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| **Acronym/**  **Expression** | **Description** |
| **Microprocessor** | It is a computer processor that is implemented on a single (or more) integrated circuit (IC) dies of MOSFET construction in a single package. The microprocessor is a multipurpose, clock-driven, register-based, digital integrated circuit that accepts binary data as input, processes it according to instructions stored in its memory, and provides results (also in binary form) as output. Microprocessors contain both combinational logic and sequential digital logic. |
| **API** | An application programming interface (API) is a computing interface that defines interactions between multiple software intermediaries. It defines the kinds of calls or requests that can be made, how to make them, the data formats that should be used, the conventions to follow, etc. It can also provide extension mechanisms so that users can extend existing functionality in various ways and to varying degrees. |
| **REST web service** | Representational state transfer (REST) is a software architectural style that defines a set of constraints to be used for creating Web services. Web services that conform to the REST architectural style, called RESTful Web services, provide interoperability between computer systems on the internet. RESTful Web services allow the requesting systems to access and manipulate textual representations of Web resources by using a uniform and predefined set of stateless operations. |
| **SOAP web service** | SOAP (formerly an acronym for Simple Object Access Protocol) is a messaging protocol specification for exchanging structured information in the implementation of web services in computer networks. Its purpose is to provide extensibility, neutrality, verbosity and independence. It uses XML Information Set for its message format, and relies on application layer protocols, most often Hypertext Transfer Protocol (HTTP), although some legacy systems communicate over Simple Mail Transfer Protocol (SMTP), for message negotiation and transmission. |
| **Raspberry Pi 4 Model B** | A single-board computer that was released in February 2016 with a 1.2 GHz 64-bit quad core ARM Cortex-A53 processor, on-board 802.11n Wi-Fi, Bluetooth and USB boot capabilities. |
| **ARM processor** | ARM (stylized in lowercase as arm, previously an acronym for Advanced RISC Machines and originally Acorn RISC Machine) is a family of reduced instruction set computing (RISC) architectures for computer processors, configured for various environments. Due to their low costs, minimal power consumption, and lower heat generation than their competitors, ARM processors are desirable for light, portable, battery-powered devices‍—‌including smartphones, laptops and tablet computers, as well as other embedded systems. |
| **RISC Machine** | A reduced instruction set computer, or RISC, is a computer with a small, highly optimized set of instructions.  The main distinguishing feature of RISC architecture is that the instruction set is optimized with a large number of registers and a highly regular instruction pipeline, allowing a low number of clock cycles per instruction (CPI). Another common RISC feature is the load/store architecture, in which memory is accessed through specific instructions rather than as a part of most instructions in the set |
| **Web Service** | * A service offered by an electronic device to another electronic device, communicating with each other via the World Wide Web, or * A server running on a computer device, listening for requests at a particular port over a network, serving web documents (HTML, JSON, XML, images), and creating web applications services, which serve in solving specific domain problems over the Web (WWW, Internet, HTTP) |
| **Client–server model** | Client–server model is a distributed application structure that partitions tasks or workloads between the providers of a resource or service, called servers, and service requesters, called clients. Often clients and servers communicate over a computer network on separate hardware, but both client and server may reside in the same system. A server host runs one or more server programs, which share their resources with clients. A client does not share any of its resources, but it requests content or service from a server. Clients, therefore, initiate communication sessions with servers, which await incoming requests. Examples of computer applications that use the client-server model are email, network printing, and the World Wide Web. |
| **MVC** | Model–view–controller (MVC) is a software design pattern commonly used for developing user interfaces that divides the related program logic into three interconnected elements. This is done to separate internal representations of information from the way’s information is presented to and accepted from the user.  Traditionally used for desktop graphical user interfaces (GUIs), this pattern has become popular for designing web applications. |
| **Software Architecture** | The architecture of a system is its 'skeleton'. It's the highest level of abstraction of a system. What kind of data storage is present, how do modules interact with each other, what recovery systems are in place. |
| **Software Design** | Software design is about designing the individual modules / components. What are the responsibilities, functions, of module x? Of class Y? What can it do, and what not? What design patterns can be used? |
| **So, in short, Software architecture is more about the design of the entire system, while software design emphasizes on module / component / class level.** | |
| **Face Detection** | Face detection is a computer vision problem that involves finding faces in photos.  It is a trivial problem for humans to solve and has been solved reasonably well by classical feature-based techniques, such as the cascade classifier. |
| **Face Recognition** | It is a technology capable of matching a human face from a digital image or a video frame against a database of faces, typically employed to authenticate users through ID verification services, works by pinpointing and measuring facial features from a given image. |
| **NumPy** | NumPY is a library for the Python programming language, adding support for large, multi-dimensional arrays and matrices, along with a large collection of high-level mathematical functions to operate on these arrays. |
| **Flask** | Flask is a micro web framework written in Python. It is classified as a microframework because it does not require particular tools or libraries. It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions. However, Flask supports extensions that can add application features as if they were implemented in Flask itself. Extensions exist for object-relational mappers, form validation, upload handling, various open authentication technologies and several common framework related tools. |
| **SQL** | Structured Query Language is a domain-specific language used in programming and designed for managing data held in a relational database management system (RDBMS), or for stream processing in a relational data stream management system (RDSMS). It is particularly useful in handling structured data, i.e., data incorporating relations among entities and variables.  SQL offers two main advantages over older read–write APIs such as ISAM or VSAM. Firstly, it introduced the concept of accessing many records with one single command. Secondly, it eliminates the need to specify how to reach a record, e.g., with or without an index. |
| **SQLAlchemy** | SQLAlchemy is an open-source SQL toolkit and object-relational mapper (ORM) for the Python programming language released under the MIT License.  SQLAlchemy's philosophy is that relational databases behave less like object collections as the scale gets larger and performance starts being a concern, while object collections behave less like tables and rows as more abstraction is designed into them. For this reason it has adopted the data mapper pattern (similar to Hibernate for Java) rather than the active record pattern used by a number of other object-relational mappers. |
| **OpenCV** | OpenCV (Open-Source Computer Vision Library) is an open-source computer vision and machine learning software library. OpenCV was built to provide a common infrastructure for computer vision applications and to accelerate the use of machine perception in the commercial products. Being a BSD-licensed product, OpenCV makes it easy for businesses to utilize and modify the code.  The library has more than 2500 optimized algorithms, which includes a comprehensive set of both classic and state-of-the-art computer vision and machine learning algorithms. These algorithms can be used to detect and recognize faces, identify objects, classify human actions in videos, track camera movements, track moving objects, extract 3D models of objects, produce 3D point clouds from stereo cameras, stitch images together to produce a high resolution image of an entire scene, find similar images from an image database, remove red eyes from images taken using flash, follow eye movements, recognize scenery and establish markers to overlay it with augmented reality, etc. |
| **Software Development Models** | The software development models are the various processes or methodologies that are being selected for the development of the project depending on the project’s aims and goals. There are many development life cycle models that have been developed in order to achieve different required objectives. The models specify the various stages of the process and the order in which they are carried out. The selection of model has very high impact on the testing that is carried out. It will define the what, where and when of our planned testing, influence regression testing and largely determines which test techniques to use. |
| **Python** | Python is an interpreted, high-level and general-purpose programming language. Python's design philosophy emphasizes code readability with its notable use of significant whitespace. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small and large-scale projects. Python is dynamically typed and garbage-collected. It supports multiple programming paradigms, including structured (particularly, procedural), object-oriented and functional programming. Python is often described as a "batteries included" language due to its comprehensive standard library. |
| **HTTP cookie** | An HTTP cookie (also called web cookie, Internet cookie, browser cookie, or simply cookie) is a small piece of data stored on the user's computer by the web browser while browsing a website. Cookies were designed to be a reliable mechanism for websites to remember stateful information (such as items added in the shopping cart in an online store) or to record the user's browsing activity (including clicking particular buttons, logging in, or recording which pages were visited in the past). They can also be used to remember pieces of information that the user previously entered into form fields, such as names, addresses, passwords, and payment card numbers. Cookies perform essential functions in the modern web. Perhaps most importantly, authentication cookies are the most common method used by web servers to know whether the user is logged in or not, and which account they are logged in with. Without such a mechanism, the site would not know whether to send a page containing sensitive information, or require the user to authenticate themselves by logging in. The security of an authentication cookie generally depends on the security of the issuing website and the user's web browser, and on whether the cookie data is encrypted. |
| **WebSocket** | The WebSocket protocol enables interaction between a web browser (or other client application) and a web server with lower overhead than half-duplex alternatives such as HTTP polling, facilitating real-time data transfer from and to the server. This is made possible by providing a standardized way for the server to send content to the client without being first requested by the client, and allowing messages to be passed back and forth while keeping the connection open. In this way, a two-way ongoing conversation can take place between the client and the server. The communications are usually done over TCP port number 443 (or 80 in the case of unsecured connections), which is of benefit for those environments which block non-web Internet connections using a firewall. Similar two-way browser-server communications have been achieved in non-standardized ways using stopgap technologies such as Comet. |
| **Embedded system** | An embedded system is a computer system—a combination of a computer processor, computer memory, and input/output peripheral devices—that has a dedicated function within a larger mechanical or electrical system. It is embedded as part of a complete device often including electrical or electronic hardware and mechanical parts. Because an embedded system typically controls physical operations of the machine that it is embedded within, it often has real-time computing constraints. Embedded systems control many devices in common use today. Ninety-eight percent of all microprocessors manufactured are used in embedded systems.  Modern embedded systems are often based on microcontrollers (i.e., microprocessors with integrated memory and peripheral interfaces), but ordinary microprocessors (using external chips for memory and peripheral interface circuits) are also common, especially in more complex systems. In either case, the processor(s) used may be types ranging from general purpose to those specialized in a certain class of computations, or even custom designed for the application at hand. A common standard class of dedicated processors is the digital signal processor (DSP). |
| **Wi-Fi** | Wi-Fi is a family of wireless network protocols, based on the IEEE 802.11 family of standards, which are commonly used for local area networking of devices and Internet access.  Wi-Fi uses multiple parts of the IEEE 802 protocol family and is designed to interwork seamlessly with its wired sibling Ethernet. Compatible devices can network through wireless access points to each other as well as to wired devices and the Internet. The different versions of Wi-Fi are specified by various IEEE 802.11 protocol standards, with the different radio technologies determining radio bands, and the maximum ranges, and speeds that may be achieved. Wi-Fi most commonly uses the 2.4 gigahertz (120 mm) UHF and 5 gigahertz (60 mm) SHF ISM radio bands; these bands are subdivided into multiple channels. Channels can be shared between networks but only one transmitter can locally transmit on a channel at any moment in time. |
| **MOSFET** | The metal–oxide–semiconductor field-effect transistor (MOSFET, MOS-FET, or MOS FET), also known as the metal–oxide–silicon transistor (MOS transistor, or MOS), is a type of insulated-gate field-effect transistor that is fabricated by the controlled oxidation of a semiconductor, typically silicon. The voltage of the covered gate determines the electrical conductivity of the device; this ability to change conductivity with the amount of applied voltage can be used for amplifying or switching electronic signals.  It is the basic building block of modern electronics, and the most frequently manufactured device in history, with an estimated total of 13 sextillion (1.3×1022) MOSFETs manufactured between 1960 and 2018. It is the dominant semiconductor device in digital and analog integrated circuits (ICs), and the most common power device. It is a compact transistor that has been miniaturized and mass-produced for a wide range of applications, revolutionizing the electronics industry and the world economy, and being central to the digital revolution, silicon age and information age. MOSFET scaling and miniaturization has been driving the rapid exponential growth of electronic semiconductor technology since the 1960s, and enables high-density ICs such as memory chips and microprocessors. |
| **OAuth** | OAuth is an open standard for access delegation, commonly used as a way for Internet users to grant websites or applications access to their information on other websites but without giving them the passwords. This mechanism is used by companies such as Amazon, Google, Facebook, Microsoft and Twitter to permit the users to share information about their accounts with third party applications or websites. Generally, OAuth provides clients a "secure delegated access" to server resources on behalf of a resource owner. It specifies a process for resource owners to authorize third-party access to their server resources without providing credentials. Designed specifically to work with Hypertext Transfer Protocol (HTTP), OAuth essentially allows access tokens to be issued to third-party clients by an authorization server, with the approval of the resource owner. The third party then uses the access token to access the protected resources hosted by the resource server. |
| **Hypertext Transfer Protocol** | The Hypertext Transfer Protocol (HTTP) is an application layer protocol for distributed, collaborative, hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web, where hypertext documents include hyperlinks to other resources that the user can easily access, for example by a mouse click or by tapping the screen in a web browser. HTTP functions as a request–response protocol in the client–server computing model. A web browser, for example, may be the client and an application running on a computer hosting a website may be the server. The client submits an HTTP request message to the server. The server, which provides resources such as HTML files and other content, or performs other functions on behalf of the client, returns a response message to the client. The response contains completion status information about the request and may also contain requested content in its message body. |