

# Web Project Architecture with AngularJS and Java Technologies

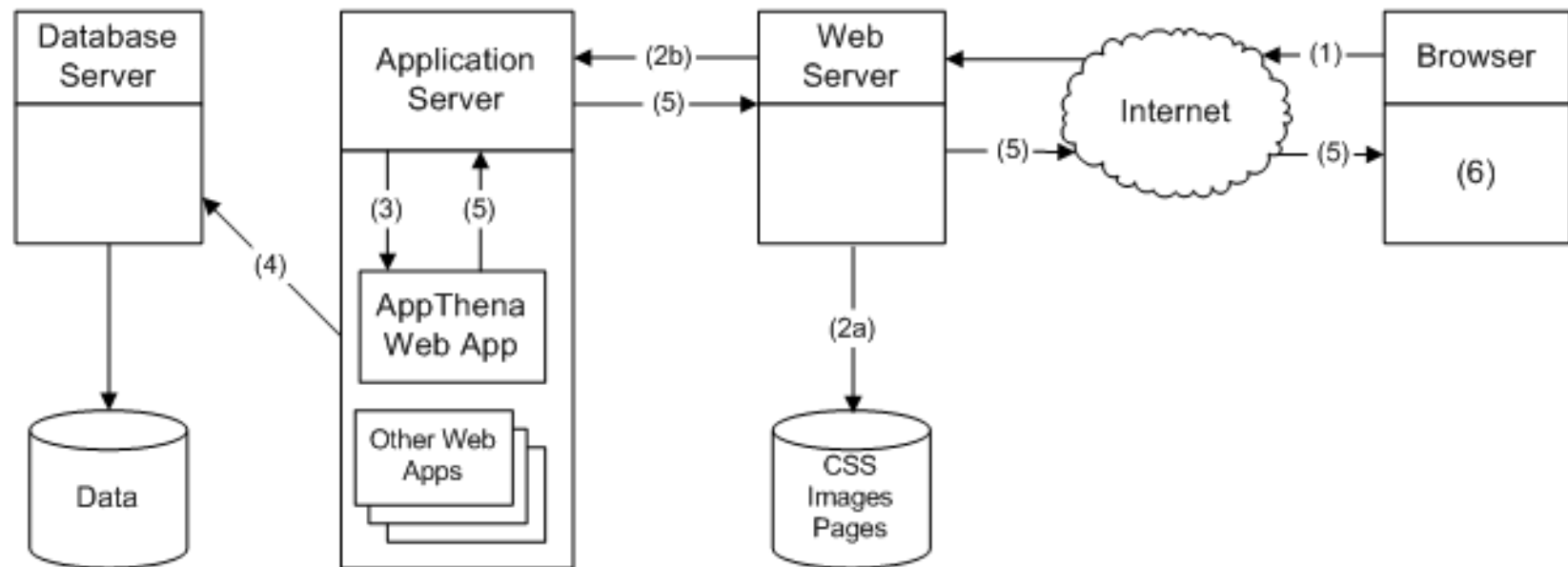
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2018

# Web Application Architecture

Web Application Architecture



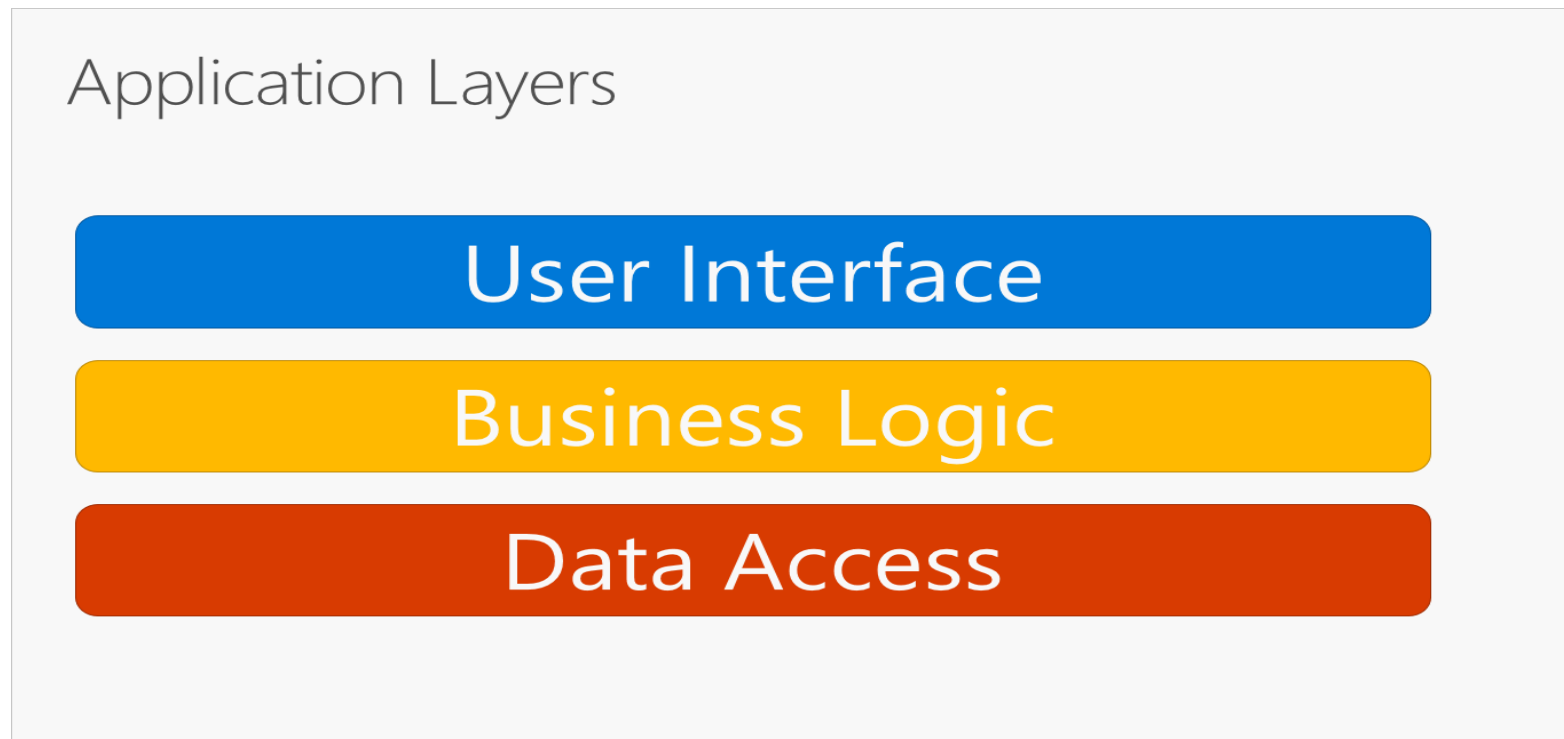
# Common Web Application Architectures

## All-in-one applications

The entire logic of the application is contained in a single project

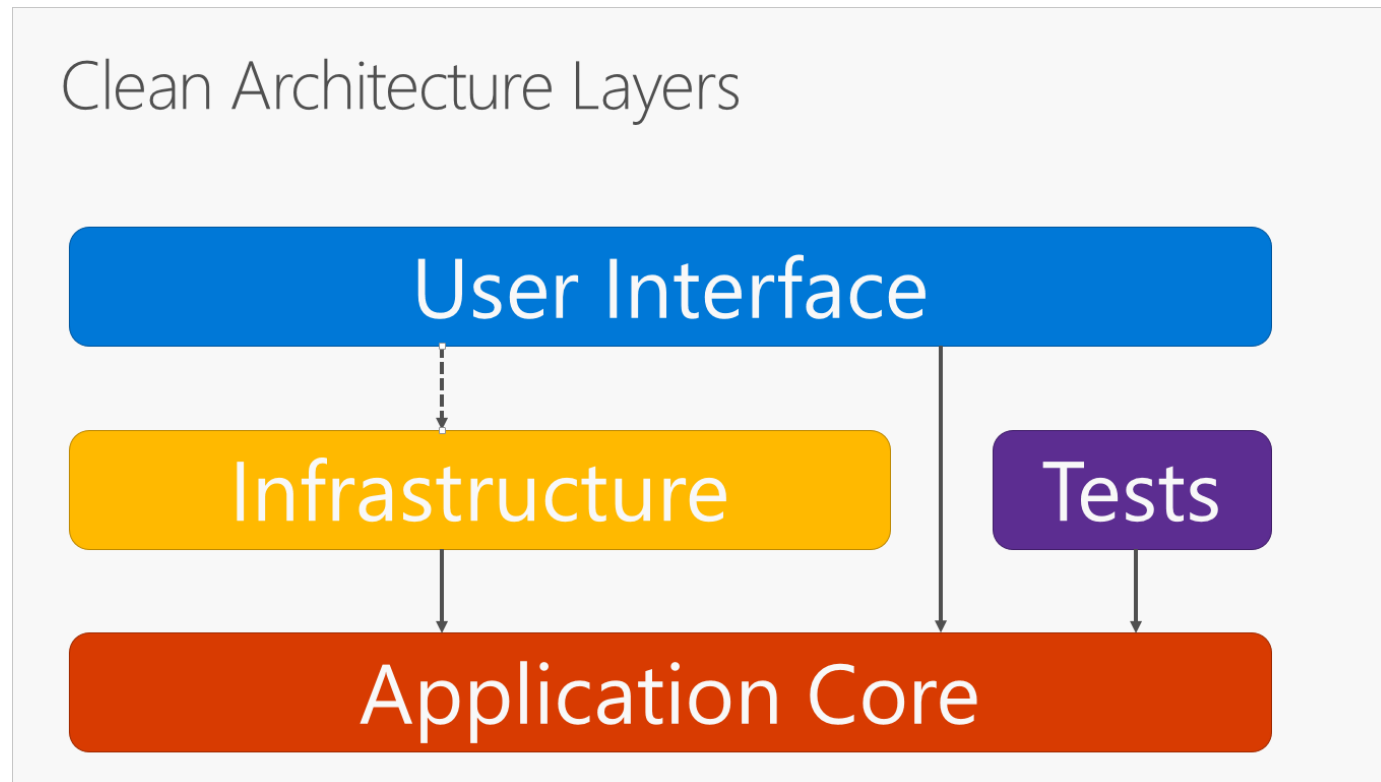
# Common Web Application Architectures

## Traditional "N-Layer" architecture applications



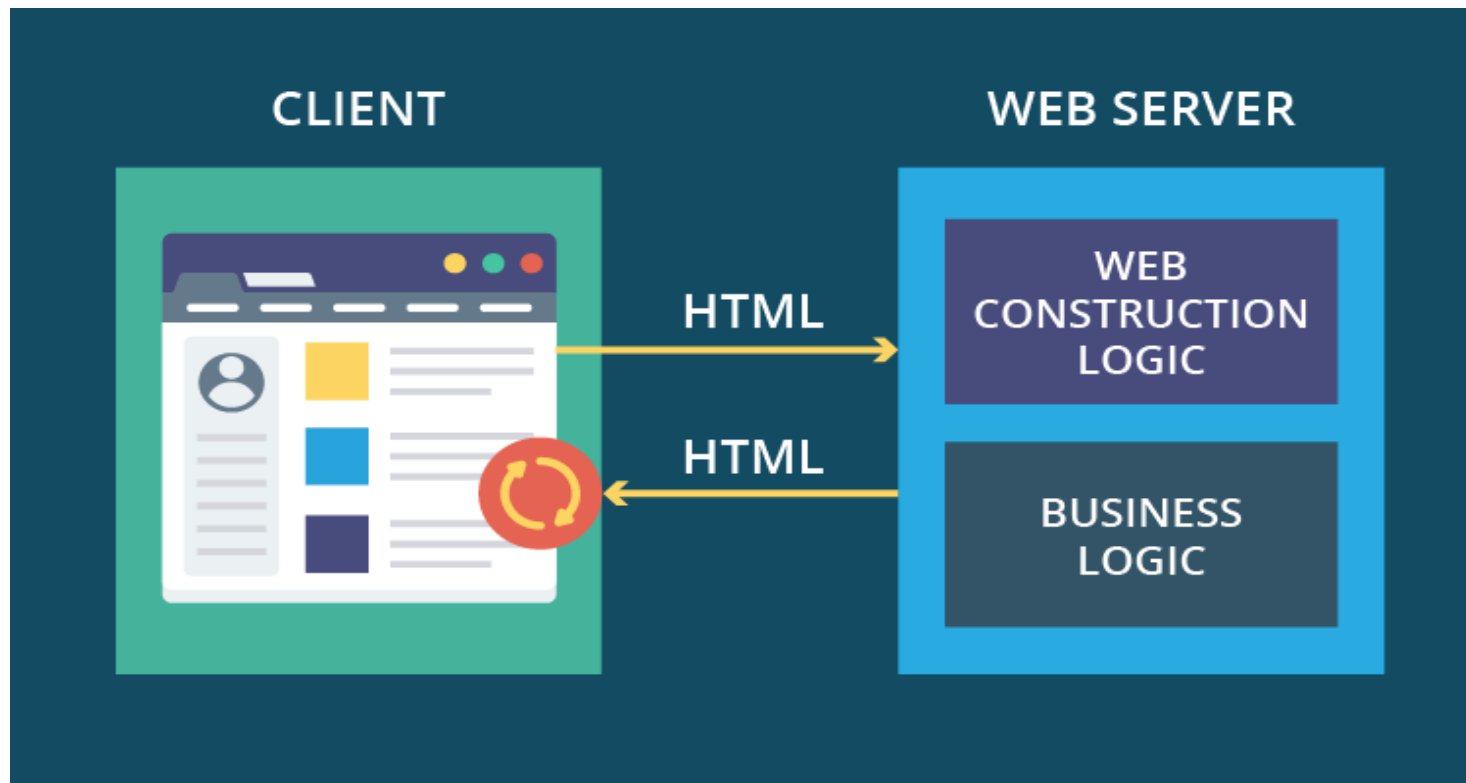
# Common Web Application Architectures

## Clean Architecture (Onion Architecture)



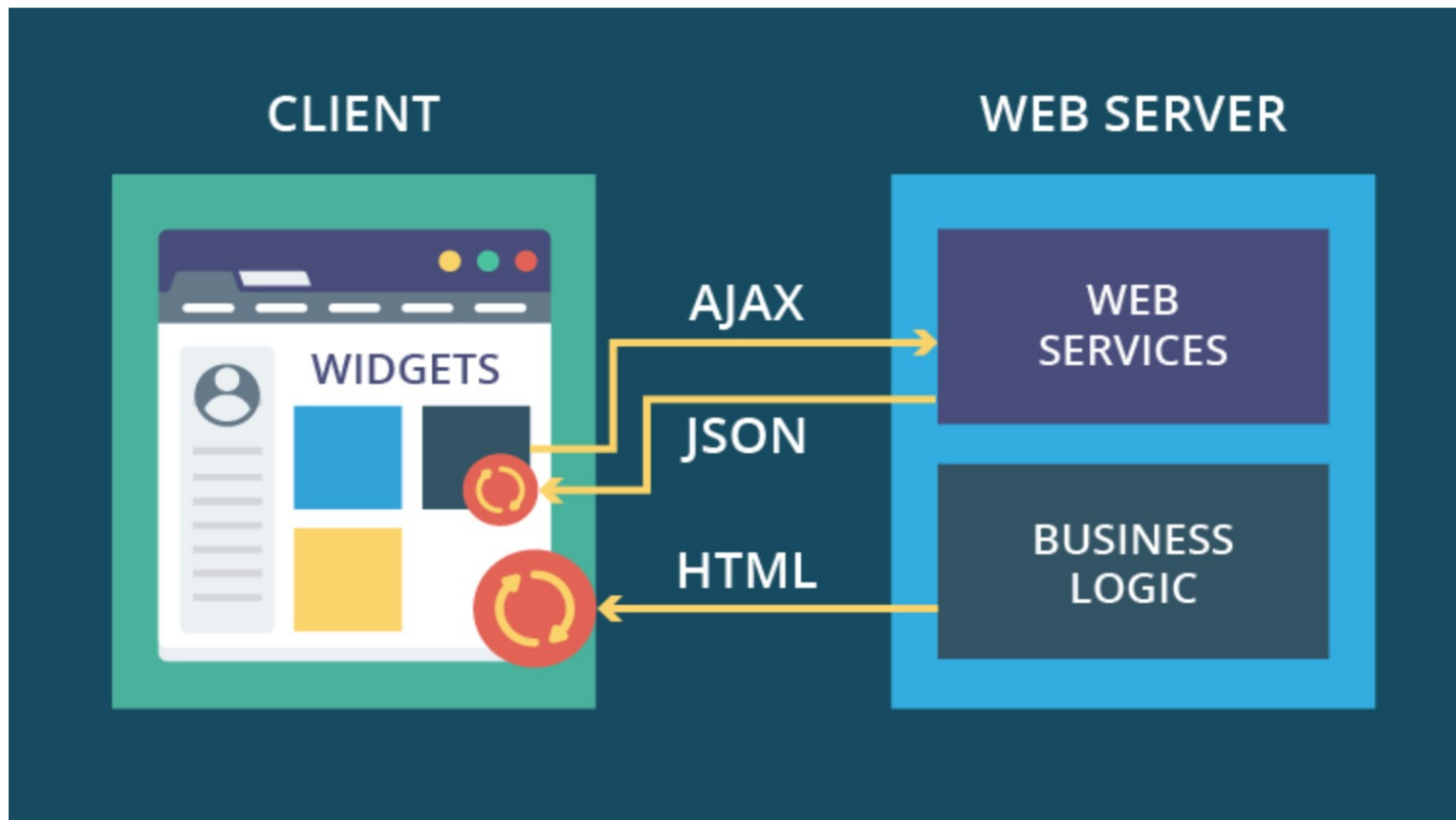
# Types of Web Applications

## Legacy HTML web app



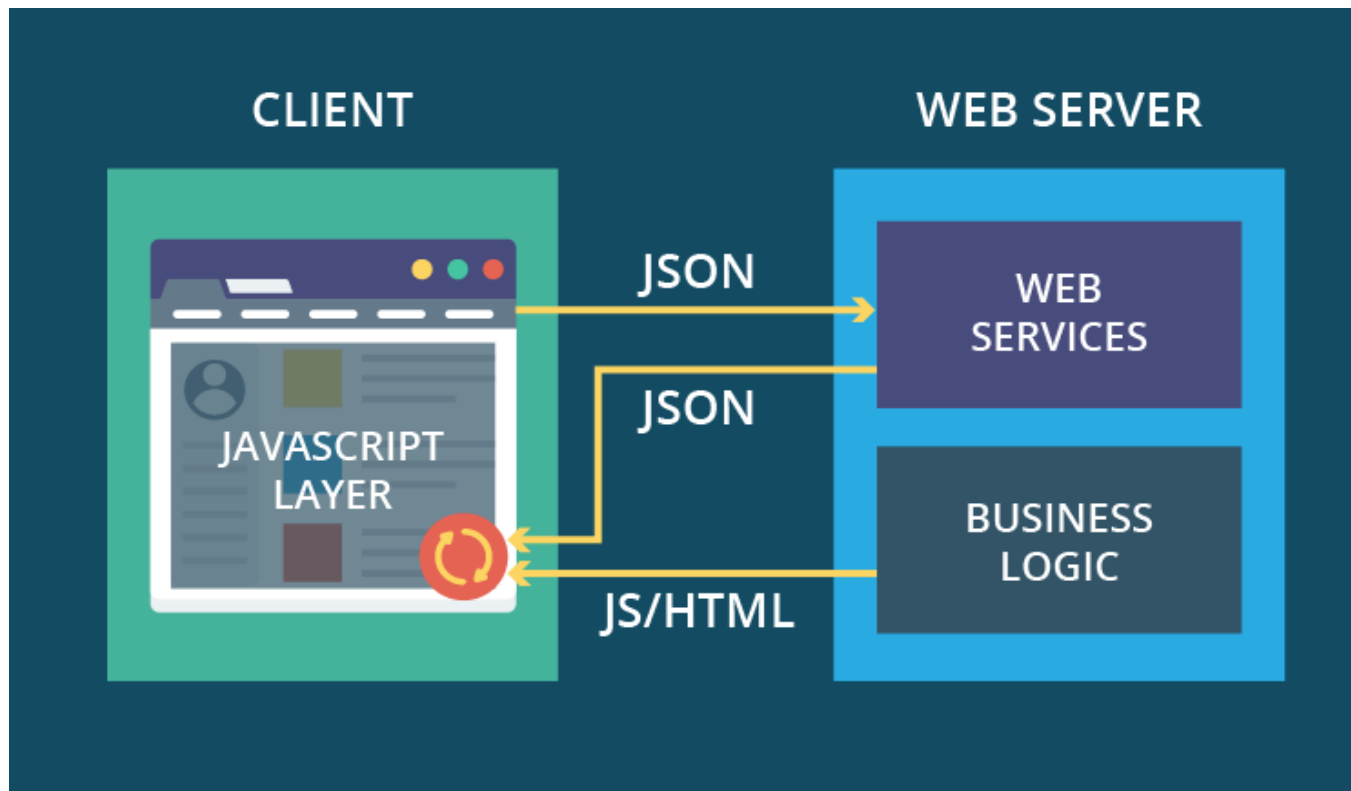
# Types of Web Applications

## Widget web app



# Types of Web Applications

## Single-page web app architecture





# Web Application Development Languages

**With server-side code, languages include:**

Ruby on Rails

PHP

C#

Java

Python

Javascript

# Web Application Development Languages

**With client-side code, languages used include:**

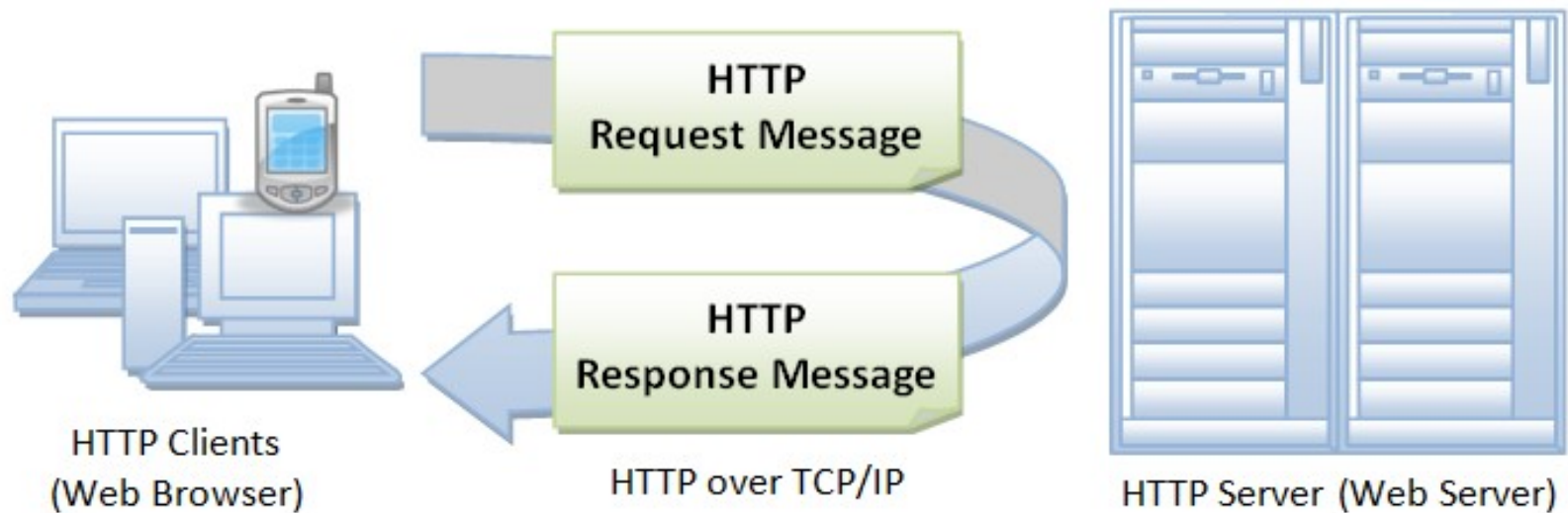
CSS

Javascript

HTML

# Http Protocol

HTTP is the set of rules for transferring files on the World Wide Web.

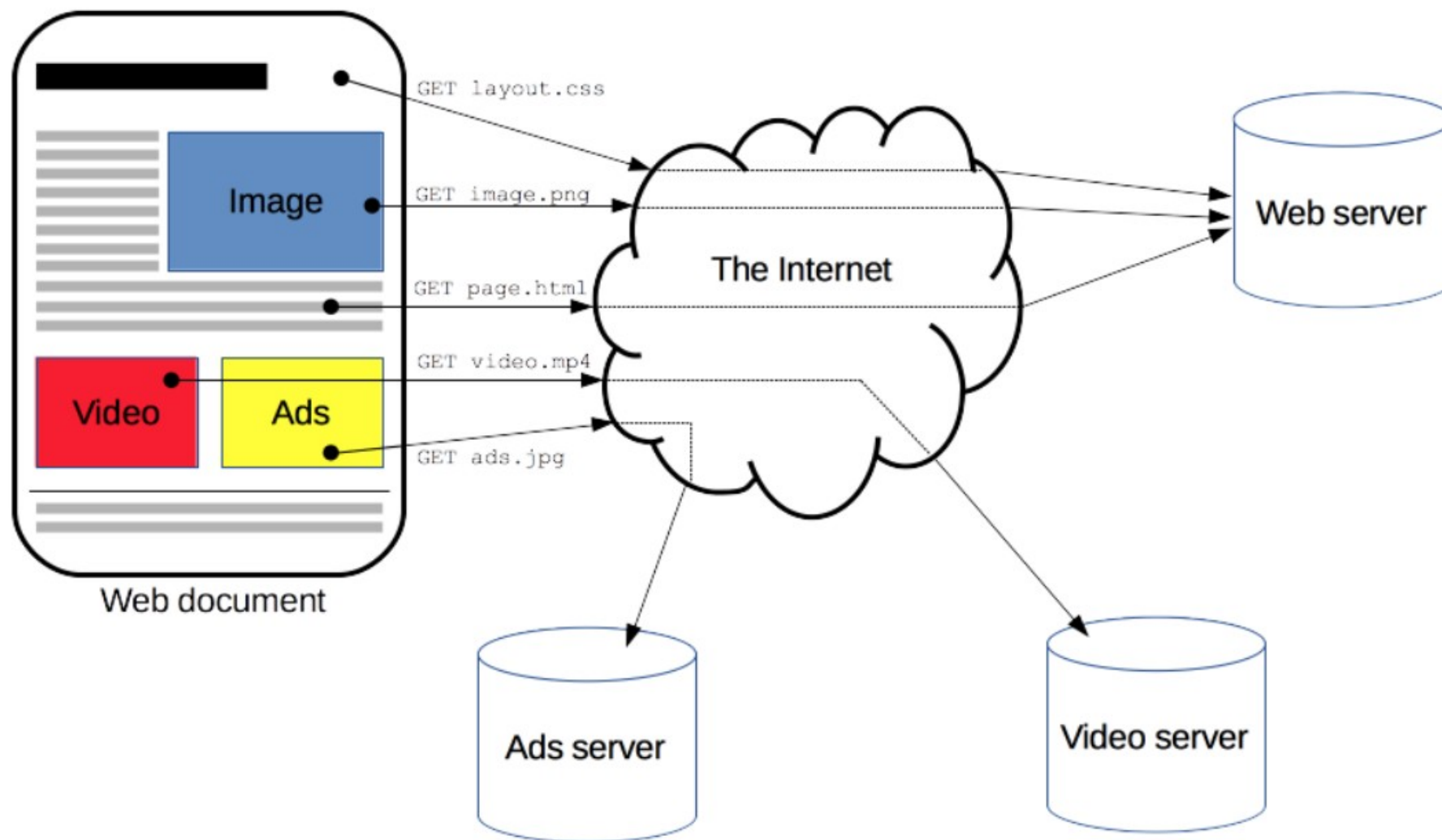


# Http Protocol

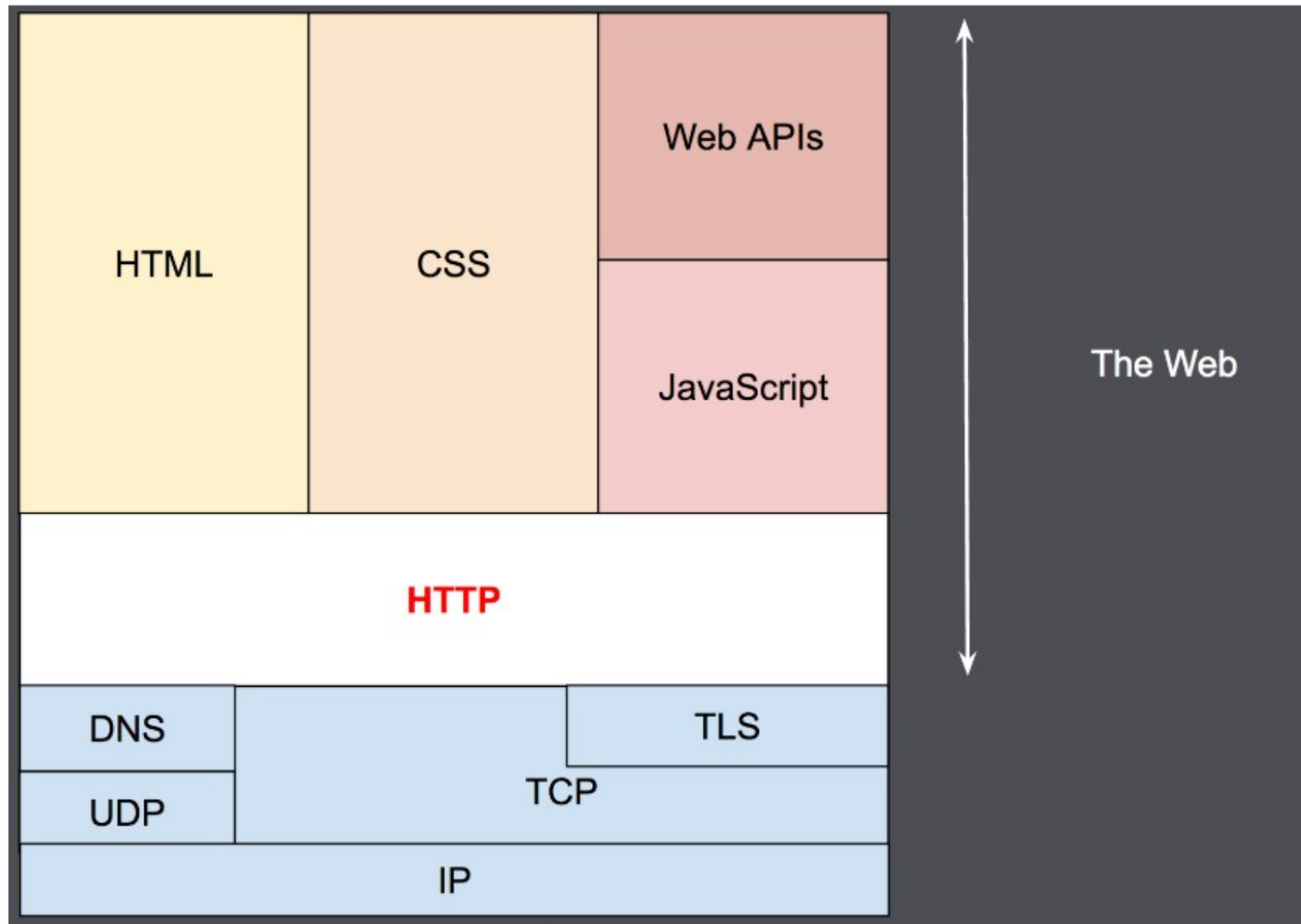
## HTTP Methods

HTTP Method	CRUD
GET	Read
PUT	Update/Replace
PATCH	Partial Update/Modify
DELETE	Delete

# Http Protocol

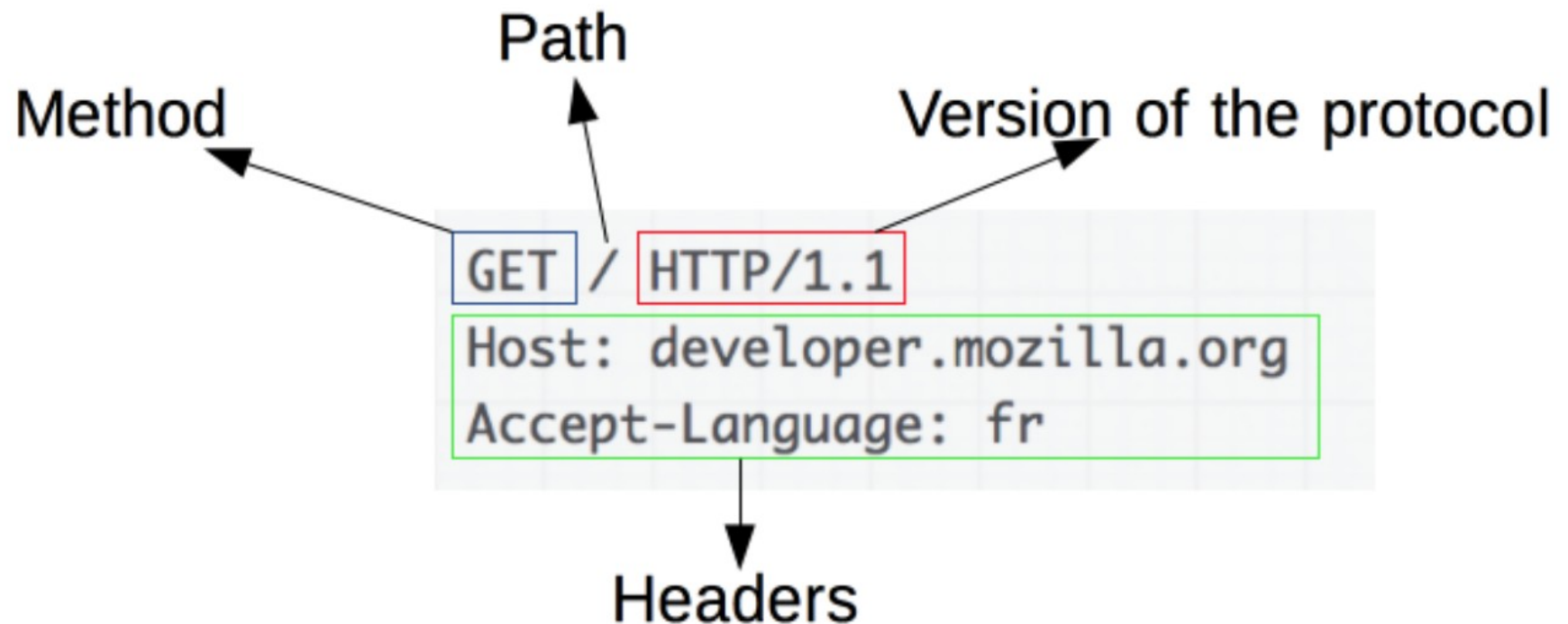


# Http Protocol



# Http Protocol

## HTTP Request Structure



# Http Protocol

## HTTP Response Structure

Version of the protocol      Status code      Status message

HTTP/1.1

200

OK

Date: Sat, 09 Oct 2010 14:28:02 GMT

Server: Apache

Last-Modified: Tue, 01 Dec 2009 20:18:22 GMT

ETag: "51142bc1-7449-479b075b2891b"

Accept-Ranges: bytes

Content-Length: 29769

Content-Type: text/html

Headers



# What is REST architecture?

Representational State Transfer

REST is web standards based architecture and uses HTTP Protocol.

Every component is a resource and a resource is accessed by a common interface using HTTP standard methods.

In REST architecture, a REST Server simply provides access to resources and REST client accesses and modifies the resources.

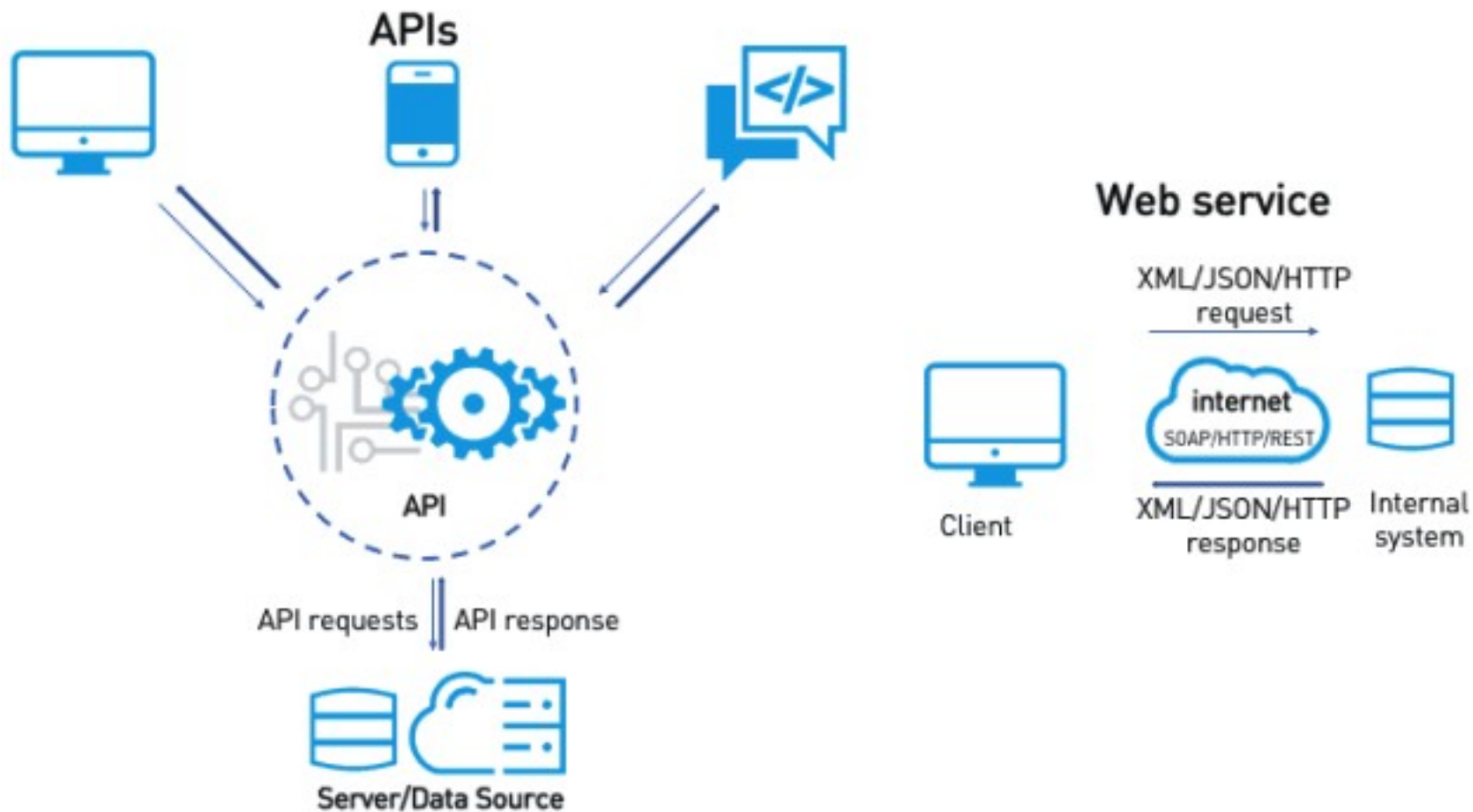
# What is REST architecture?

Each resource in REST architecture is identified by its URI (Uniform Resource Identifier). A URI is of the following format :

`<protocol>://<service-name>/<ResourceType>/<ResourceID>`

`http://localhost:8080/UserManagement/rest/UserService/users`

# What is REST architecture?



# Front-end Development

Modern frontend JavaScript frameworks must respect the Web Components specification.

In modern client-side development, we should build custom HTML elements.

# Popular Javascript Frameworks



# AngularJS

AngularJS is an open source web application framework. It was originally developed in 2009.

AngularJS provides developers options to write client side application in a clean MVC(Model View Controller) way.

Application written in AngularJS is cross-browser compliant.

# AngularJS Core Features

**Data-binding:** It is the automatic synchronization of data between model and view components.

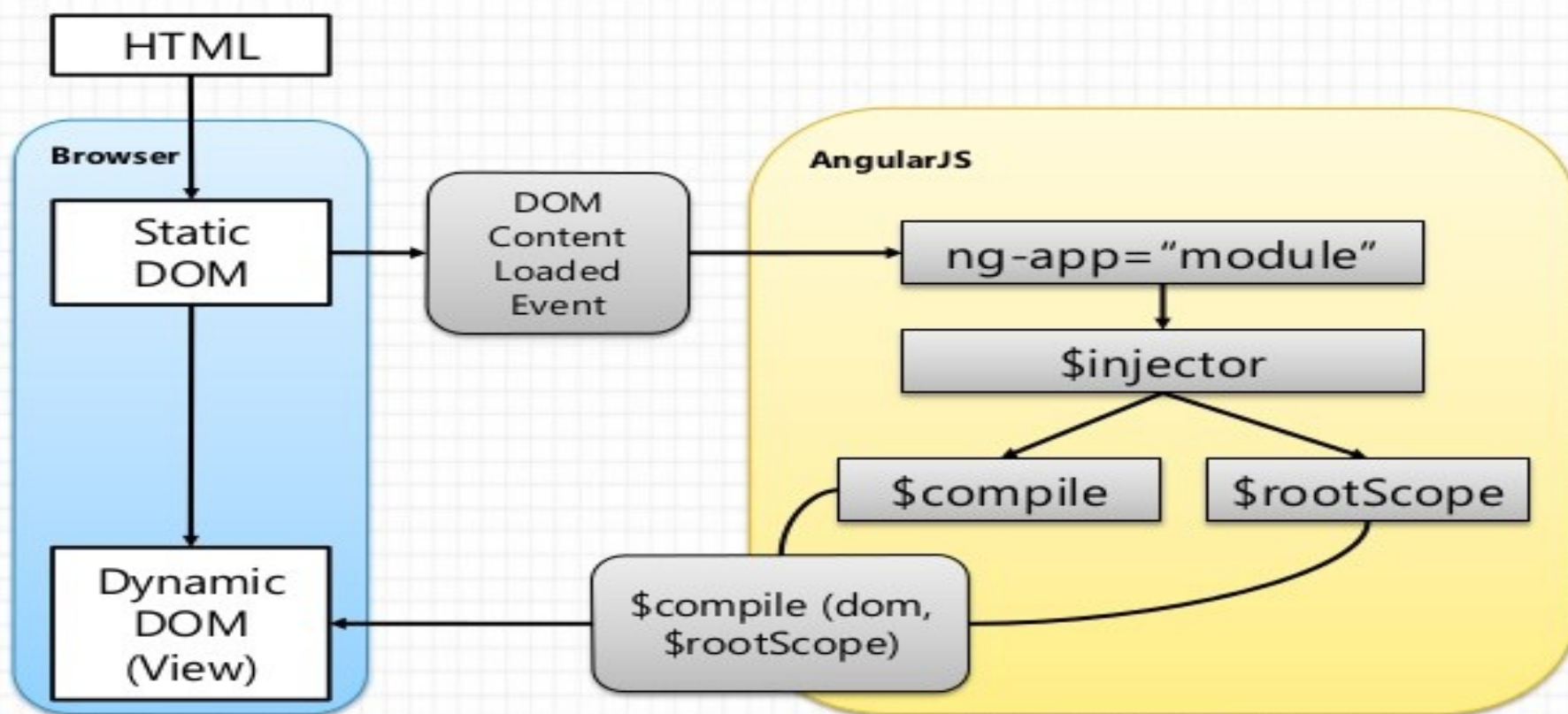
**Scope:** These are objects that refer to the model.

**Dependency Injection:** AngularJS has a built-in dependency injection subsystem

**Controller:** These are JavaScript functions that are bound to a particular scope.

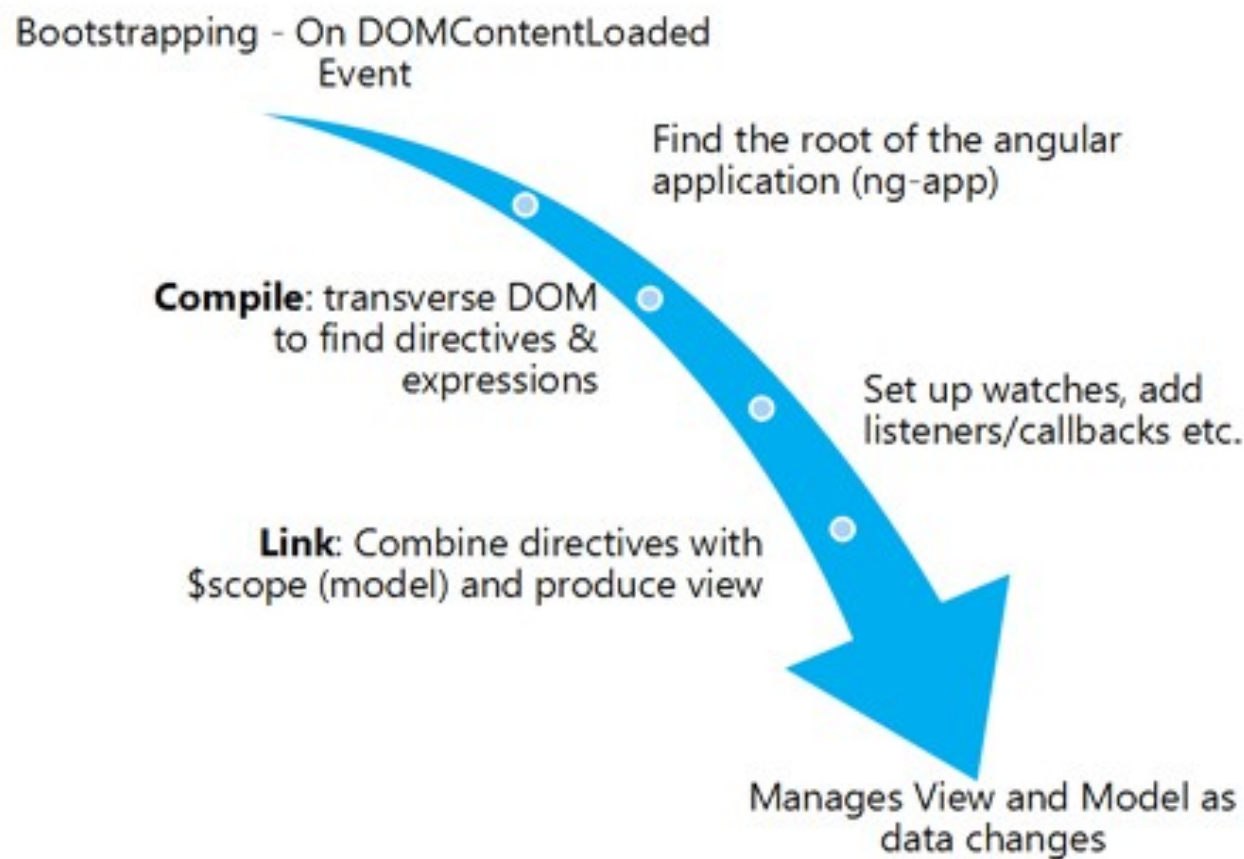
# AngularJS Core Features

## Startup





# AngularJS Core Features



# AngularJS Core Features

**ng-app:** This directive defines and links an AngularJS application to HTML.

**ng-controller:** This directive attaches a controller class to the view.

**ng-model:** This directive binds the values of AngularJS application data to HTML input controls.

**ng-bind:** This directive binds the AngularJS Application data to HTML tags.

# Relational Database Management Systems



**ORACLE®**



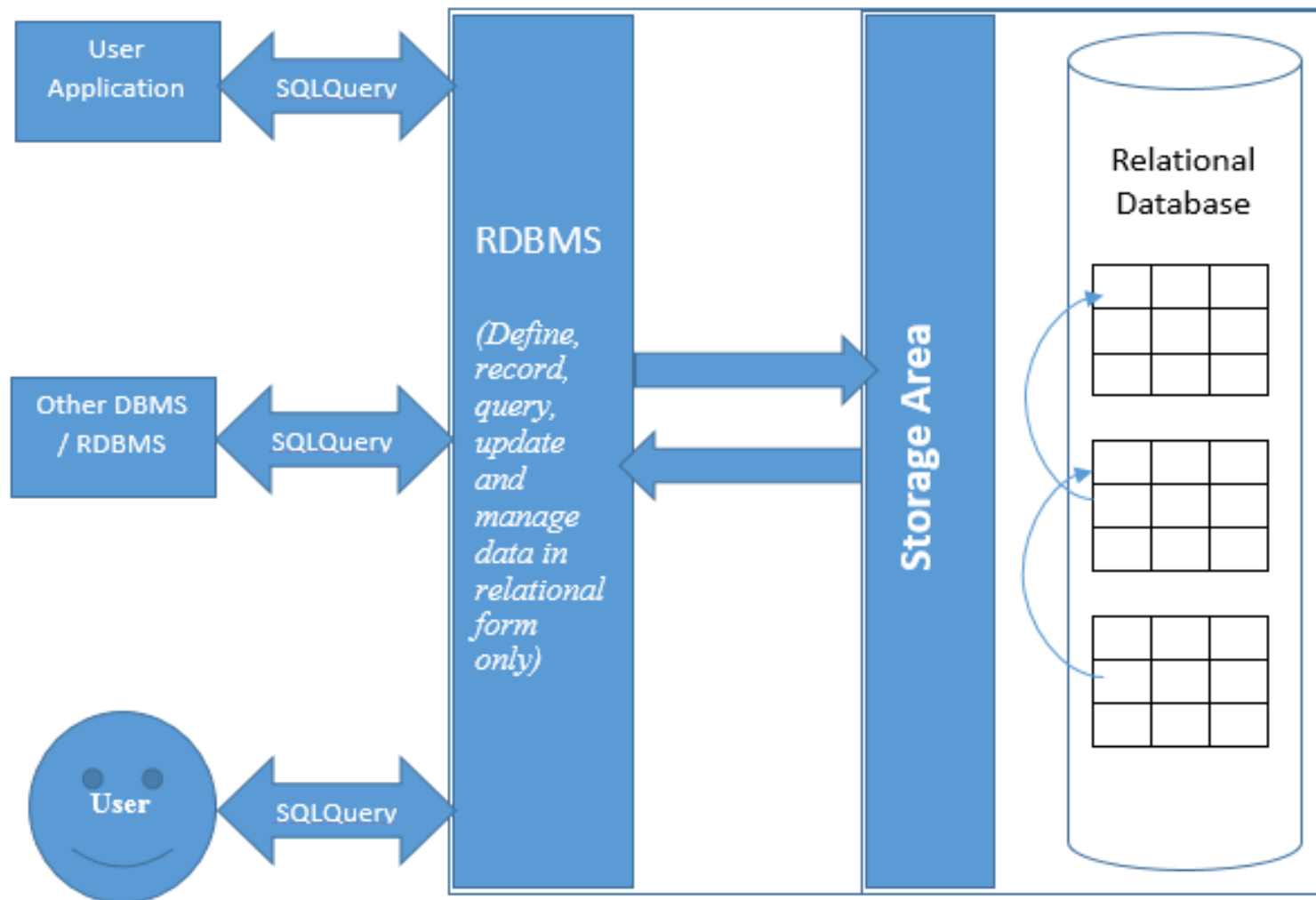
# What is a relational database?

It uses a structure that allows us to identify and access data in relation to another piece of data in the database.

Often, data in a relational database is organized into tables.

name	age	country
Natalia	11	Iceland
Ned	6	New York
Zenas	14	Ireland
Laura	8	Kenya

# What is a relational database?

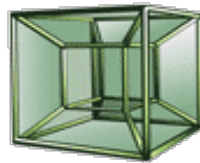


# NoSQL Databases

APACHE  
**HBASE**

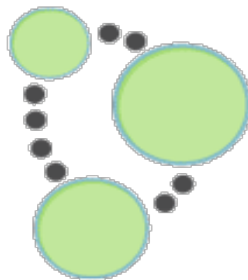


**riak**



**mongoDB**

**HYPERTABLE** INC

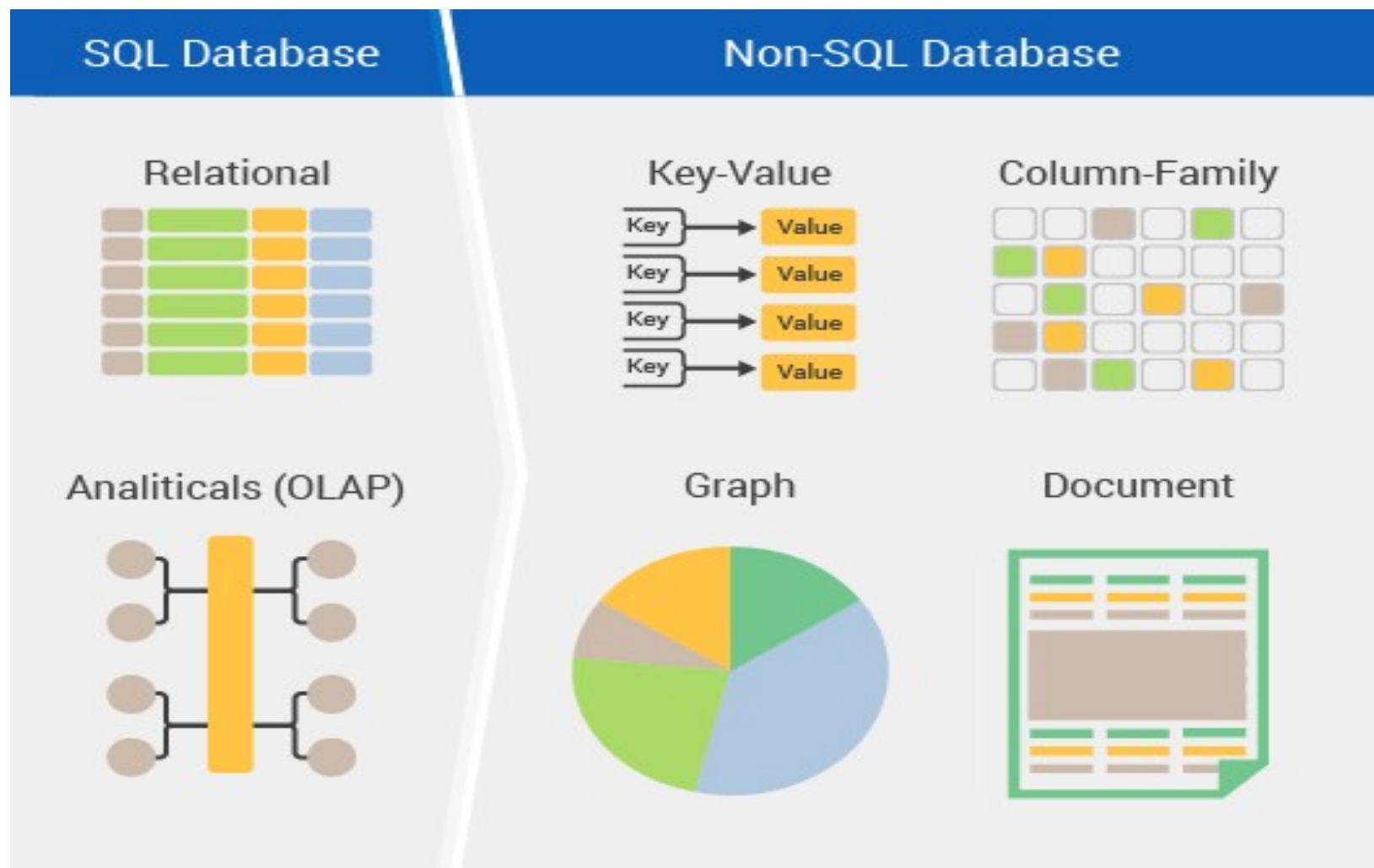


**Neo4j**



**redis**

# NoSQL Databases / RDMS



# Spring Framework

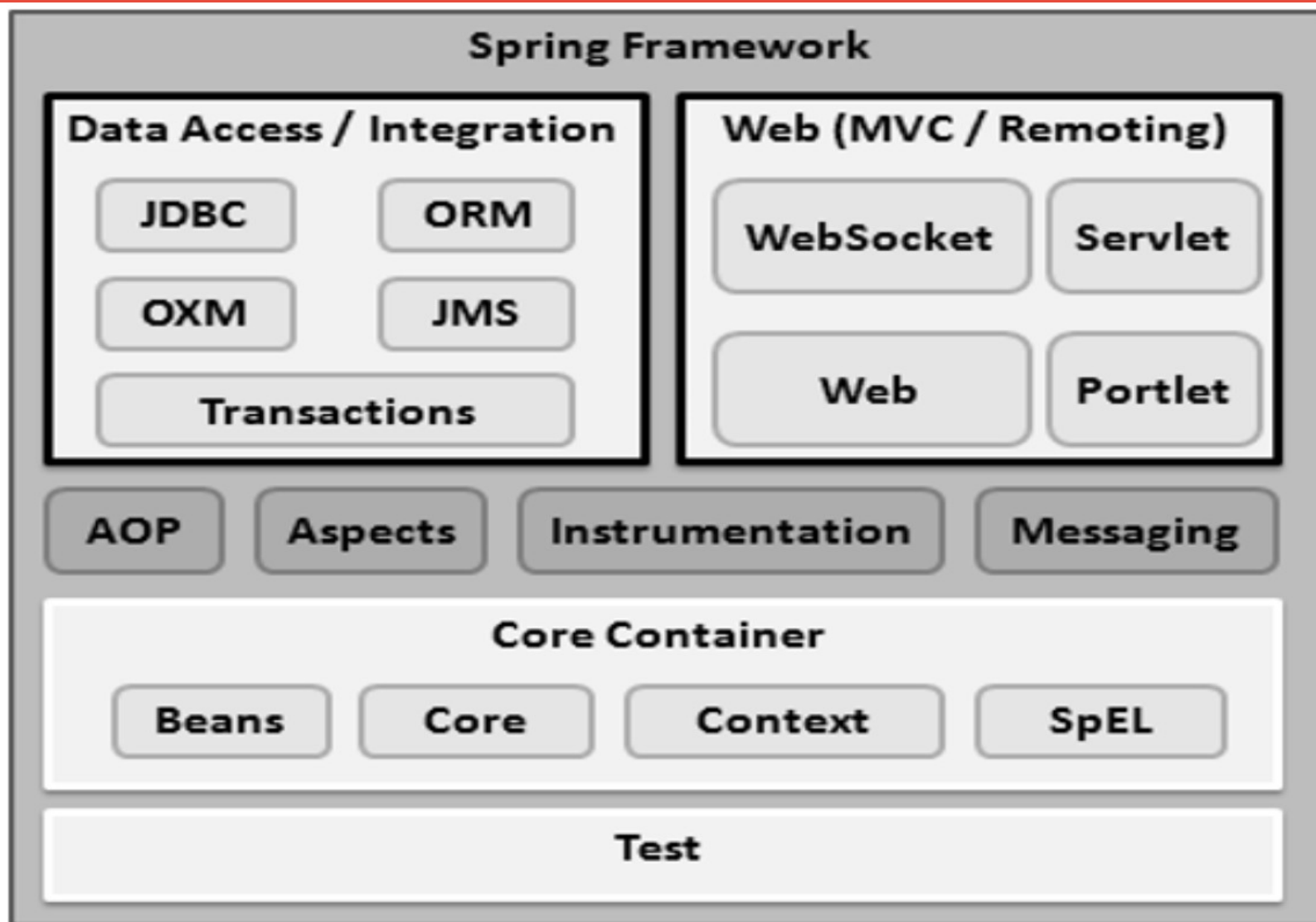
Spring is the most popular application development framework for enterprise Java.

Spring framework targets to make J2EE development easier.





# Spring Framework



# Spring Framework

- \* **Dependency injection** is a programming technique that makes a class independent of its dependencies.
- \* It achieves that by decoupling the usage of an object from its creation.
- \* **Inversion of Control** is a principle in software engineering by which the control of objects or portions of a program is transferred to a container or framework.

# Spring Framework

## Spring Bean Scopes

### Common Scopes

singleton

prototype

### Only Web Application Scopes

request

session

global-session

# What will we use in Spring Framework?

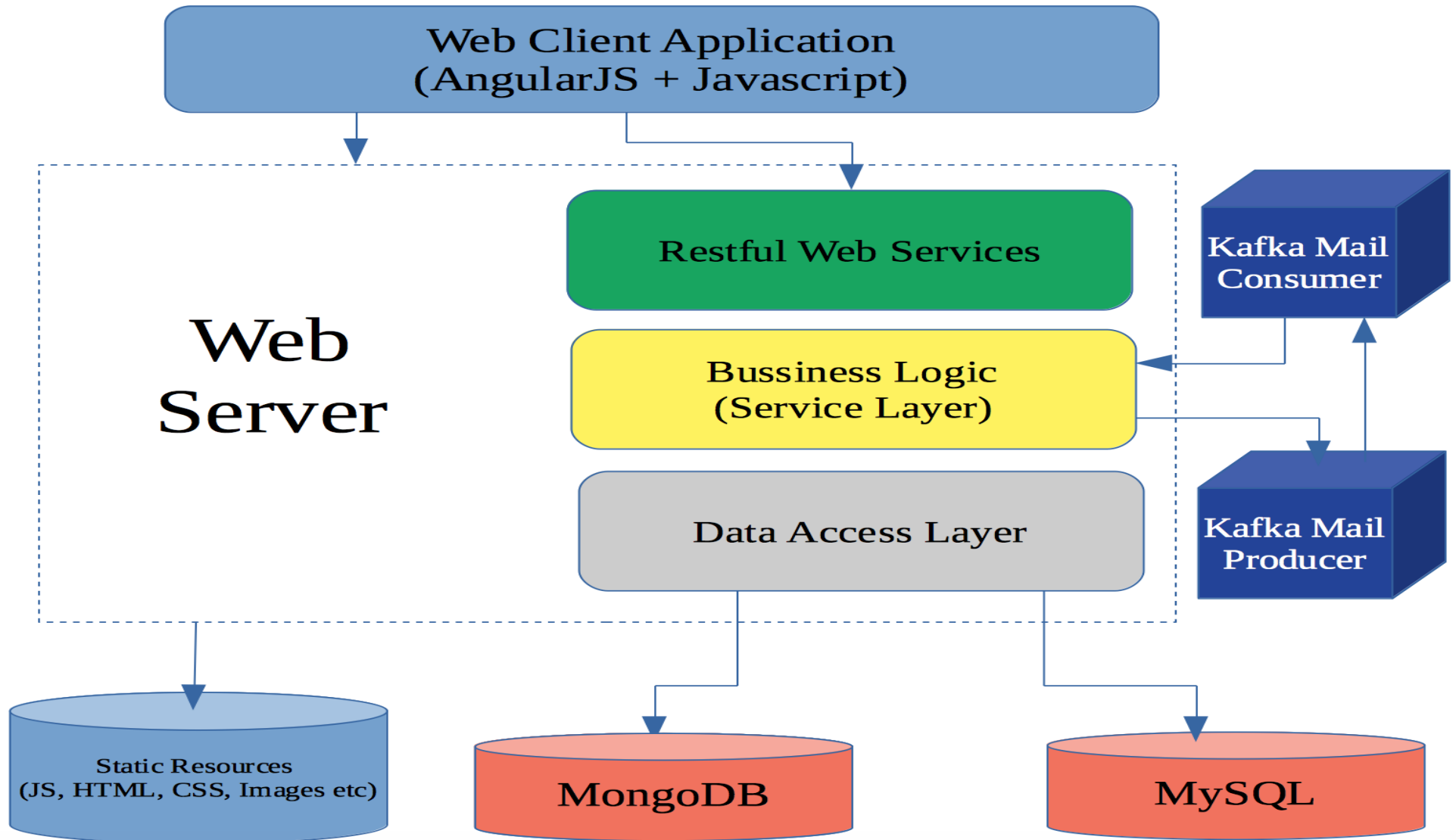
**Spring Core**

**Spring Data**

**Spring MVC**

**Spring Security**

# Personal Book Library Project Architecture



# Personal Book Library Project Architecture



Giriş Paneli

batux

.....

Giriş Yap

2018 Bilgisayar Mühendisleri Odası

# Personal Book Library Project Architecture



Bireysel Kütüphane

batuhan düzgün Çıkış

Kitap Adı\*

Kitap adı ...

Yazarı\*

Yazar adı ...

Kategori \*

Seçiniz

Beğeni Derecesi \*

Seçiniz

Kaydet

ID	Kitap Adı	Yazar	Kategori	Beğeni	Kayıt Tarihi
1	Effective Java	Joshua Bloch	Bilgisayar Kitapları	LIKED_TOO_MUCH	2018-10-12
2	Bir Aşk Hikayesi		Bilgisayar Kitapları	LIKED_TOO_MUCH	2018-10-12
3	Bir Aşk Hikayesi		Bilgisayar Kitapları	LIKED_TOO_MUCH	2018-10-12
4	Angular JS	Batuhan Düzgün	Bilgisayar Kitapları	LIKED	2018-10-13
5	Digital Image Processing	Gonzalez	Bilgisayar Kitapları	LIKED_TOO_MUCH	2018-10-13
6	OpenCV By Example	Josue Blonch	Bilgisayar Kitapları	LIKED	2018-10-13
7	nutuk	mustafa kemal	Bilgisayar Kitapları	LIKED	2018-10-13
8	Php ve Mysql		Bilgisayar Kitapları	LIKED_TOO_MUCH	2018-10-13

# Example Project Source Code

[https://github.com/batux/personal\\_book\\_library\\_web\\_project](https://github.com/batux/personal_book_library_web_project)



# Resources

<https://www.baeldung.com/inversion-control-and-dependency-injection-in-spring>  
<https://stackify.com/dependency-injection/>  
<https://apiumhub.com/tech-blog-barcelona/top-javascript-frameworks/>  
[https://www.tutorialspoint.com/angularjs/angularjs\\_overview.htm](https://www.tutorialspoint.com/angularjs/angularjs_overview.htm)  
<https://www.tutorialspoint.com/restful/index.htm>  
<https://testautomationresources.com/api-testing/differences-web-services-api/>  
<https://docs.microsoft.com/en-us/dotnet/standard/modern-web-apps-azure-architecture/common-web-application-architectures>  
<https://stackify.com/web-application-architecture/>  
<https://spring.io/guides/gs/caching/>  
<https://www.baeldung.com/spring-data-mongodb-tutorial>  
<https://www.docker.com/>  
<https://www.scnsoft.com/blog/web-application-architecture>  
<https://www.baeldung.com/spring-kafka>  
<https://www.baeldung.com/spring-cache-tutorial>  
<https://medium.com/@suci/running-apache-kafka-on-docker-c312ebd70413>  
<https://examples.javacodegeeks.com/enterprise-java/spring/write-transactional-unit-tests-spring/>

**The End**

**Questions ?**

**Thank you**