ARQUITHECTURE OF WEB INFORMATIONS SYSTEM

(WIS)

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# Introduction

The Web Information Systems are designed to provide, process and manage information throughout the web. As we have learned in other subjects, architecture is defined in 3 main components:

* Presentation Layer
* Application Layer
* Data Layer

# Components in WIS architecture

## 2.1 Presentation Layer

This is the layer that the users interact with, in which they make requests to the Business Layer to change or not the Data Layer.

It uses technologies such as:

* HTML 🡪 It’s used to create different views of the web
* CSS 🡪 It gives the views styles to give a good presentation
* JavaScript 🡪 It’s used to implement functions and logic into the views, to make the presentation layer responsive to changes

There are more technologies and frameworks like React, Angular ….

## 2.2 Application Layer

It contains all the business logic and manages all the requests that come from the presentation layer.

It’s divided into two components that interact, the application server and the application.

* The application server: This is where an application is hosted
* The application: This is where the business logic is implemented, through controllers, services, repositories and entities.

The application layer also manages the authentication and validation of all the data that comes from the presentation layer.

It commonly is programmed with PHP, Python or Java.

## 2.3 Data Layer

The data layer has a single component, the database. Its purpose is to store and manage the data of the system, such as tables that correspond to entities or relations between them.

The database responds to requests that the application layer makes, these requests flow through the controller, service and repository, in which a query is sent to the database to make or change what the request said.

The data layer can be implemented with relational databases, like MySQL, PostgreSQL…. Another option is to use non-relational databases, like MongoDB, Cassandra ….

## Architecture Models

There are some already designed models to use when making a Web Information System:

* Client-Server Architecture 🡪 The client sends requests to the server that responds with data, or the page requested
* MVC Architecture 🡪 It divides the system in three, the Model (contains the data), the View (gives the presentation layer), and the Controller (implements the business logic)
* Microservices Architecture 🡪 Divides the system by multiple services that communicate with each other

## Conclusion

The Web Information Systems have a lot of architectures to choose from, choosing one will depend solely on the requirements of your system. The most used ones are the MVC Architecture and the Microservices Architecture, but that doesn’t exclude other ones.