

Web Project Architecture with AngularJS and Java Technologies

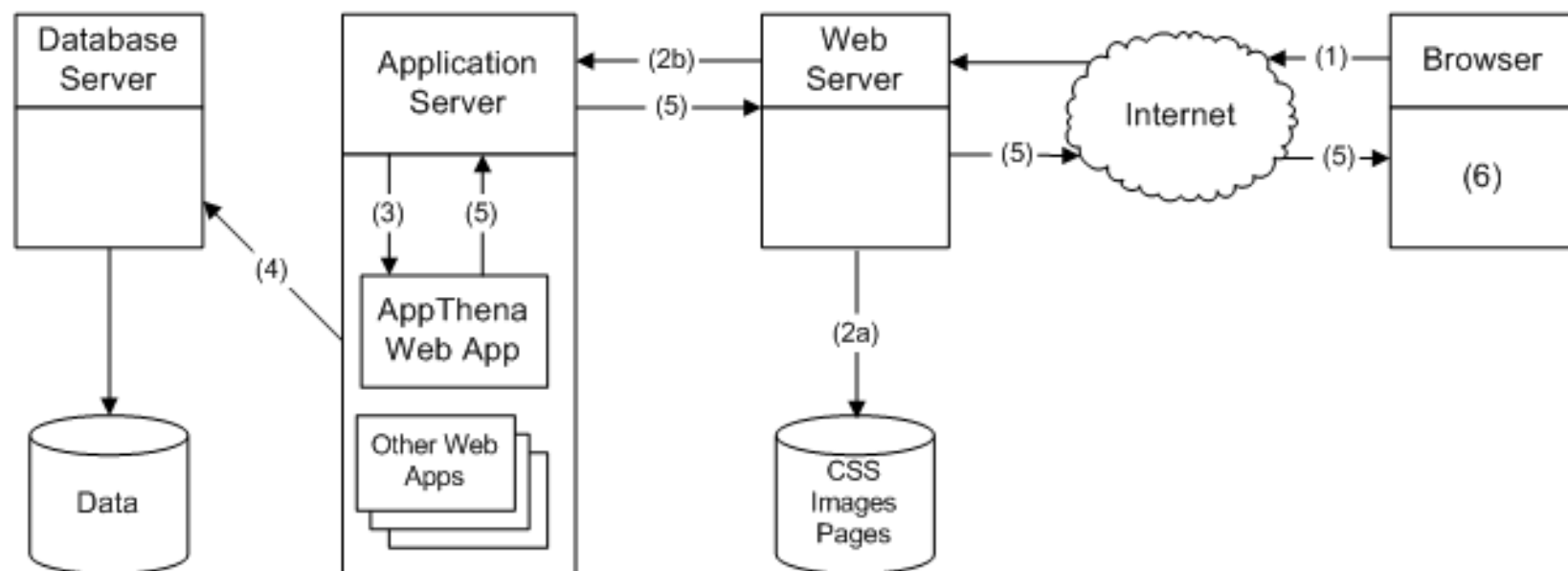
Batuhan Düzgün

batuhan.duzgun@windowslive.com

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

Application Layers

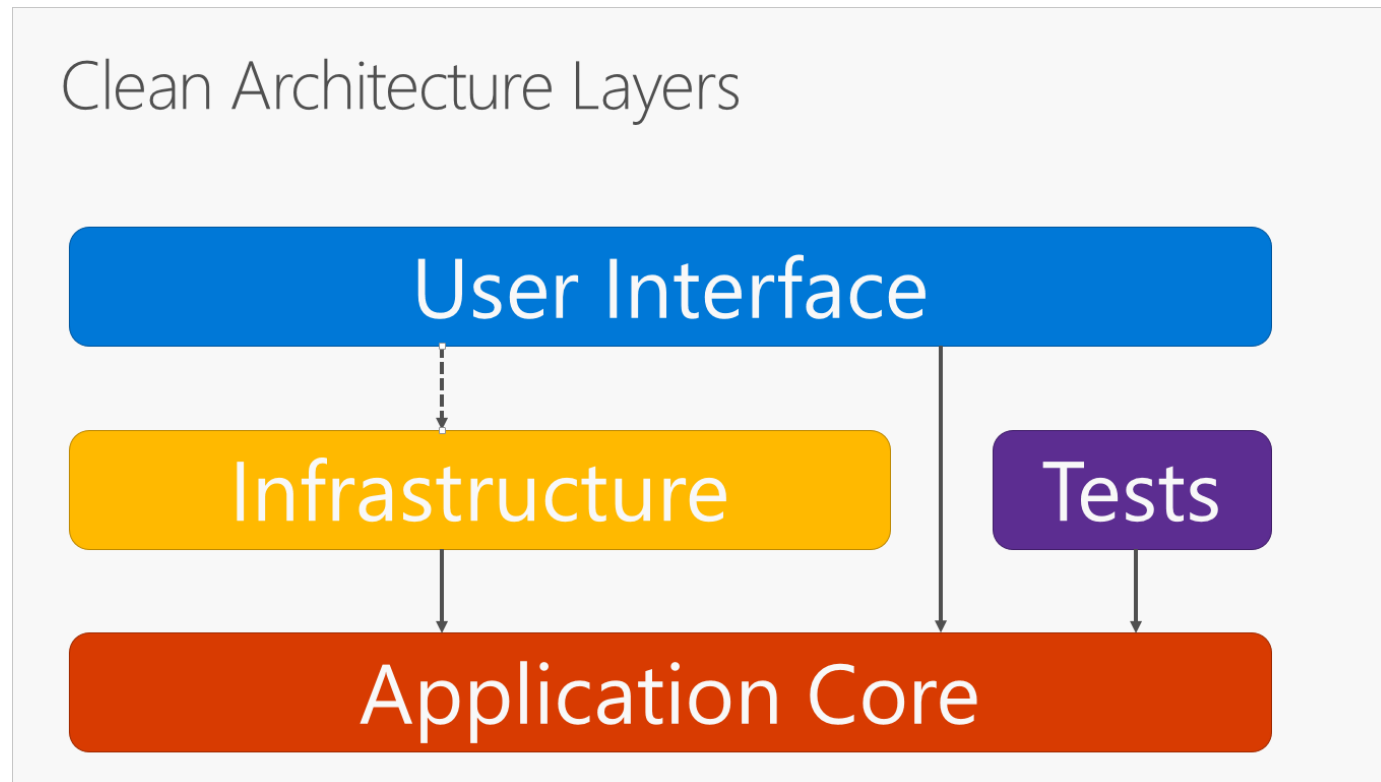
User Interface

Business Logic

Data Access

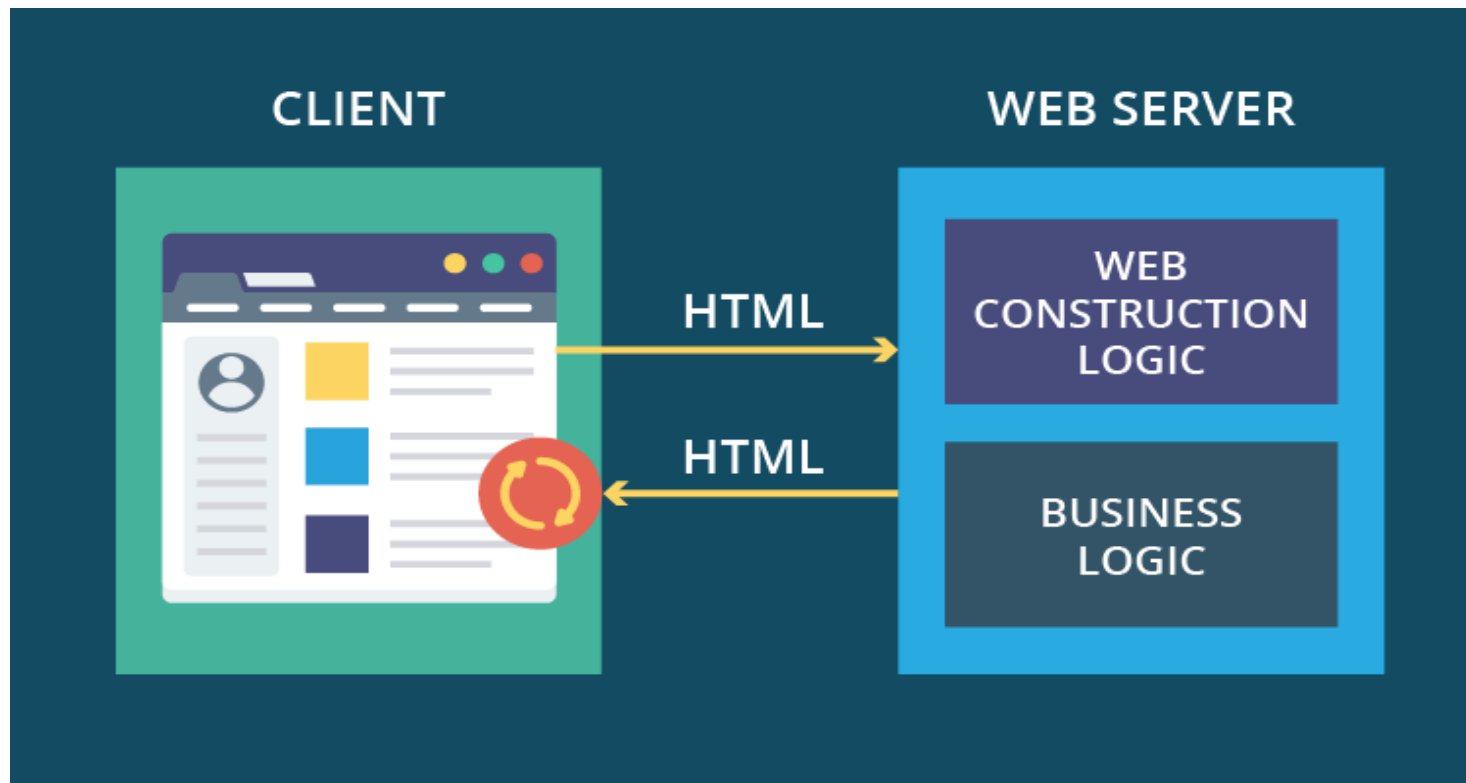
Common Web Application Architectures

Clean Architecture (Onion Architecture)



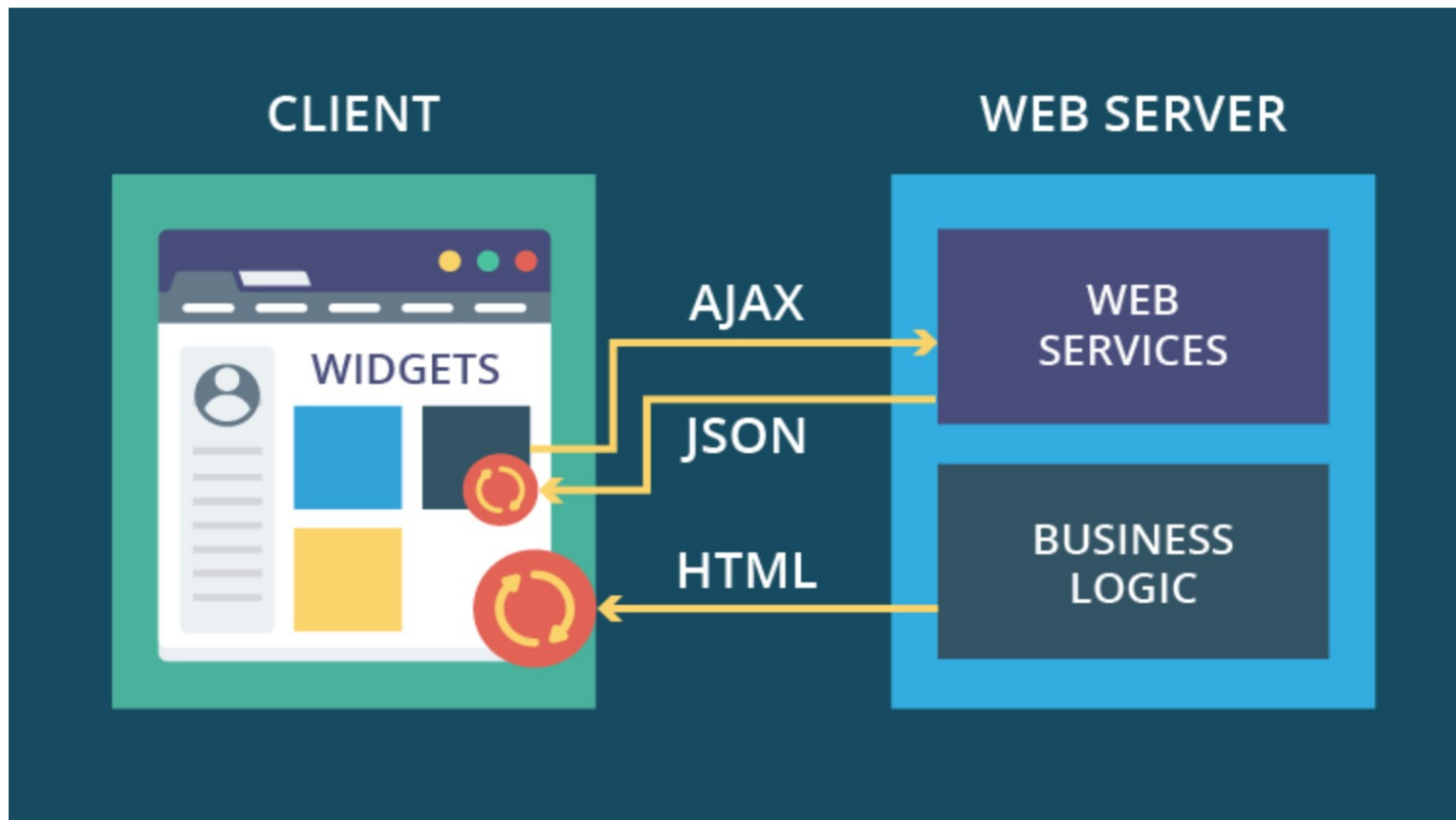
Types of Web Applications

Legacy HTML web app



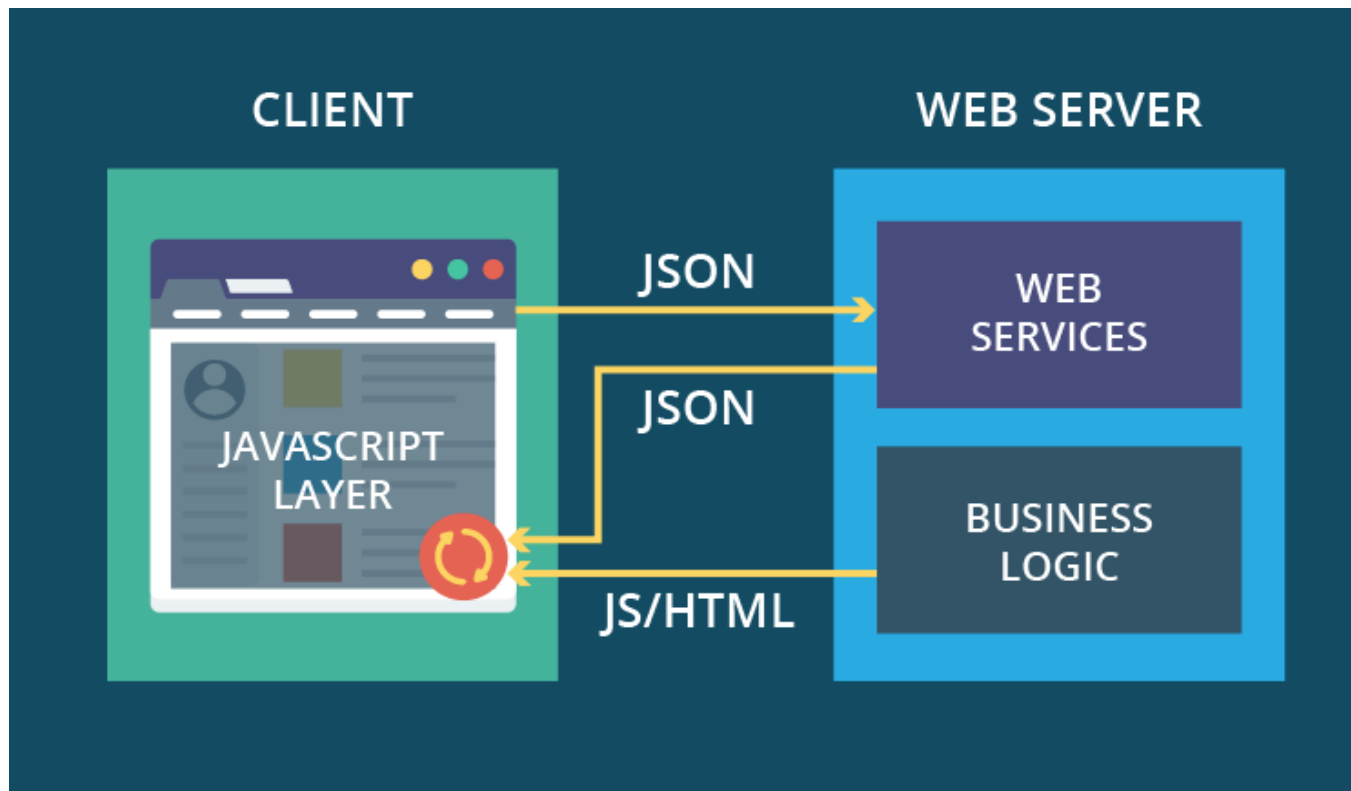
Types of Web Applications

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:

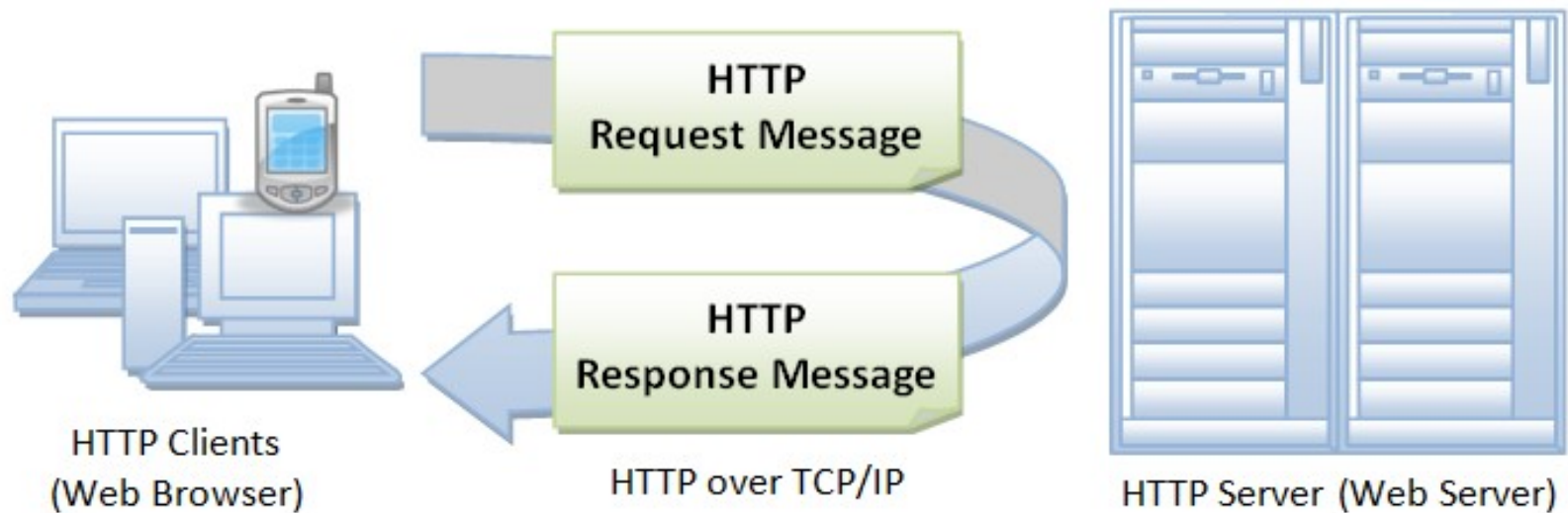
CSS

Javascript

HTML

Http Protocol

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

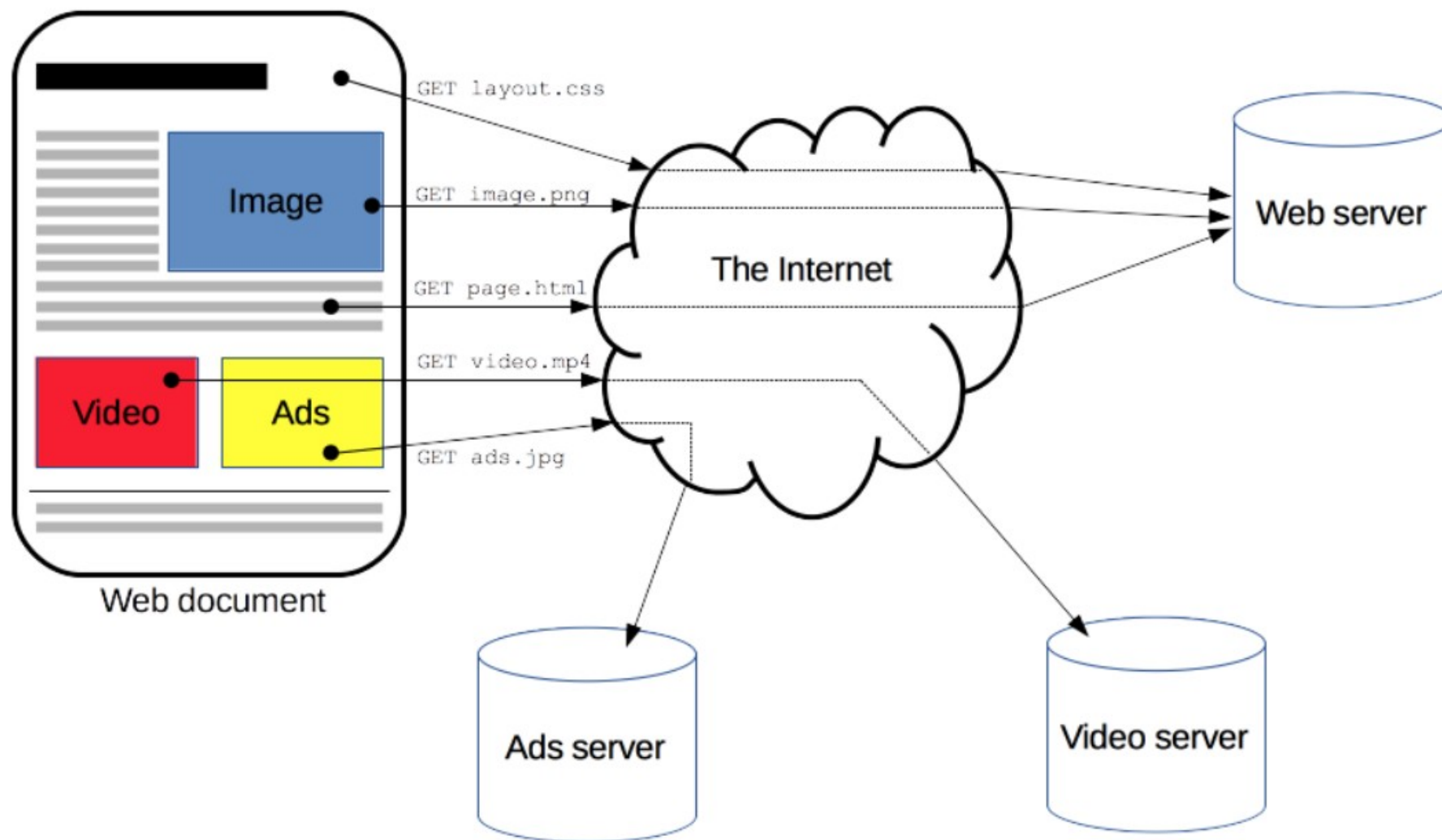


Http Protocol

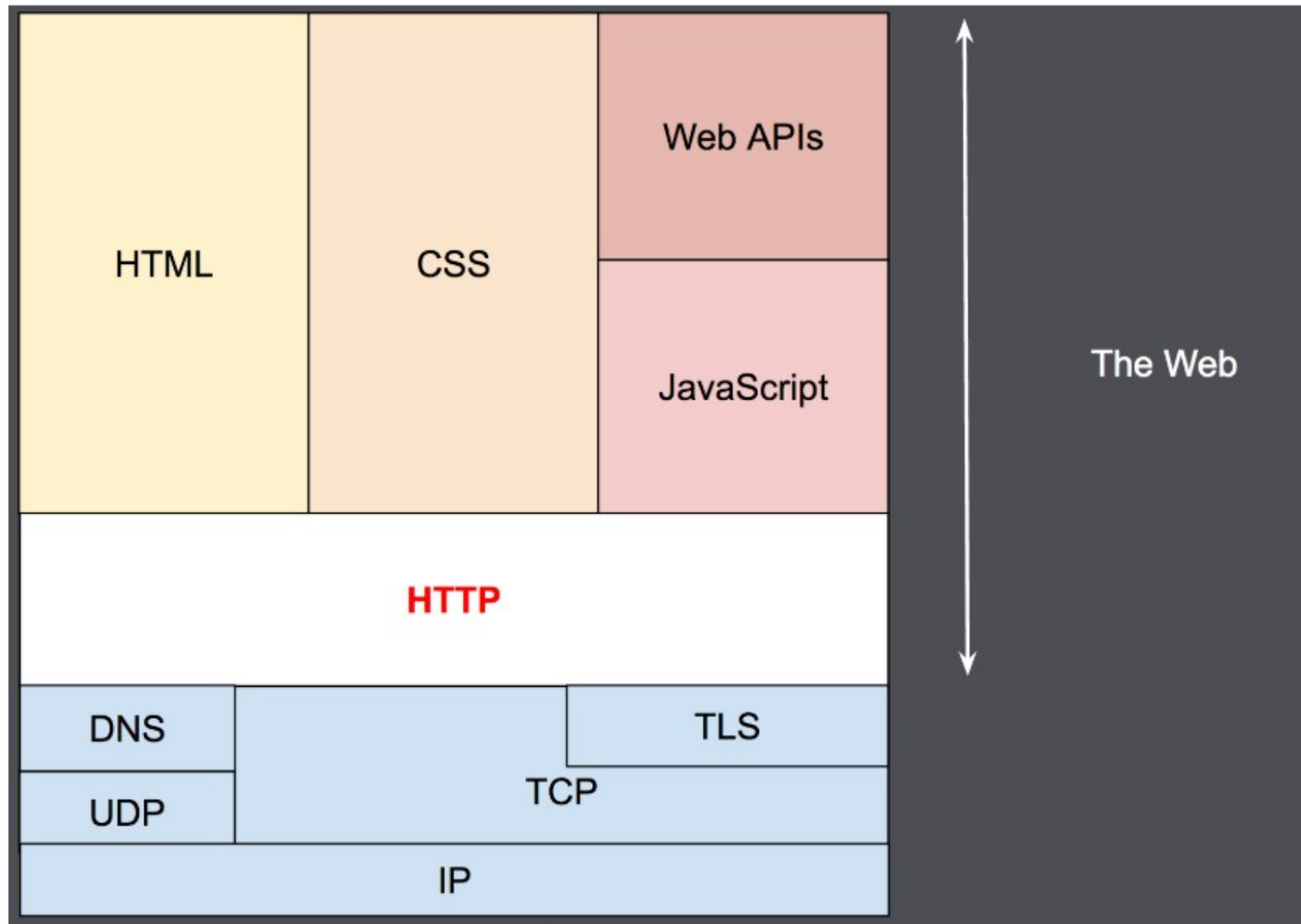
HTTP Methods

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

Http Protocol

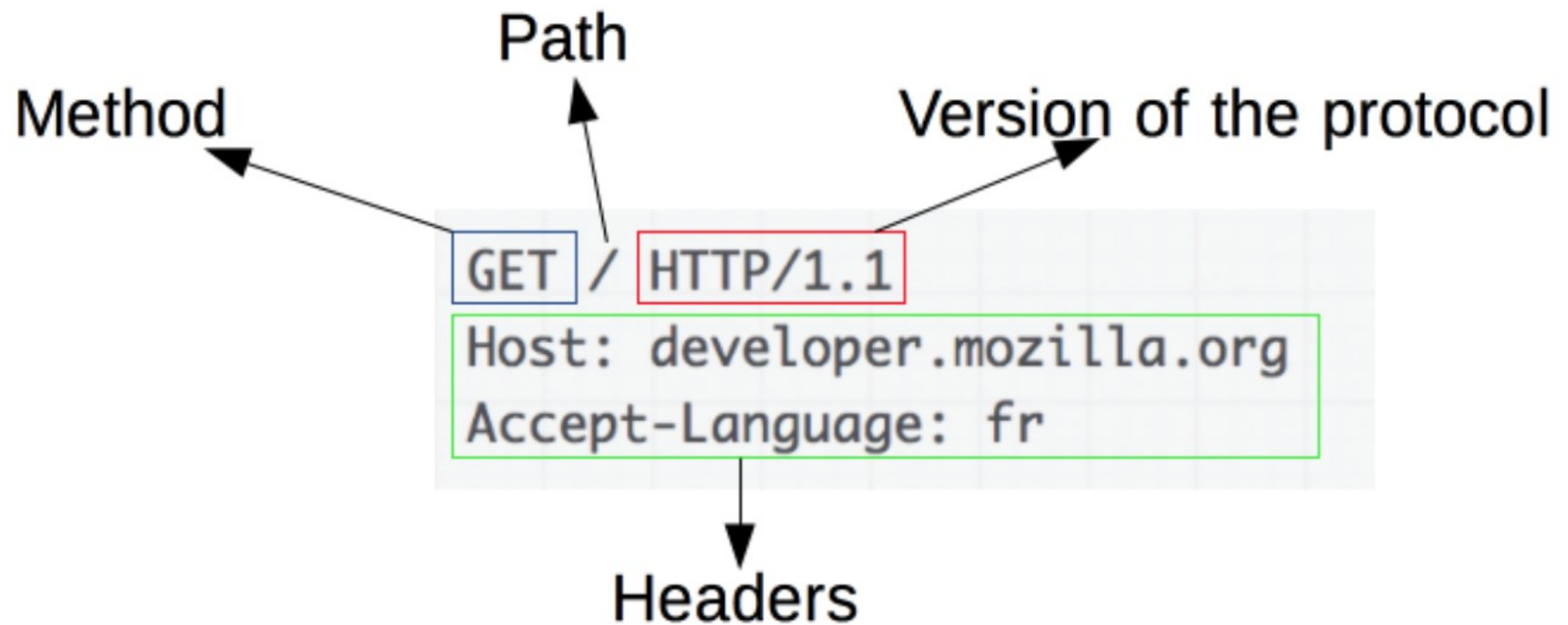


Http Protocol



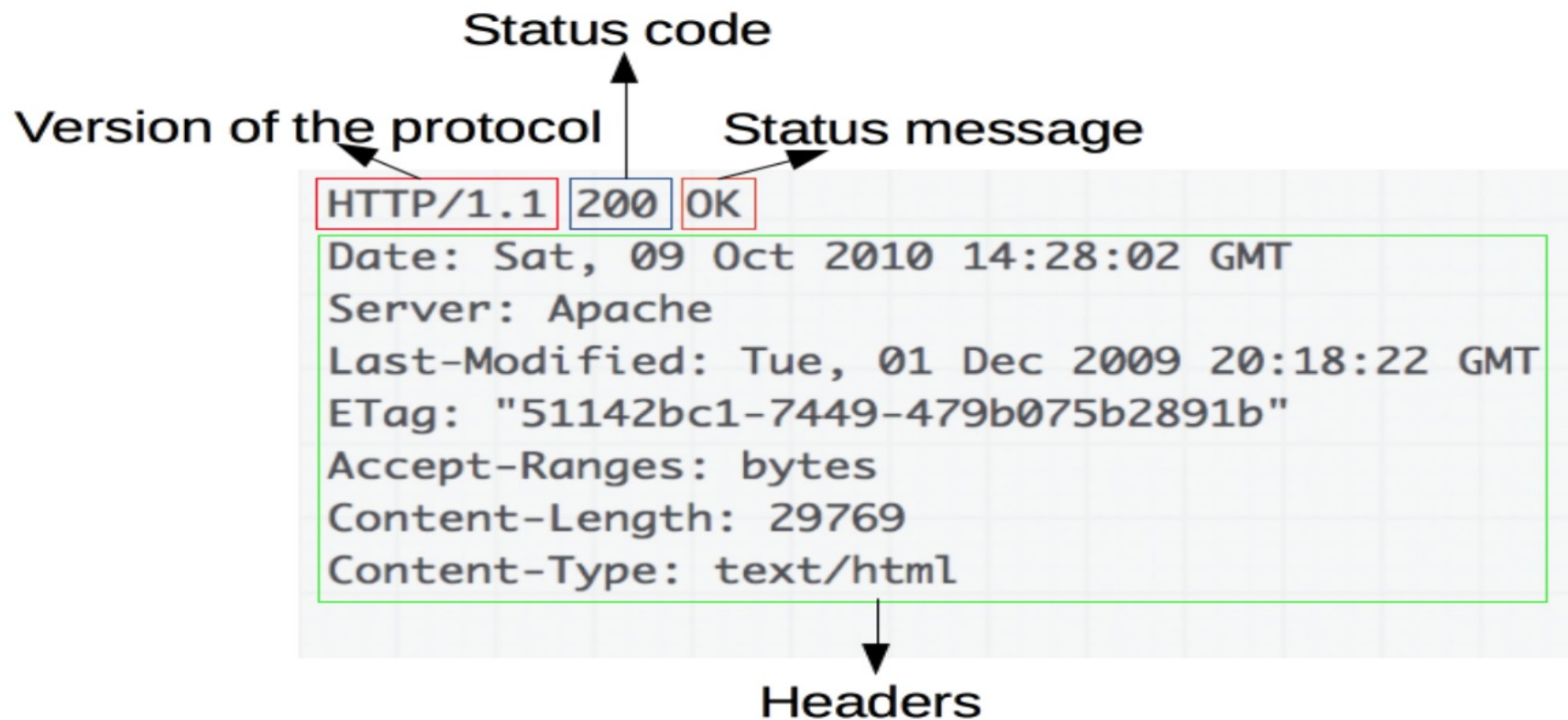
Http Protocol

HTTP Request Structure



Http Protocol

HTTP Response Structure



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.

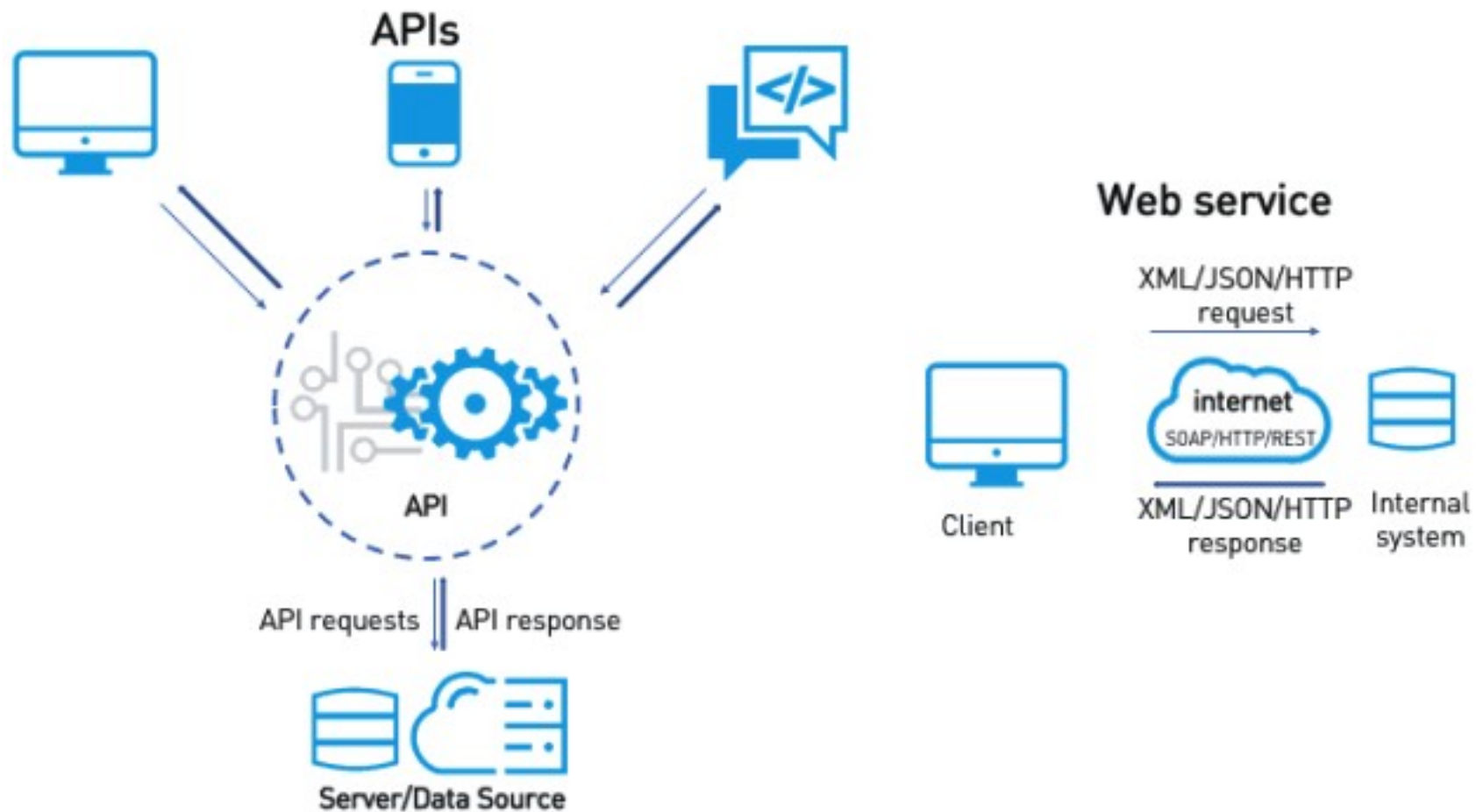
What is REST architecture?

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.

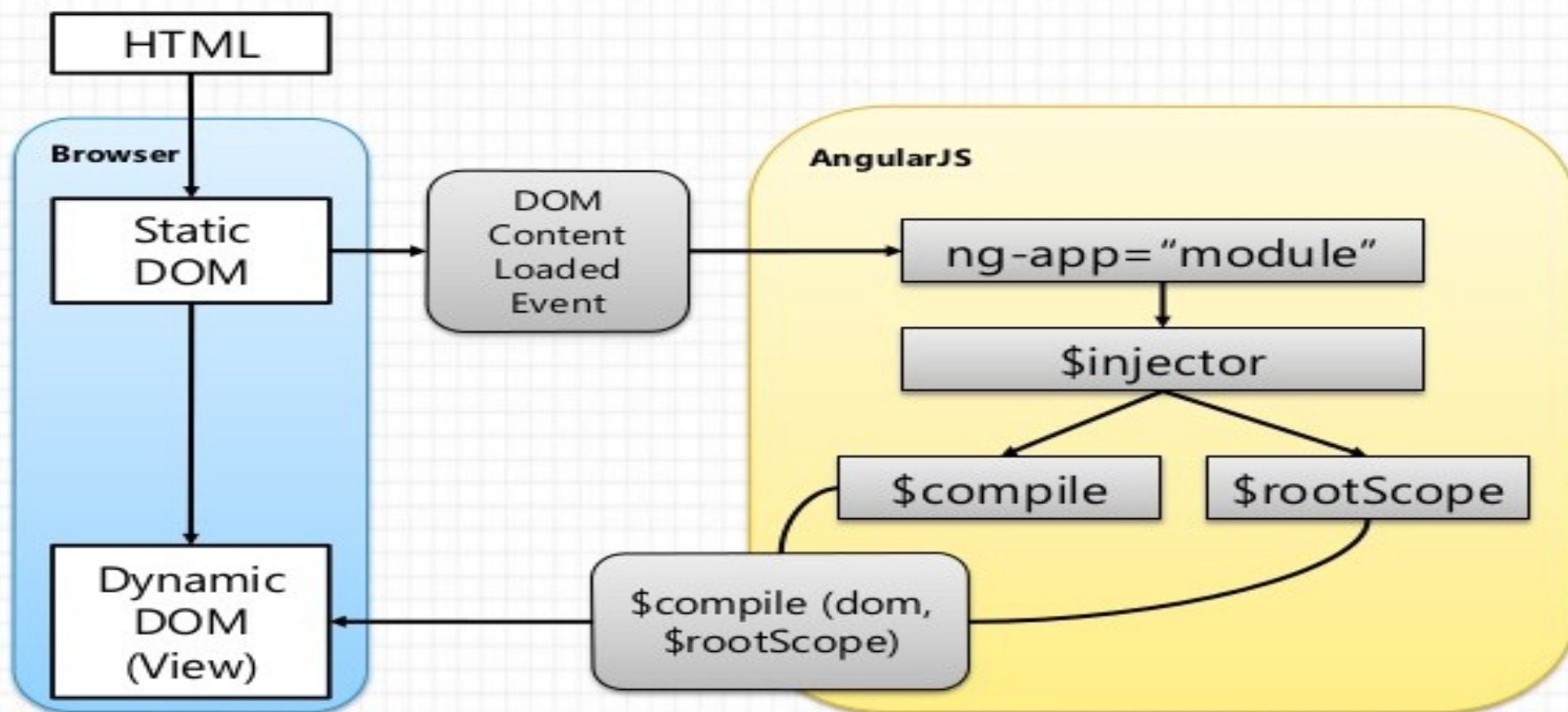
Scope: These are objects that refer to the model.

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

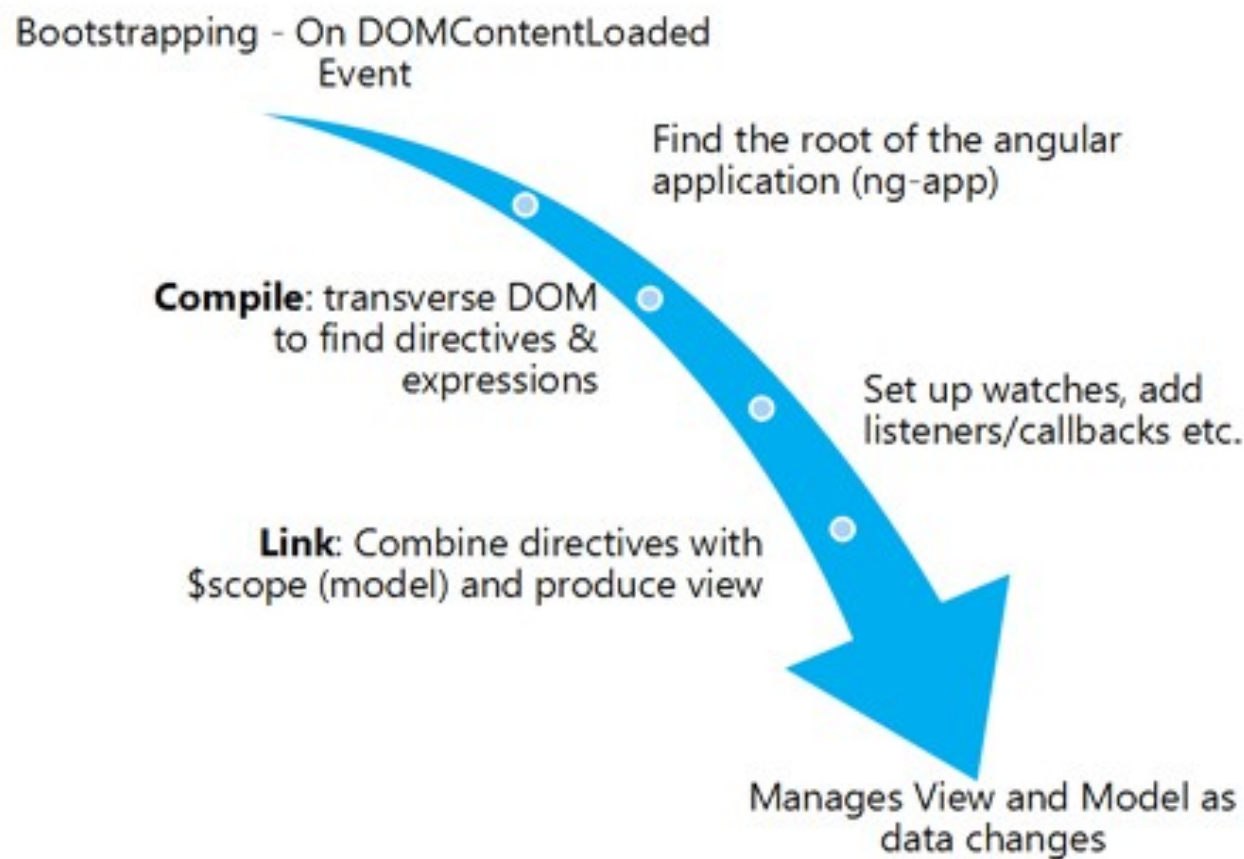
Controller: These are JavaScript functions that are bound to a particular scope.

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®



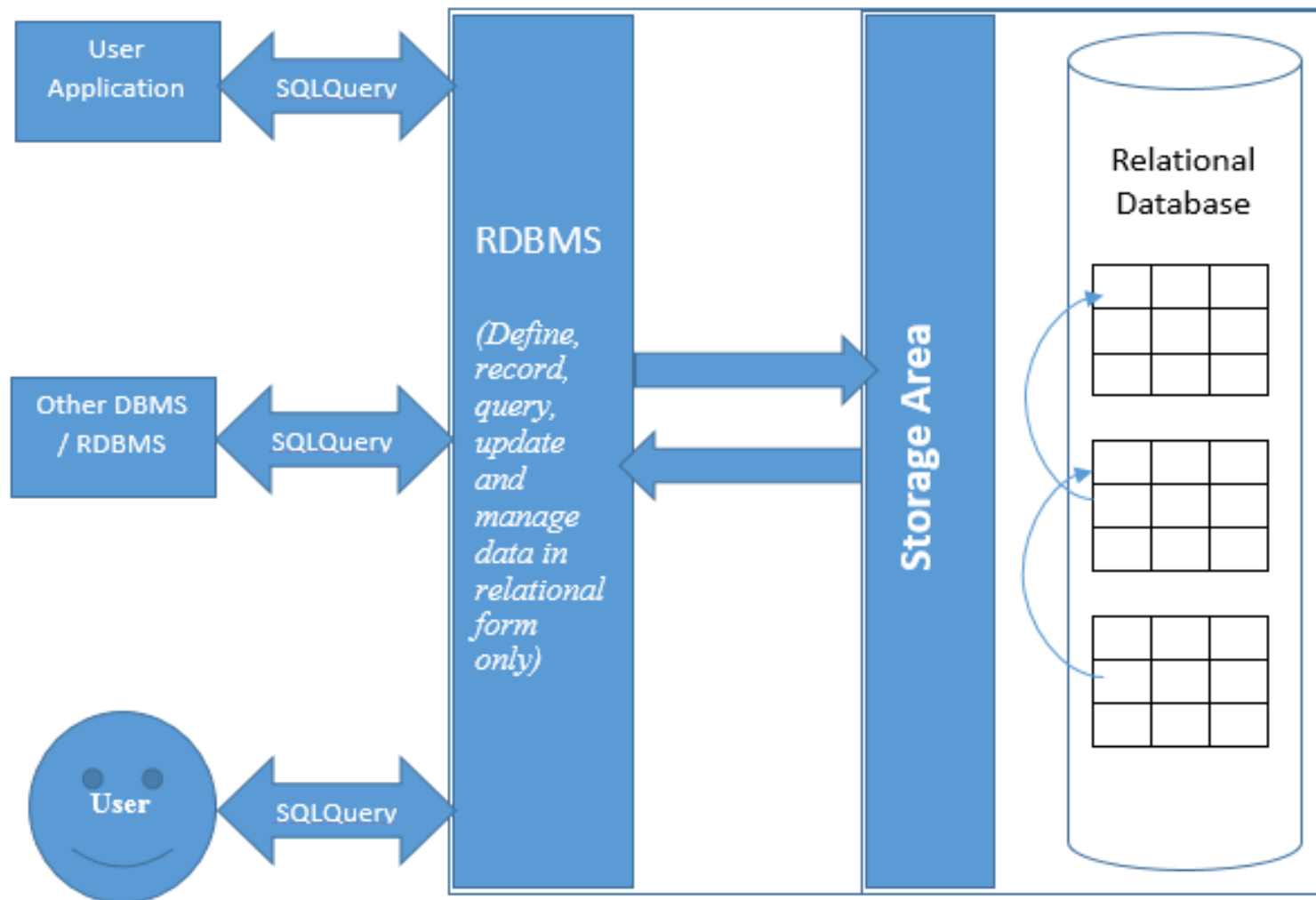
What is a relational database?

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?

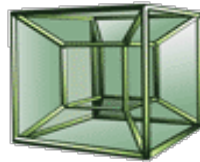


NoSQL Databases

APACHE
HBASE

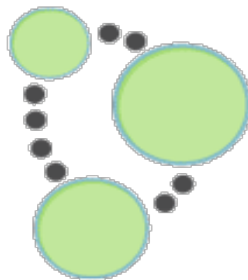


riak



mongoDB

HYPERTABLE INC

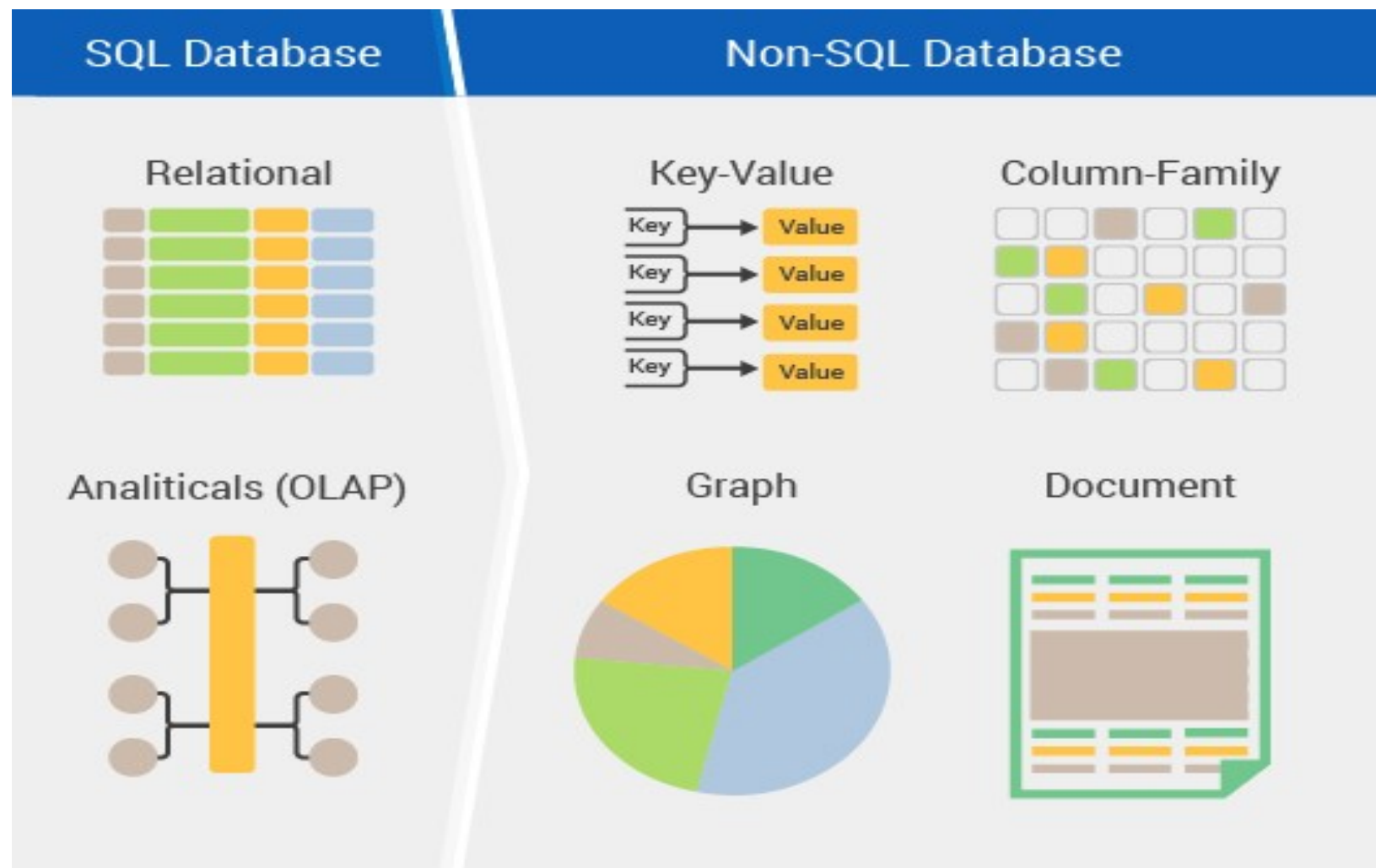


Neo4j



redis

NoSQL Databases / RDMS



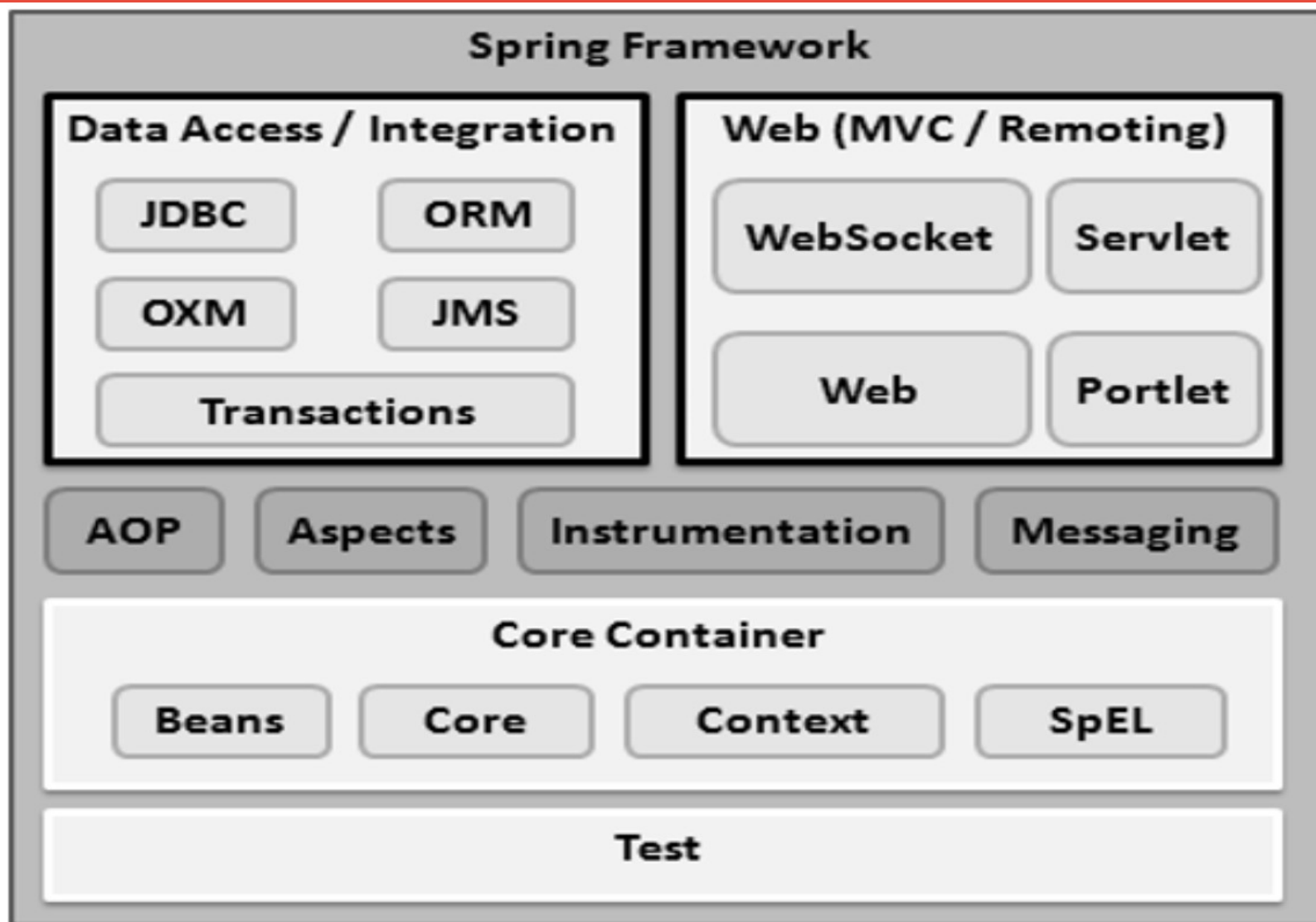
Spring Framework

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?

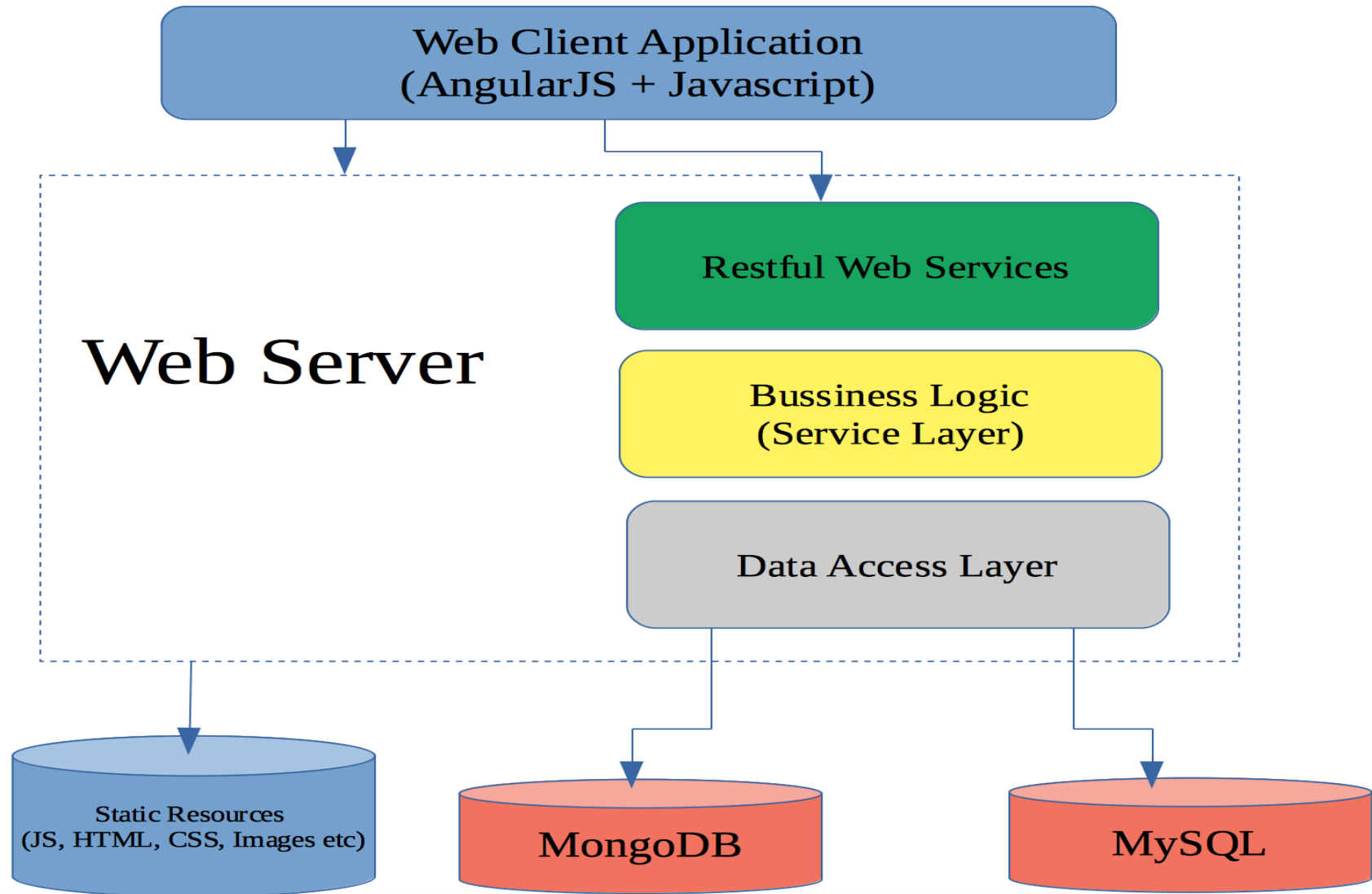
Spring Core

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

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/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>

The End

Questions ?

Thank you