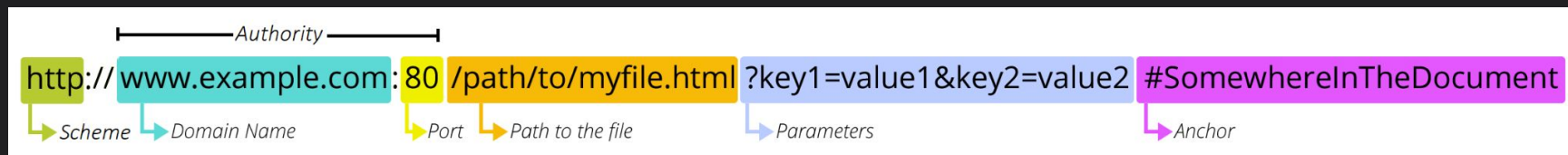# URLs

CS 272 Software Development

Terminology

- **Uniform Resource Locator (URL)**
  - Identifies web pages and other resources

- **Hypertext Transport Protocol (HTTP)**
  - Transfers web pages from server to client (browser)

- **Hypertext Markup Language (HTML)**
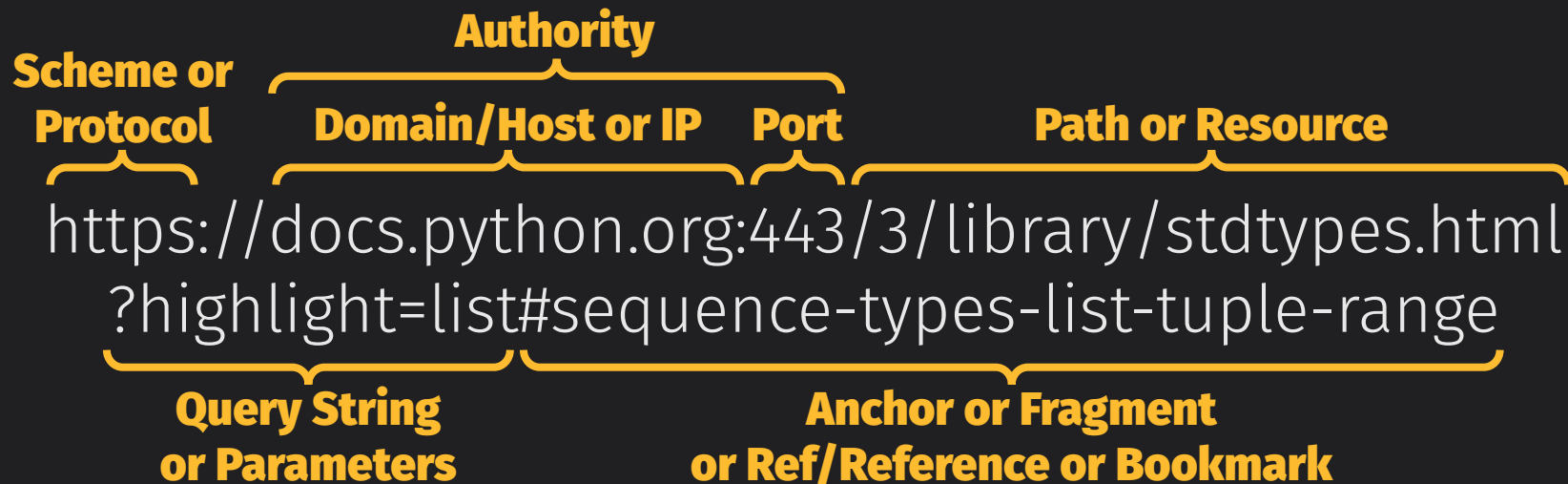 - Creates web pages (parsed/displayed by browser)

URL Components

URL Components

Authority

Scheme or Protocol

Domain/Host or IP   **Port**   **Path or Resource**

https://docs.python.org:443/3/library/stdtypes.html
?highlight=list#sequence-types-list-tuple-range

Query String or Parameters

Anchor or Fragment or Ref/Reference or Bookmark

https://docs.python.org:443/3/library/stdtypes.html?highlight=list#sequence-types-list-tuple-range

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URL Components – Defaults

Authority

Scheme or Protocol

Domain/Host or IP   **Port**   **Path or Resource**

https://docs.python.org:443/3/library/stdtypes.html
?highlight=list#sequence-types-list-tuple-range

Query String or Parameters

Anchor or Fragment or Ref/Reference or Bookmark

https://docs.python.org:443/3/library/stdtypes.html?highlight=list#sequence-types-list-tuple-range

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URL Components – Required

Authority

Scheme or Protocol

Domain/Host or IP   Port   Path or Resource

https://docs.python.org:443/3/library/stdtypes.html
?highlight=list#sequence-types-list-tuple-range
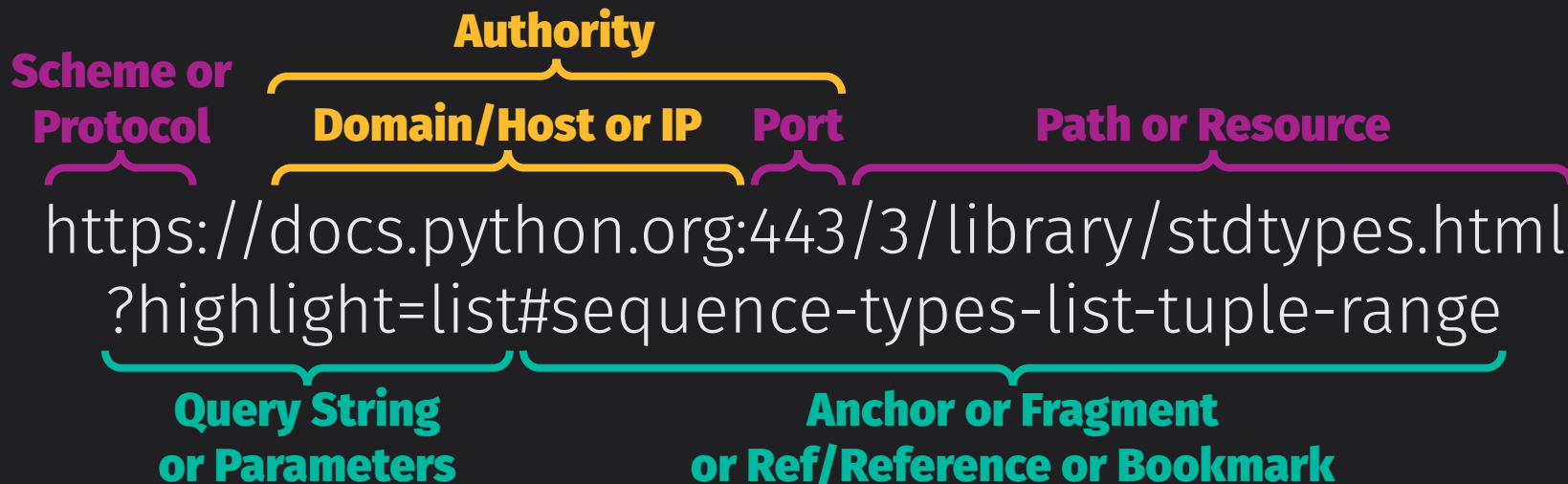
Query String
or Parameters

Anchor or Fragment
or Ref/Reference or Bookmark

https://docs.python.org:443/3/library/stdtypes.html?highlight=list#sequence-types-list-tuple-range
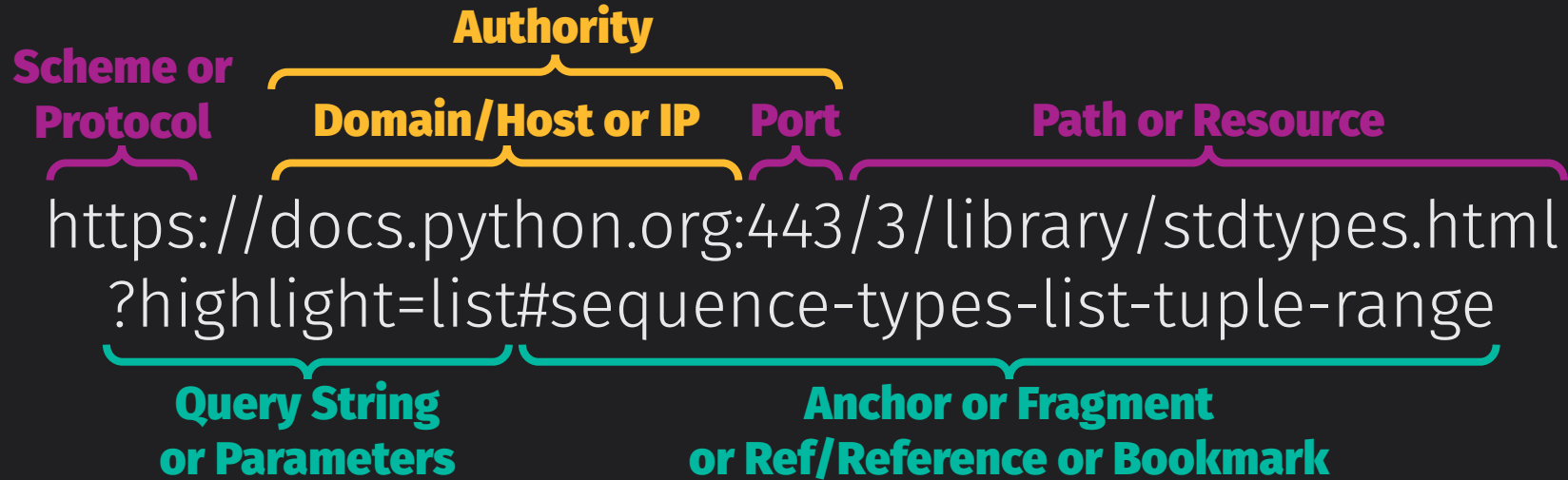
URL Components – Optional

Authority

Scheme or Protocol

Domain/Host or IP

Port

Path or Resource

https://docs.python.org:443/3/library/stdtypes.html?highlight=list#sequence-types-list-tuple-range

Query String or Parameters

Anchor or Fragment or Ref/Reference or Bookmark

https://docs.python.org:443/3/library/stdtypes.html?highlight=list#sequence-types-list-tuple-range

Uniform Resource Locator (URL)

https://docs.python.org:443/3/library/stdtypes.html
?highlight=list#sequence-types-list-tuple-range

- **Required Components**
  - Scheme or protocol ://
  - Authority (domain/IP/~~port~~)
  - Path to resource
    (default to / if missing)

- **Optional Components**
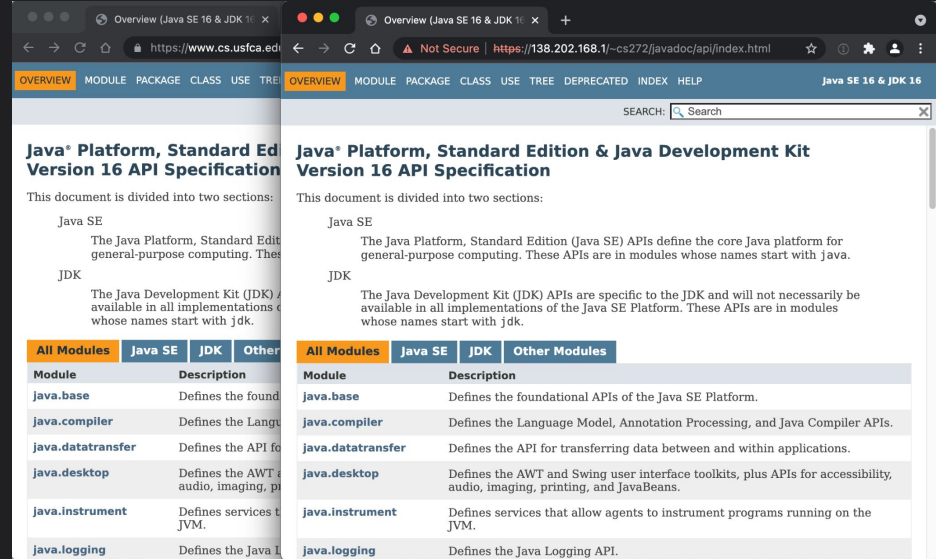 - ? Query string/parameters
  - # Anchor/fragment/ref
- **Absolute vs Relative Form**
  (use of / .. similar to paths)

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Domain vs IP Address

```
nslookup www.cs.usfca.edu
Server:        8.8.8.8
Address:   8.8.8.8#53

Non-authoritative answer:
Name:  www.cs.usfca.edu
Address: 138.202.168.1
```


https://www.cs.usfca.edu/~cs272/javadoc/api/index.html · https://138.202.168.1/~cs272/javadoc/api/index.html

Questions?

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