

Assignment-3

- 1) What is URL? Give an example of a URL that shows each components of URL. Diagrammatic representation is more preferred.

A URL (Uniform Resource Locator) is a web address used to locate a specific resource on the internet. It consists of several components that guide web browsers on how and where to retrieve a resource.

Here are the main components of a URL, some of them are illustrated with an example:

- Protocol (Schema): This specifies the communication protocol used to access the resources include HTTP and HTTPS.
- Subdomain: This is an optional part that precedes the main domain name. Common subdomains include “www”, “blog” and “mail”.
- Domain Name: This is the unique identifier of a website. It consists of a second-level domain and a top-level domain.
- Path: This specifies the location of a specific file or resource within the domain.
- Port: This is optional and specifies the network port to use for the connection. Default ports for HTTP and HTTPS are 80 and 443 respectively.
- Query: This contains parameters or search strings used by dynamic web pages.
- Fragment: This is an internal reference point within a resource, often used for linking to specific sections of a webpage.

Example:

<https://www.example.com/path/to/resource?query=parameter#fragment>

Protocol (Scheme): https

Subdomain: www

Domain Name: example.com

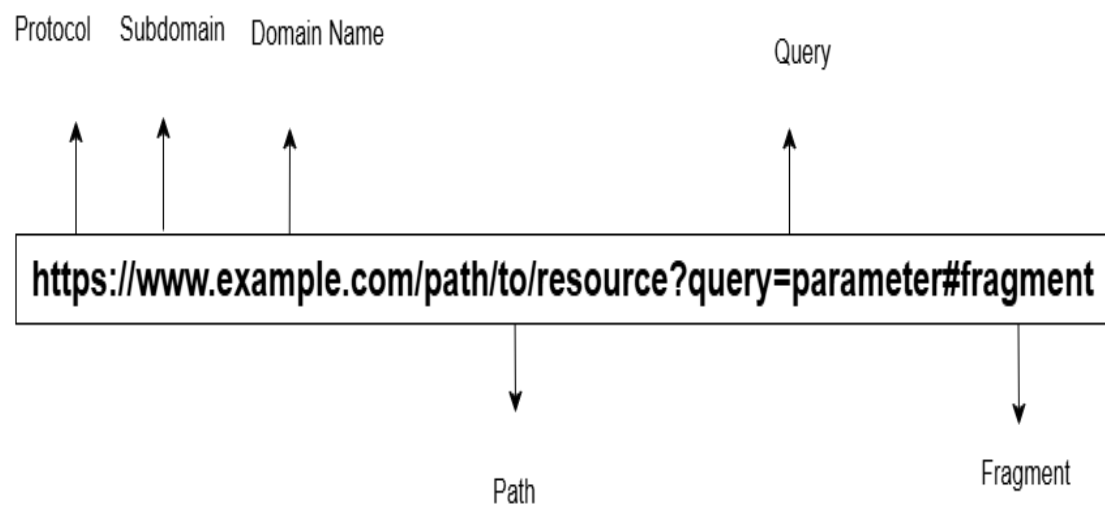
Path: /path/to/resource

Query: ? query=parameter

Fragment: #fragment

Port: Not specified (using default port 443 for HTTPS)

Diagram:



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

URL: A URL (Uniform Resource Locator) is used to locate a resource on the internet by specifying its location and how to access it.

URLs typically include components like protocol (e.g. http, https), domain name, path and query parameters.

All URLs are URIs because they identify resources.

Examples:

URLs

Web Page: `https://www.example.com/index.html`

Protocol: https

Domain: example.com

Path: /index.html

FTP file: `ftp://ftp.example.com/files/document.pdf`

Protocol: ftp

Domain: [ftp.example.com](ftp://ftp.example.com)

Path:/files/document.pdf

URI: A URI (Uniform Resource Identifier) is a broader term that identifies a resource by its name, location or both , without necessarily specifying how to access it.

URIs can include these components but are not limited to them; they can also be used for non-internet resources.

Not all URIs are URLs since URIs can also include URNs (Uniform Resource Names), which identify resources by name rather than location.

Examples:

URIs

Web Page URI: `https://www.example.com/index.html#date`

This URI identifies a specific resource with a fragment identifier (#date).

URN: urn: isbn: 0451450523

Identifies a book by its ISBN without specifying how to access it.

Mailto URL: <mailto:info@example.com>

Used to initiate an email.

Data URI: data: text/plain; base64, SGVsbG8sIFdvcmxKIQ==

Encodes a string in base64.

Yes, all URLs can be considered URIs because they identify resources. However, not all URIs are URLs because URIs can also include identifiers that do not specify a location or access method, such as URNs.

In summary, while URLs are specific to locating resources on the internet, URUs are more general and can identify resources in various ways, making all URLs a subset of URIs.

