless user experience through,

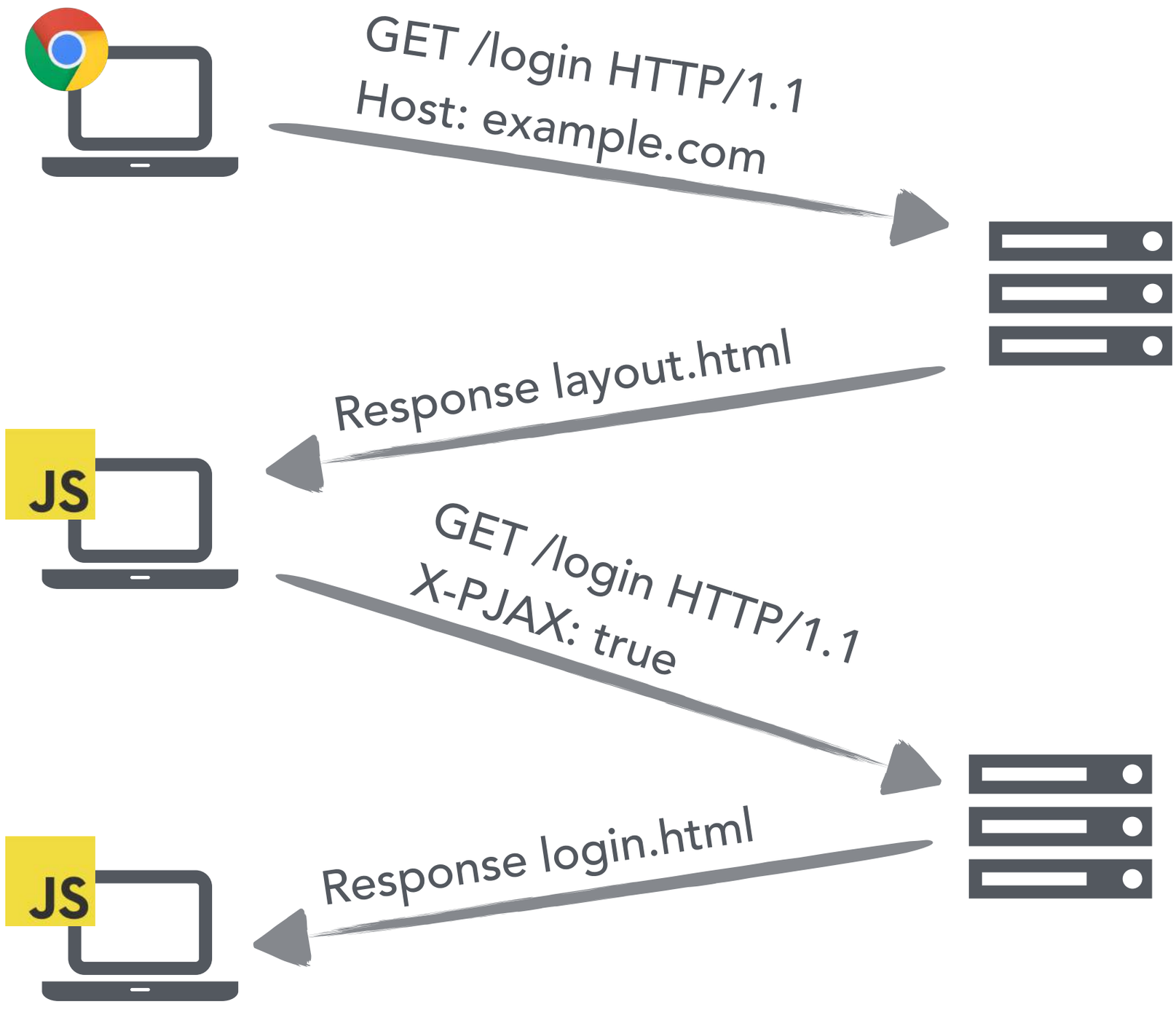
partial page loading and

dynamic content appending

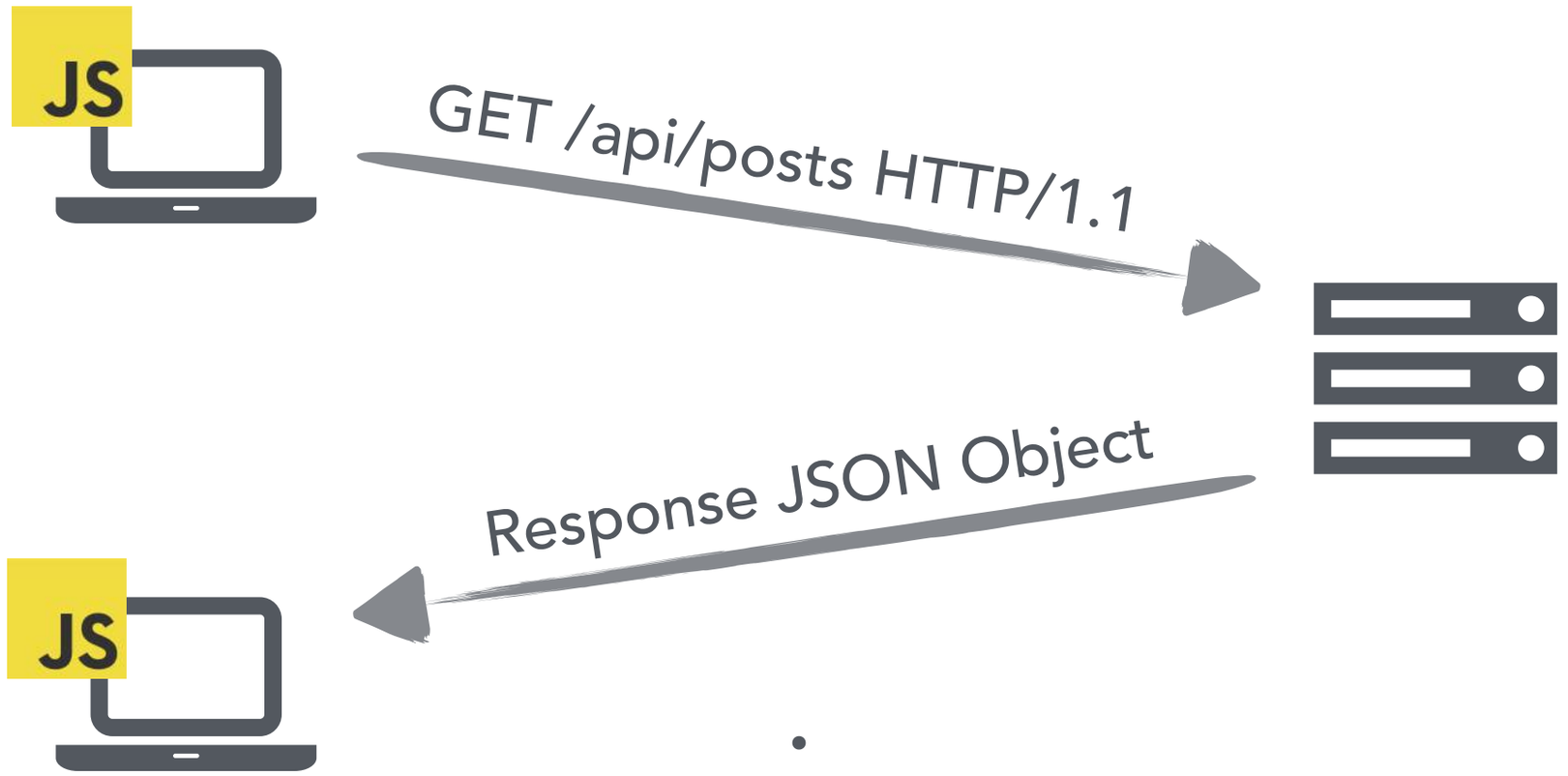
reduced roundtrip to server

https://commons.wikimedia.org/wiki/File:Stainless_Steel_Seamless_Pipe_and_Tube.jpg

Single Page Application (cont.)



Single Page Application (cont.)



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Demo

http://cdn.tokyotimes.com/wp-content/uploads/2010/02/380694def4d989472b6ad06c0563665a1.jpg