Nodemcu

NodeMCU is an open source IoT platform.It includes firmware which runs on the ESP8266 Wi-Fi SoC from Espressif Systems, and hardware which is based on the ESP-12 module. The term "NodeMCU" by default refers to the firmware rather than the development kits. The firmware uses the Lua scripting language. It is based on the eLua project, and built on the Espressif Non-OS SDK for ESP8266. It uses many open source projects, such as lua-cjson,[8] and spiffs.

The ESP8266 is a Wi-Fi SoC integrated with a [Tensilica](https://en.wikipedia.org/wiki/Tensilica) Xtensa LX106 core,widely used in IoT applications. NodeMCU started on 13 Oct 2014, when Hong committed the first file of nodemcu-firmware to GitHub.

As Arduino.cc began developing new MCU boards based on non-[AVR](https://en.wikipedia.org/wiki/AVR_microcontrollers) processors like the ARM/SAM MCU and used in the Arduino Due, they needed to modify the Arduino IDE so that it would be relatively easy to change the IDE to support alternate toolchains to allow Arduino C/C++ to be compiled down to these new processors. They did this with the introduction of the Board Manager and the SAM Core. A "core" is the collection of software components required by the Board Manager and the Arduino IDE to compile an Arduino C/C++ source file down to the target MCU's machine language.

Nodejs

Node.js is an open-source, cross-platform JavaScript run-time environment that executes JavaScript code outside of a browser. Typically, JavaScript is used primarily for client-side scripting, in which scripts written in JavaScript are embedded in a webpage's HTML and run client-side by a JavaScript engine in the user's web browser. Node.js lets developers use JavaScript to write Command Line tools and for server-side scripting—running scripts server-side to produce dynamic web page content before the page is sent to the user's web browser. Node.js represents a "JavaScript everywhere" paradigm, unifying web application development around a single programming language, rather than different languages for server side and client side scripts.

Node.js has an event-driven architecture capable of asynchronous I/O. These design choices aim to optimize throughput and scalability in web applications with many input/output operations, as well as for real-time Web applications.Node.js allows the creation of Web servers and networking tools using JavaScript and a collection of "modules" that handle various core functionality.Modules are provided for file system I/O, networking (DNS, HTTP, TCP, TLS/SSL, or UDP), binary data (buffers), cryptography functions, data streams, and other core functions.Node.js's modules use an API designed to reduce the complexity of writing server applications.

Node.js operates on a [single thread](https://en.wikipedia.org/wiki/Single_threading) event loop, using [non-blocking I/O](https://en.wikipedia.org/wiki/Non-blocking_I/O) calls, allowing it to support tens of thousands of concurrent connections without incurring the cost of thread [context switching](https://en.wikipedia.org/wiki/Context_switch). The design of sharing a single thread among all the requests that use the [observer pattern](https://en.wikipedia.org/wiki/Observer_pattern) is intended for building highly concurrent applications, where any function performing I/O must use a [callback](https://en.wikipedia.org/wiki/Callback_(computer_programming)). To accommodate the single-threaded event loop, Node.js uses the [libuv](https://en.wikipedia.org/wiki/Libuv) library—which, in turn, uses a fixed-sized thread pool that handles some of the non-blocking asynchronous I/O operations.

Angularness

AngularJS (also written as Angular.js) is a JavaScript-based open-source front-end web application framework mainly maintained by Google and by a community of individuals and corporations to address many of the challenges encountered in developing single-page applications. The JavaScript components complement Apache Cordova, a framework used for developing cross-platform mobile apps. It aims to simplify both the development and the testing of such applications by providing a framework for client-side model–view–controller (MVC) and model–view–viewmodel (MVVM) architectures, along with components commonly used in rich Internet applications. (This flexibility has led to the acronym MVW, which stands for "model-view-whatever" and may also encompass model–view–presenter and model–view–adapter.) In 2014, the original AngularJS team began working on the Angular application platform.

AngularJS is built on the belief that declarative programming should be used to create user interfaces and connect software components, while imperative programming is better suited to defining an application's business logic.The framework adapts and extends traditional HTML to present dynamic content through two-way data-binding that allows for the automatic synchronization of models and views. As a result, AngularJS de-emphasizes explicit DOM manipulation with the goal of improving testability and performance.

Mongodb

MongoDB is a free and open-source cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with schemata. MongoDB is developed by MongoDB Inc., and is published under a combination of the Server Side Public License and the Apache License.

Main features

[Ad hoc](https://en.wikipedia.org/wiki/Ad_hoc) queries

Indexing

Replication

[Load balancing](https://en.wikipedia.org/wiki/Load_balancing_(computing))

File storage

Aggregation

Server-side JavaScript execution

Capped collections

Transactions

mLab

**mLab** is a fully managed cloud database service that hosts [MongoDB](https://en.wikipedia.org/wiki/MongoDB) databases. mLAB is Database-as-a-Service for MongoDB.mLab runs on cloud providers [Amazon](https://en.wikipedia.org/wiki/Amazon.com), [Google](https://en.wikipedia.org/wiki/Google), and [Microsoft Azure](https://en.wikipedia.org/wiki/Microsoft_Azure), and has partnered with [platform-as-a-service](https://en.wikipedia.org/wiki/Platform_as_a_Service) providers.