HTTP Basics 101

What is HTTP

•HTTP stands for **HyperText Transfer Protocol.**
•Hypertext Transfer Protocol is a set of rule which is used for transferring the files like, audio, video, graphic image, text and other multimedia files on the WWW (World Wide Web).
•HTTP is an application-level protocol. The communication usually takes place through TCP/IP sockets, but any reliable transport can also be used.
•HTTP is used to make communication between a variety of hosts and clients. It supports a mixture of network configuration.
•HTTP is a protocol that is used to transfer the hypertext from the client end to the server end, but HTTP does not have any security.
•Whenever a user opens their Web Browser, that means the user indirectly uses HTTP.

What is HTTPS

•HTTPS stands for **HyperText Transfer Protocol Secure**. HTTPS has a secure transfer.
•HTTPS is used to encrypt or decrypt user HTTP page or HTTP page requests that are returned by the webserver.
•In HTTPS, the standard port to transfer the information is 443.
•Using the HTTPS, sensitive information that we want to transfer from one user to another user can be done securely.
•HTTPS protocol uses HTTP on connection encrypted by SSL (Secure Socket Layer) or TLS (Transport Layer Security).
•HTTPS protects transmitted data from man-in-the-middle (MITM) attacks and eavesdropping.
•It is the default protocol for conduction financial transactions on the web.

Three important things about HTTP

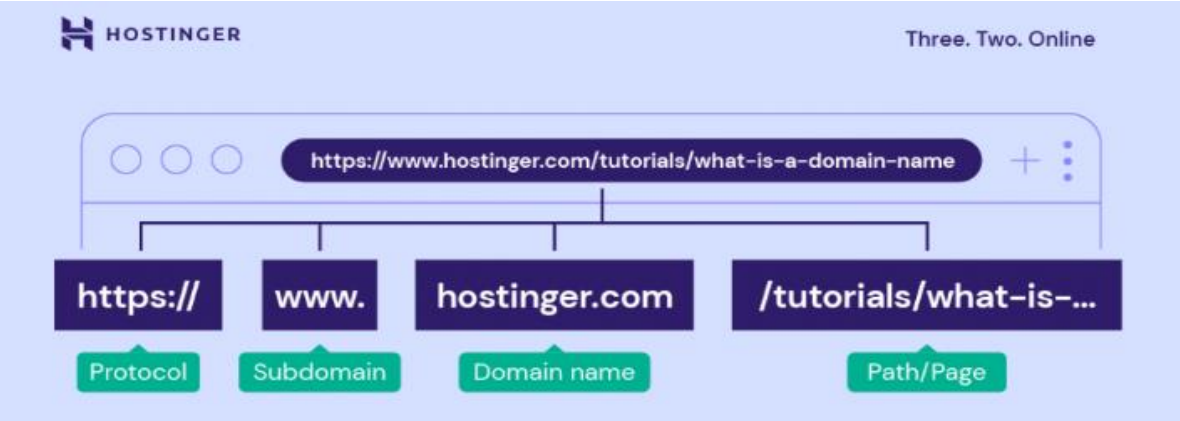
Connectionless: HTTP is connectionless. When the HTTP client opens the browser, the browser initiates an HTTP request. After making the request, the client disconnect from the server and wait for the response. When the response is ready, the server re-establish the connection again and delivers the response to the client, after which the client disconnects the connection. So both client and server know about each other during the current request and response only.

Media Independent: HTTP is media independent. HTTP can deliver any sort of data, as long as the two computers can read it.

Stateless: The HTTP is stateless. The client and server just know about each other just during the current request. If the connection is closed, and two computers want to connect again, they need to provide information to each other anew, and the connection is handled as the very first one.

What Is URL

A **URL** or a uniform resource locator is an identifier that only indicates the location of a web page. It refers to a web address and its access possibilities, such as HTTP, FTP, and mailto.



Protocol : The first part of the URL syntax is a protocol used to retrieve a resource. http, https, ftp

Subdomain: consists of any words or phrases that come before a URL's first dot. Referring to the world wide web, **www** is the most common type. It indicates that a website is accessible through the internet and uses HTTP to communicate.

Domain name : what users type into their browser's address bar to reach a website. It consists of a site name and an extension

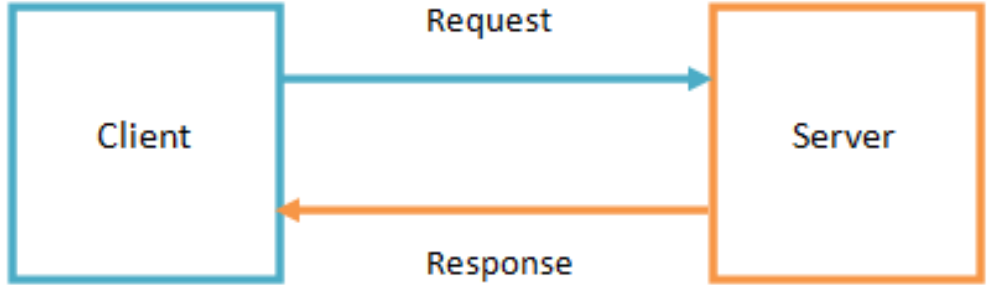
Path: This element identifies the specific location of a web page, a post, or other files that users want to access within the domain name. A path also contains any asset file extension, such as images and documents.
Some examples for paths are …/software/htp/index.html or …/forum/question/

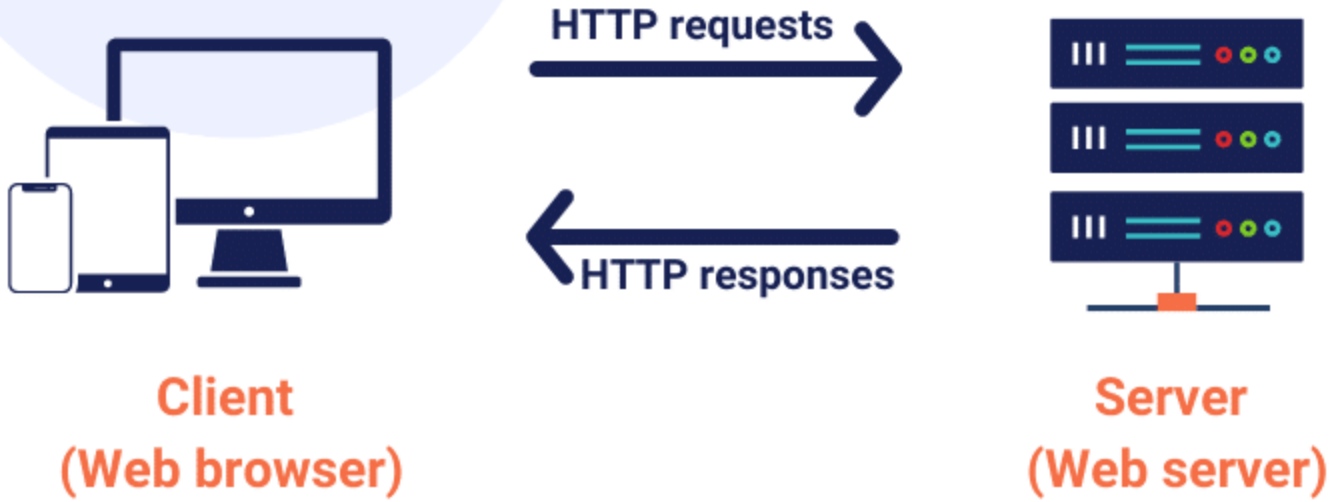
Query String : This string delivers data about the resource on the web server and is preceded by a question mark. It usually contains a key and value pairs separated by an ampersand. For example,
?tag=networking&order=newest .

Process whenever you visit a URL page on the WEB

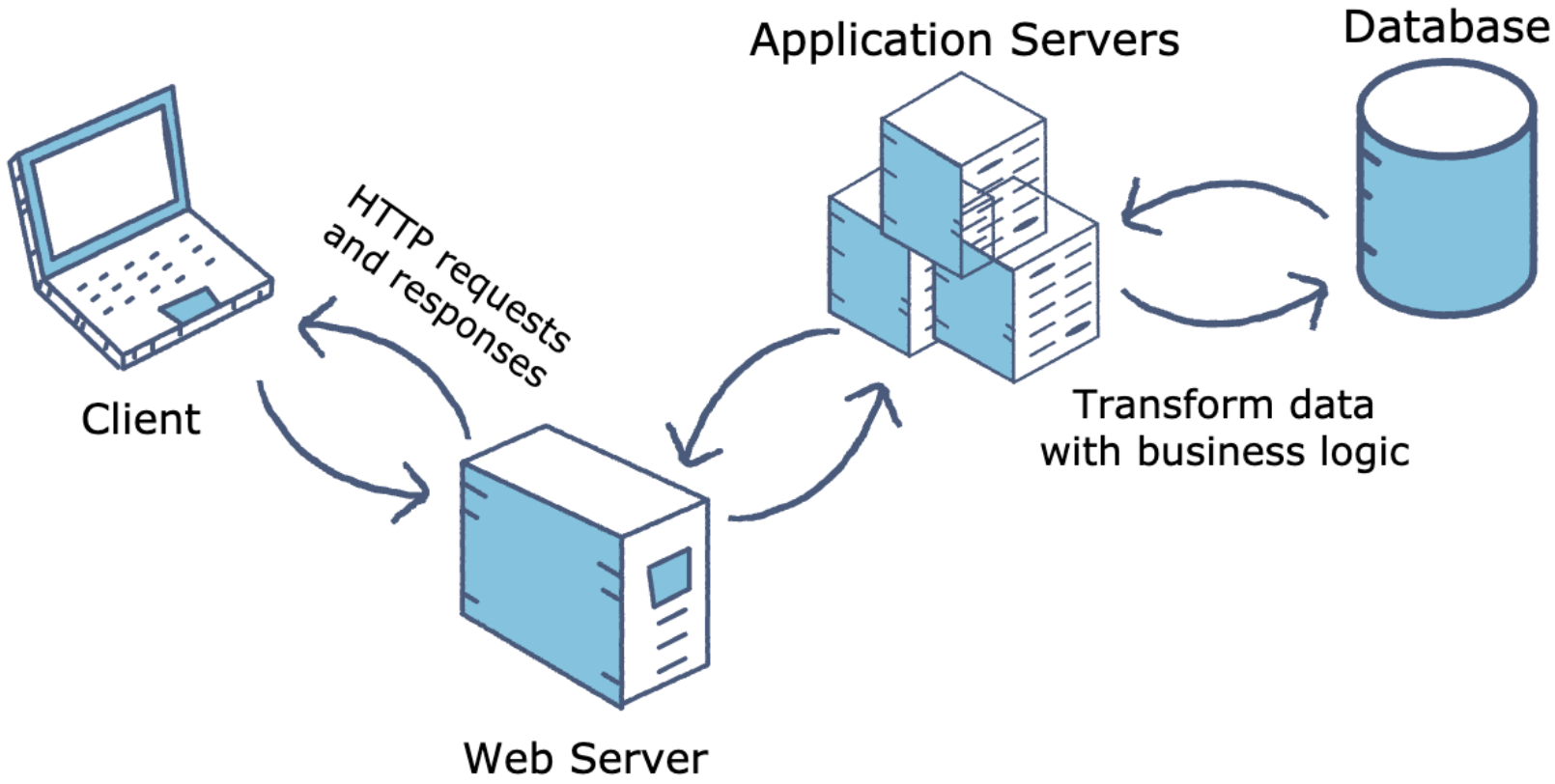
https://www.khanacademy.org/computing/computers-and-internet/xcae6f4a7ff015e7d:the-internet/xcae6f4a7ff015e7d:web-protocols/a/hypertext-transfer-protocol-http

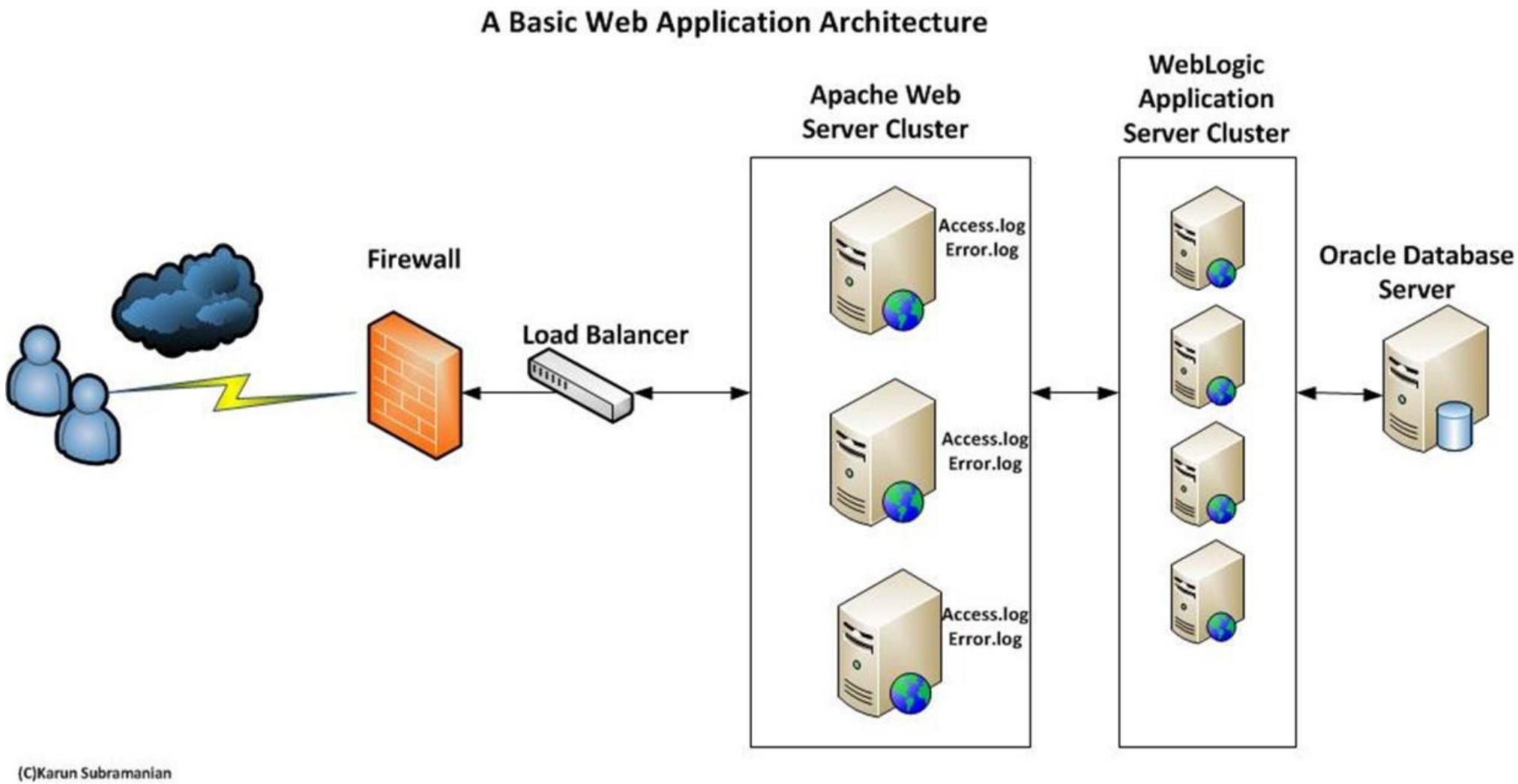
HTTP Process





Basic example Infrastructure/Architecture Diagram of Web Application




A Basic Web Application Architecture
Apache Web Server Cluster
WebLogic Application Server Cluster
Firewall
Load Balancer
Access.log
Error.log
Access.log
Error.log
Access.log
Error.log
Oracle Database Server
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Basic AWS cloud example Infrastructure Diagram of Web Application