1) NODE -RED: is a visual tool for lining the Internet of Things, i.e., wiring together hardware devices, APIs, and online services in new ways. Built on Node.js, Node-RED describes itself as “a visual means for wiring the Internet of Things.”

It provides developers to connect devices, services, and APIs using a browser-based flow editor. It can run on Raspberry Pi, and further 60,000 modules are accessible to increase its facilities.

2) ARDUINO:

If you are seeking to make a computer that can perceive and exercise stronger control over the real world when related to your ordinary stand-alone computer, then Arduino can be your wise preference.

Offering an appropriate blend of IoT hardware and software, Arduino is a simple-to-use IoT platform. It operates through an array of hardware specifications that can be given to interactive electronics. The software of Arduino comes in the plan of the Arduino programming language and Integrated Development Environment (IDE).

3)IBM WATSON IOT PLATFORM:

Watson IoT Platform, formerly known as IBM IoT Connection Service, connects devices, ingests device data, and transforms that data into meaningful insights. Watson IoT Platform and its additional add-on services enable organizations to capture and explore data for devices, equipment, and machines, and discover insights that can drive better decision-making.

Watson IoT Platform combines the power and simplicity to scale to industrial IoT applications, solutions, and workloads. It integrates the existing capabilities and functions of IBM IoT Connection Service in an end-to-end, fully managed cloud service available for subscription in production or non-production environments.

Watson IoT Platform communicates with your applications and devices by using the Watson IoT Platform API and the Watson IoT Platform messaging protocol. Other capabilities include:

- Appliance claiming
- Device registration and setup
- Authentication and security

- Data lifecycle management
- Device management
- Alerts and remote monitoring
- Solution administration

Accelerate development and PoCs with production and non-production subscriptions

Watson IoT Platform for Production subscription is available in various implementation sizes and scales:

- Sensor
- Consumer
- Enterprise
- Industrial

Watson IoT Platform also provides a non-production environment for developing application content and conducting Proofs of Concept (PoC). Watson IoT Platform for Non-Production is offered in a predefined environment at a fixed monthly subscription. This non-production environment can quickly conduct an IoT PoC and move development from non-production into production. Users can easily simulate device deployment; authenticate, claim, or register a device; create dashboards and groups; deploy alerts; and utilize at global scale.

The Watson IoT Platform Lite Plan on the IBM Cloud offers 500 registered devices, 500 application bindings, and 200 MB of each of data exchanged. This includes data analysis and edge data analysis at no charge.

Enrich and extend the Watson IoT Platform with optional add-ons

Watson IoT Analytics service is an extension to the Watson IoT Platform. It enables line-of-business users to easily enrich, augment, and interact with the raw data that is originating from the IoT Platform with additional analytical measures and configurable business rules to get a better view of their operations and business. Watson IoT Analytics service:

- Offers support for creating, monitoring, and enforcing business-relevant analytic functions
- Provides a user interface that automates the workflow of gathering input data for analytic function calculation from multiple sources; defining input data to perform calculations; acting on the calculated values; and storing the calculated results
- Enables developers to create and publish custom analytic functions onto the catalog through a python-based API

Watson IoT Blockchain service is an extension to the Watson IoT Platform. It enables Internet of Things (IoT) and assets to validate provenance and events in a trusted, immutable ledger that is designed to increase trust and transparency across ecosystems.

The service enables IoT devices to send data to a private blockchain ledger that is shared by your business network. The secure blockchain provides peers with the capability to record transactions in a decentralized data log that is maintained on a network of computers. With the Watson IoT Blockchain service, you can use near real-time device data to achieve compliance, contract validation, and collaboration on a process or product that was delivered in the supply chain.

4) IBM CLOUD :

The IBM Cloud® platform combines platform as a service (PaaS) with infrastructure as a service (IaaS) to provide an integrated experience. The platform scales and supports both small development teams and organizations, and large enterprise businesses. Globally deployed across data centers around the world, the solution you build on IBM Cloud® spins up fast and performs reliably in a tested and supported environment you can trust!

- A robust console that serves as the front end for creating, viewing, managing your cloud resources
- An identity and access management component that securely authenticates users for both platform services and controls access to resources consistently across IBM Cloud
- A catalog that consists of hundreds of supported products
- A search and tagging mechanism for filtering and identifying your resources
- An account and billing management system that provides exact usage for pricing plans and secure credit card fraud protection

5) PYTHON3.7.0: Python programming powers intuitive interfaces of intelligent and effective Internet of Things (IoT) systems that are paramount in remote sensor networks, big data and data analysis, automation, and machine learning. IoT applications function efficiently with the help of Python **libraries/packages** which include: ROSBERRY PI MODAL 3,ARDUINO

The release you are looking at is python 3.7.0 ,the initial feature release for the legacy 3.7 series which is now in security fix phase of its life cycle.

Windows users

- The binaries for AMD64 will also work on processors that implement the Intel 64 architecture. (Also known as the "x64" architecture, and formerly known as both "EM64T" and "x86-64".)
- There are now "web-based" installers for Windows platforms; the installer will download the needed software components at installation time.
- There are redistributable zip files containing the Windows builds, making it easy to redistribute Python as part of another software package. Please see the documentation regarding Embedded Distribution for more information.

macOS users

- For 3.7.0, we provide two binary installer options for download. The default variant is 64-bit-only and works on macOS 10.9 (Mavericks) and later systems. We also continue to provide a 64-bit/32-bit variant that works on all versions of macOS from 10.6 (Snow Leopard) on. Both variants now come with batteries-included versions oF Tcl/Tk 8.6 for users of IDLE and other tkinter-based GUI applications; third-party and system versions of Tcl/Tk are no longer used. Consider using the new 10.9 64-bit-only installer variant, unless you are building Python applications that also need to work on older macOS systems.
- Both python.org installer variants include private copies of OpenSSL 1.1.0. Please carefully read the Important Information displayed during installation for information about SSL/TLS certificate validation and the Install Certificates.command.

Files

Version	Operating System	Description	MD5 Sum	File Size	GPG
Gzipped source tarball	Source release		41b6595deb4147a1ed517a7d9a580271	22745726	SIG
XZ compressed source tarball	Source release		eb8c2a6b1447d50813c02714af4681f3	16922100	SIG
macOS 64-bit/32-bit installer	macOS	for Mac OS X 10.6 and later	ca3eb84092d0ff6d02e42f63a734338e	34274481	SIG
macOS 64-bit installer	macOS	for OS X 10.9 and later	ae0717a02efea3b0eb34aadc680dc498	27651276	SIG
Windows help file	Windows		46562af86c2049dd0cc7680348180dca	8547689	SIG
Windows x86-64 embeddable zip file	Windows	for AMD64/EM64T/x64	cb8b4f0d979a36258f73ed541def10a5	6946082	SIG
Windows x86-64 executable installer	Windows	for AMD64/EM64T/x64	531c3fc821ce0a4107b6d2c6a129be3e	26262280	SIG
Windows x86-64 web-based installer	Windows	for AMD64/EM64T/x64	3cfdaf4c8d3b0475aaec12ba402d04d2	1327160	SIG
Windows x86 embeddable zip file	Windows		ed9a1c028c1e99f5323b9c20723d7d6f	6395982	SIG
Windows x86	Windows		ebb6444c284c1447e902e87381afeff0	25506832	SIG

Version	Operating System	Description	MD5 Sum	File Size	GPG
executable installer					
Windows x86 web-based installer	Windows		779c4085464eb3ee5b1a4fffd0eabca4	1298280	SIG