

Frameworks

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Software framework

In computer programming, a software framework is an abstraction in which software, providing generic functionality, can be selectively changed by additional user-written code, thus providing application-specific software. It provides a standard way to build and deploy applications and is a universal, reusable software environment that provides particular functionality as part of a larger software platform to facilitate the development of software applications, products and solutions. [Based on Wikipedia](#)


Frontend and backend

In software engineering, the terms frontend and backend (or sometimes referred to as back end or back-end) refer to the separation of concerns between the presentation layer (frontend), and the data access layer (backend) of a piece of software, or the physical infrastructure or hardware. In the client-server model, the client is usually considered the frontend and the server is usually considered the backend, even when some presentation work is actually done on the server itself. [Based on Wikipedia](#)

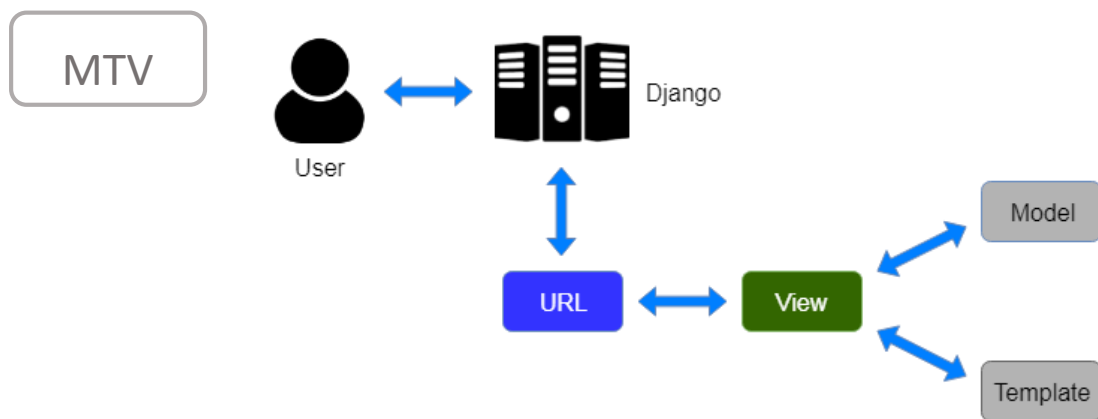
Web application

Based on Wikipedia

Python :

 **django** : is a free and open-source, Python-based web framework that follows the model-template-views (MTV) architectural pattern

django



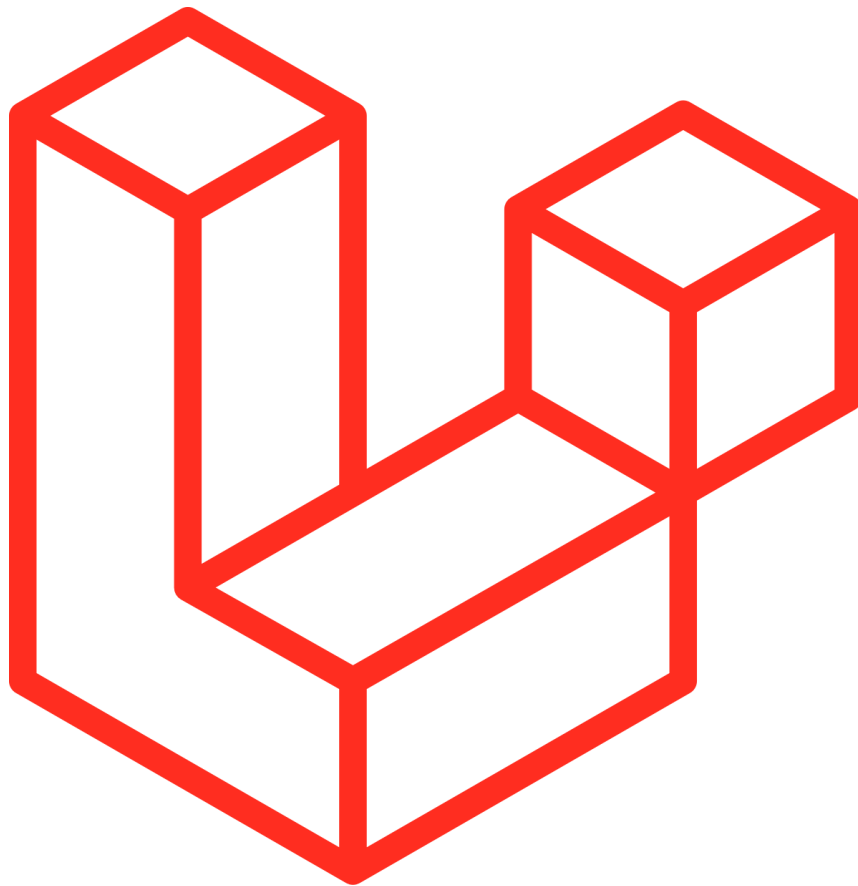
🍹 *Flask* : is a micro web framework written in Python. It is classified as a microframework because it does not require particular tools or libraries



PHP :

🚦 *Laravel* : is a free and open-source PHP web framework,[3]


created by Taylor Otwell and intended for the development of web applications following the model-view-controller (MVC) architectural pattern and based on Symfony



🌈 *Symfony* : is a free and open-source PHP web application framework and a set of reusable PHP component libraries. It was published as free software on October 18, 2005, and released under the MIT license.



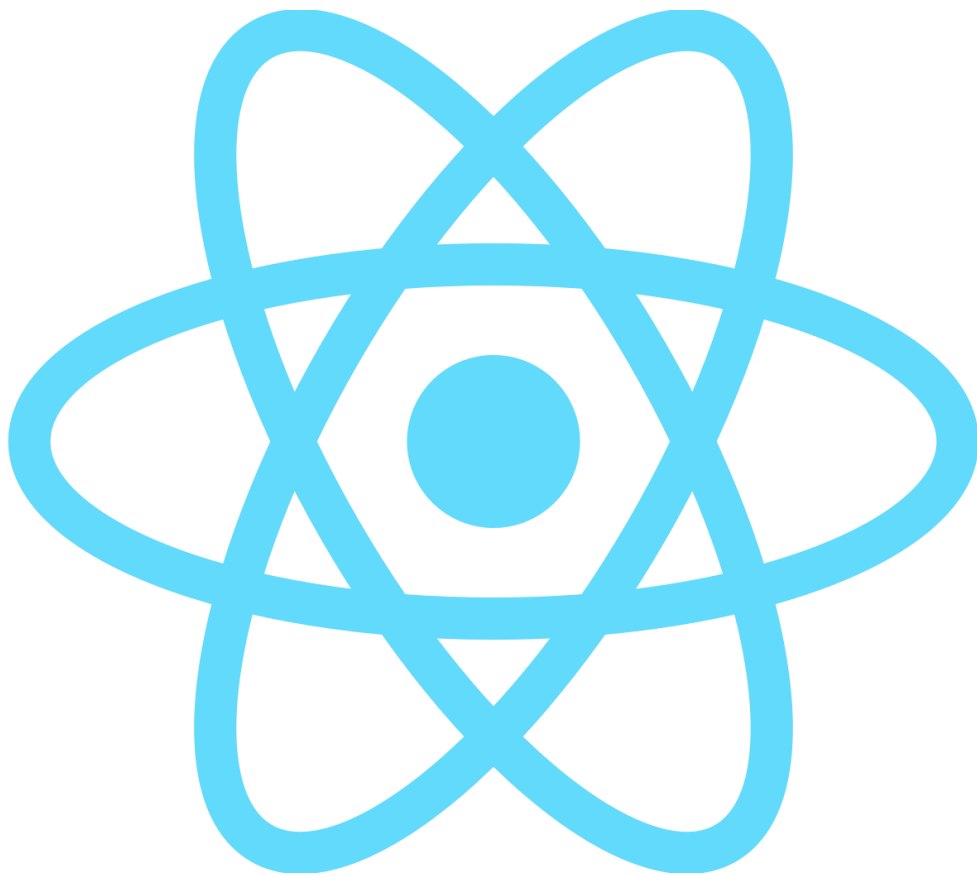
JS :

 **Angular** : is a TypeScript-based, free and open-source web application framework led by the Angular Team at Google and by a community of individuals and corporations. Angular is a complete rewrite from the same team that built AngularJS.



❖ **React** : is a free and open-source front-end JavaScript library[3] for building user interfaces based on components. It is maintained by Meta (formerly Facebook) and a community of individual developers and companies .

😊 *React is not a framework it's a library !*




❖ *Node.js* : is a cross-platform, open-source server environment that can run on Windows, Linux, Unix, macOS, and more. Node.js is a back-end JavaScript runtime environment, runs on the V8 JavaScript Engine, and executes JavaScript code outside a web browser.

☺ *Node.js* is actually not a framework or a library, but a runtime environment, based on Chrome's V8 JavaScript engine !



C# :

 **ASP.NET** : is an open-source, server-side web-application framework designed for web development to produce dynamic web pages



🚦 **ASP.NET Core** : is a free and open-source web framework and successor to ASP.NET, developed by Microsoft.



ASP.NET vs ASP.NET Core :

Just like ASP.NET, ASP.NET Core is based on the Model-View-Controller framework, like most web development frameworks; ASP.NET Core has robust Cloud support, and it supports modular architecture better than ASP.NET does.

CSS :

Bootstrap : is a free and open-source CSS framework directed at responsive, mobile-first front-end web development. It contains HTML, CSS and (optionally) JavaScript-based design templates for typography, forms, buttons, navigation, and other interface components.



Best Mobile App Frameworks

Based on kellton.com

Flutter :

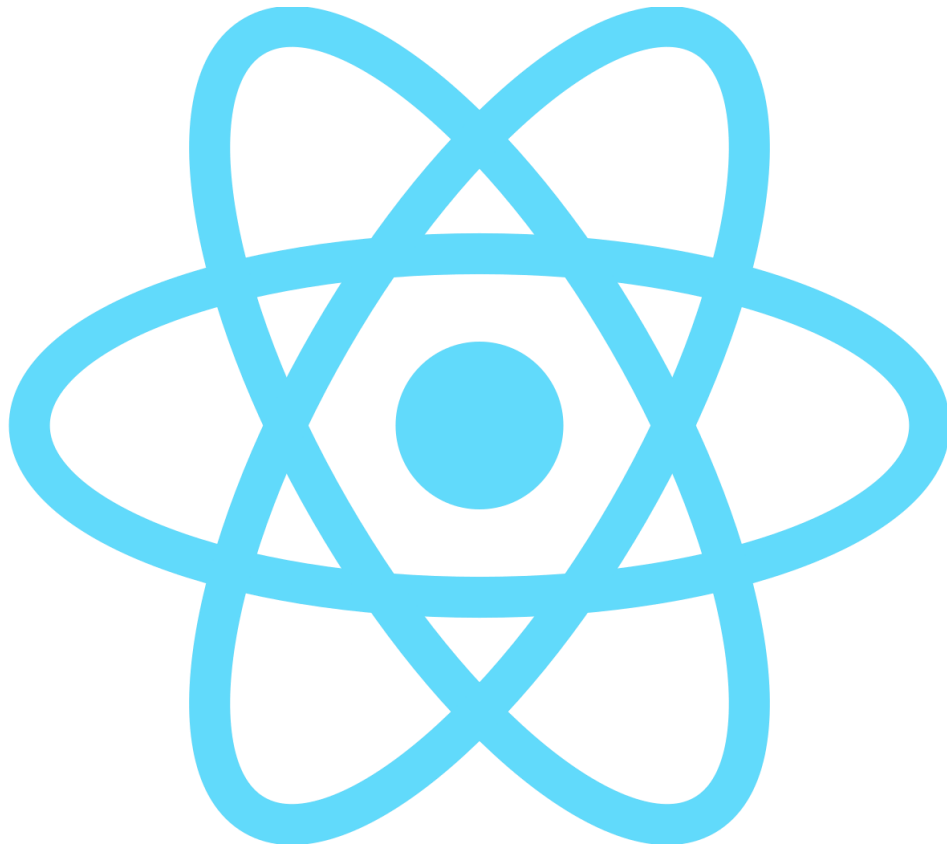
Flutter is Google's open-source framework for developing native Android and iOS apps using a single codebase. It is a revolutionary SDK for [crossplatform app development](#) that stands out as it uses a unique approach for delivering apps with a native-like look and feel. It is an unmatched and highly reliable mobile UI framework for creating stunning apps quickly by speeding up the development process. Flutter is a complete framework that includes widgets, a rendering engine, testing and integrating APIs and tools to help developers build and deploy aesthetically pleasing mobile apps. Examples of some of the prominent market players' apps developed using Flutter include Google, Alibaba, and Abbey Road Studios.



Flutter

React Native :

Developed and maintained by Facebook, React Native is an open-source, cross-platform app development framework that has become the developers' top choice in a short span of time. React Native helps develop Android and iOS mobile apps seamlessly. Mobile apps of top brands such as Tesla, Airbnb, Skype, and Amazon Prime are the best examples of React Native apps. Faster development and deployment are the primary reasons behind the universal popularity of React Native. Other [notable features of React Native](#) include reusable components, integration with third-party plugins, and component-based GUI development for front-end applications. Based on kellton



Ionic :

Ionic is an open-source framework built with Apache Cordova (PhoneGap) and Angular, allowing the developers to build Android and iOS apps for seamless mobile performance. The framework helps the developers build robust and feature-rich native applications. Ionic's most significant advantage is that it allows the developers to use several UI elements such as filters, forms, views, navigation menus, and actions sheets in the application design. Ionic is a complete framework that enables developers to build [Progressive Web Apps \(PWAs\)](#), hybrid and cross-platform mobile applications.



Xamarin :

Xamarin is a Microsoft-owned open-source framework used for developing native and high-performance Android, iOS, macOS, tvOS, and watchOS apps leveraging .NET and C# programming languages. The framework empowers businesses to provide native performance and unique user experiences to end-users. In Xamarin, an abstraction layer controls the communication between the underlying platform code and shared code. The framework allows the developers to build an ecosystem with APIs, backend, components, etc., using tools, libraries, and programming languages supported by an active community.



Xamarin

Native Script :

This open-source framework is preferred in order to reduce the time and code of the app loads. This framework is adept in creating mobile apps that are Typescript, CSS, Vue.js, Javascript and Angular enabled. Some of the main reasons why leading companies prefer Native Scripts because it has features like appropriate backend support, business support, complete access to iOS APIs and Android, cross platform application and native userinterface without web-views and so on.



Apache Cordova :

Formerly known as PhoneGap, Apache Cordova is a leading mobile app development framework that is developer-friendly. It is a cross-platform app development framework that leverages CSS3, HTML5, and JavaScript to build mobile applications. Cordova plugins enable the developers to access device hardware capabilities such as GPS, camera, and accelerometer to deliver a native-like app experience. Apache Cordova's notable features include a faster development process with a single codebase and third-party app management tools.



Framework7 :

Framework7 is an open-source framework that is very easy to learn and use. It allows the developers to build Android, iOS, and desktop apps with a native-like look and feel using popular web technologies such as HTML5, JavaScript, and CSS3. Framework7 provides additional support for Vue.js, React, and Svelte. Another attractive feature of Framework7 is its stunning UI elements, including features such as action sheet, list view, popup, side panels, layout grid, and more. Framework7 makes the development process easy, convenient, and fast.



Framework

JQuery Mobile :

JQuery Mobile is a hybrid mobile app development framework that helps build platform-independent apps. The framework uses JavaScript library and HTML for building responsive websites that work on various devices such as smartphones, tablets, and desktops. JQuery leverages the HTML5 based framework and the ThemeRoller to offer highly customizable themes for mobile apps and web applications. JQuery Mobile comes in two variants, namely customized framework and stable version.



Top Five AI Frameworks

Based on spiceworks.com

Scikit Learn :

Scikit Learn is a python-based AI and machine learning solution that includes many methods for medium-sized supervised and unsupervised issues. The tool assists users who lack expertise in the popular yet highlevel language. Its main advantage is that it has few dependencies and is released under the BSD license. This promotes Scikit's application in both educational and commercial environments. Another advantage of the tool is its user-friendly interface



TensorFlow :

TensorFlow, a Google product, is an open-source toolkit that uses Javascript and API to execute machine learning models directly in the browser. It is a go-to package for those familiar with Javascript who want to learn about AI and machine learning. Even TensorFlow is written in Python and is intended for use with contemporary deep neural networks because of its flexibility and adaptability. Also, the tool is recognized for its architecture which allows it to operate on any CPU or GPU, whether on a PC, server, or smartphone



TensorFlow

Theano :

Theano is another Python-based toolkit for developing and interpreting mathematical models, particularly matrix-valued kinds. This open-source software, developed by the Montreal Institute of Learning Algorithms, can operate on any CPU or GPU configuration. Theano was created to quickly and easily implement deep learning models, and its main attribute is its speed. Its speed makes it ideal for deep learning and other complicated tasks

theano

Caffe :

Caffe is a software program designed to handle several deep learning architectures oriented toward image classification and segmentation. It is written in C++ with a Python interface and is licensed under BSD. This framework is commonly used in research, startup trials, and large-scale application development. Yahoo! has also launched CaffeOnSpark, a distributed deep learning platform, by combining Caffe with Apache Spark



🚦 Microsoft CNTK :

Microsoft Cognitive Toolkit (CNTK) is an open-source framework developed by Microsoft Research that is incredibly quick and versatile. It is built on neural networks and can recreate text, messages, and voices. CNTK allows for easily integrating popular model types such as CNN, RNN, LSTM, and DNN. It may also be used as an independent machine-learning tool or library in Python, C#, or C++ applications. The language it employs to describe models is called BrainScript

