1. **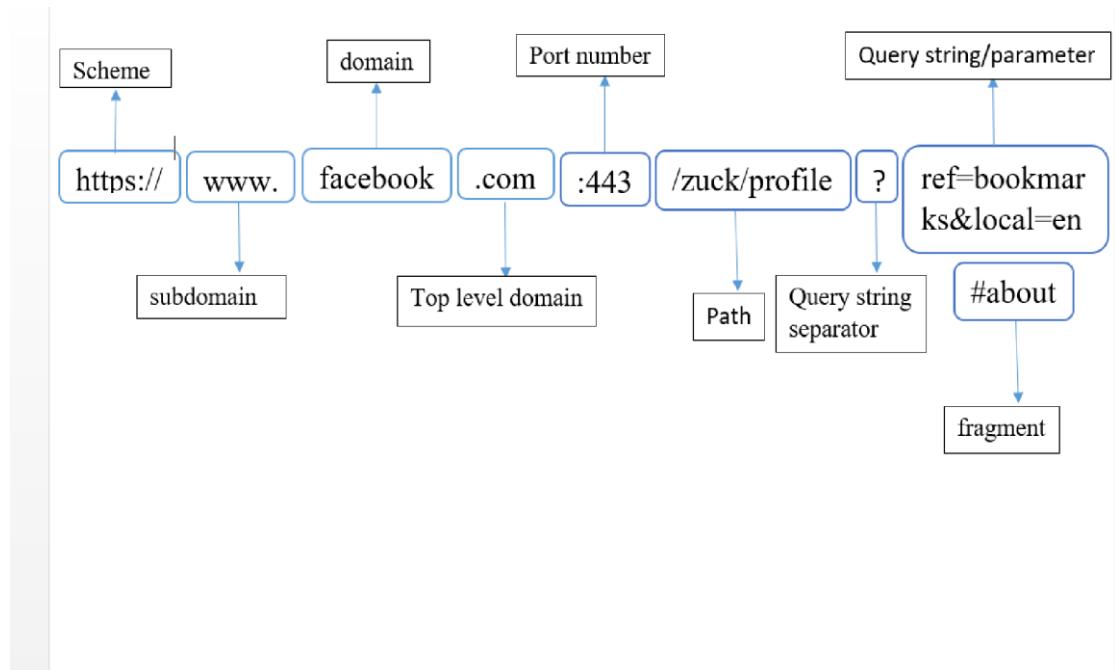What is URL? Give an example of a URL that shows each components of URL. Diagrammatical representation is more preferred.**

   A URL (Uniform Resource Locator) is the web address used to access resources on the internet. It specifies the location of a resource (such as a webpage) and the protocol used to retrieve it.

   i. **Scheme**

      The protocol or scheme part of the URL and indicates the set of rules that will decide the transmission and exchange of data. HTTPS which stands for Hyper Text Transfer Protocol Secure tells the browser to display the page in Hyper Text (HTML) format as well as encrypt any information that the user enters in the page.

   ii. **Subdomain**

      The subdomain is used to separate different sections of the websites as it specifies the type of resource to be delivered to the client. Here the subdomain used 'www' is a general symbol for any resource on the web.

   iii. **Domain Name**

      Domain name specifies the organization or entity that the URL belongs to. Like in _www.facebook.com_ the domain name 'facebook' indicates the organization that owns the site.

   iv. **Top-Level Domain**

      The TLD (top-level domain) indicates the type of organization the website is

registered to. Like the .com in *www.facebook.com* indicates a commercial entity. Similarly, .org indicates organization, co.uk a commercial entity in the UK.

v. **Port Number**

A port number specifies the type of service that is requested by the client since servers often deliver multiple services. Some default port numbers include 80 for HTTP and 443 for HTTPS servers.

vi. **Query String Separator**

The query string which contains specific parameters of the search is preceded by the question mark (?). The question mark tells that a specific query is being performed.

vii. **Query String**

The query string specifies the parameters of the data that is being queried from a website's database. Each query string is made up of a parameter and a value joined by the equals (=) sign. In case of multiple parameters, query strings are joined using the ampersand (&) sign.

viii. **Fragment**

The fragment identifier of a URL is optional, usually at the end, and begins with a hash (#). It indicated a specific location within a page such as the 'id' or 'name' attribute for an HTML element.

2. URLs vs. URIs with examples for each. Can all URLs be URIs? Why?

Both URL (Uniform Resource Locator) and ULI (Uniform Resource Identifier) are used to identify resources on the internet, but are slightly different.

All URLs are URIs, but not all URIs are URLs. This is because URLs are just specific type of URI that includes a way to locate a resource, while URIs can also be non-locatable identifiers like URNs.

URI(Uniform Resource Identifier)	URL(Uniform Resource Locator)
A URI is a generic term that refers to any string used to identify a resource.	A URL is a subset of a URI that specifically provides a way to locate a resource by specifying its access mechanism (protocol) and its address.
It can be either a URL (locator) or a URN (name) or both.	It always includes a method to locate and access the resource.
Example: • mailto:someone@example.com (Identifies an email address but doesn't locate it) • urn:isbn:0451450523(An ISBN number for a book, a unique identifier but not a locator)	Example: • https://www.example.com/index.html (Specifies how to retrieve the webpage. • ftp://ftp.example.com/file.txt (Specifies an FTP resource location)