In this lecture, we will discuss…

HTTP Basics

What is HTTP?

HyperText Transfer Protocol

✧ **Based on request/response *stateless* protocol**
- **Client opens connection to server**
- **Client sends HTTP request for a resource**
- **Server sends HTTP response to the client (w/resource)**
- **Client closes connection to server**

Identifying Resources on the Web

URN: Uniform Resource Name

✧ **Uniquely identifies resource or name of resource**

✧ **Does not tell us how to get the resource**

example:

"HTML/CSS/Javascript/Web Developers/Yaakov/Chaikin"

Identifying Resources on the Web

URI: Uniform Resource Identifier

- ✧ **Uniquely identifies resource or location of resource**
- ✧ **Does not necessarily tell us how to get the resource**

example:
/official_web_site/index.html

Identifying Resources on the Web
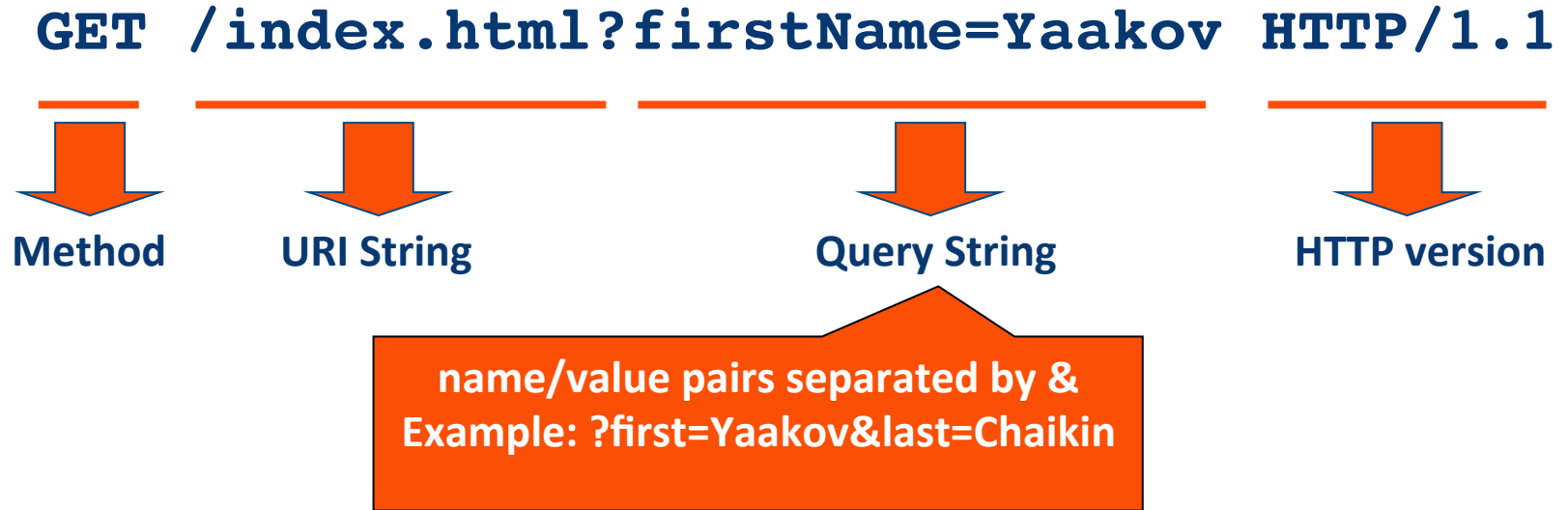
URL: Uniform Resource Locator

✧ **Form of URI that provides info on how to get resource**

example:

http://www.mysite.com/official_web_site/index.html

HTTP Request Structure (GET)

`GET /index.html?firstName=Yaakov HTTP/1.1`

Method **URI String** **Query String** **HTTP version**

name/value pairs separated by &
Example: ?first=Yaakov&last=Chaikin

HTTP Methods

✧ **GET**
- Retrieves the resource
- Data is passed to server as part of the URI
  - ▪ I.e., query string

✧ **POST**
- Sends data to server in order to be processed
- Data is sent in the message body

✧ More methods not covered here

HTTP Request Structure (POST)

```
POST /index.html HTTP/1.1
Host: coursera.org
Accept-Charset: utf-8
firstName=Yaakov…

…

…
```
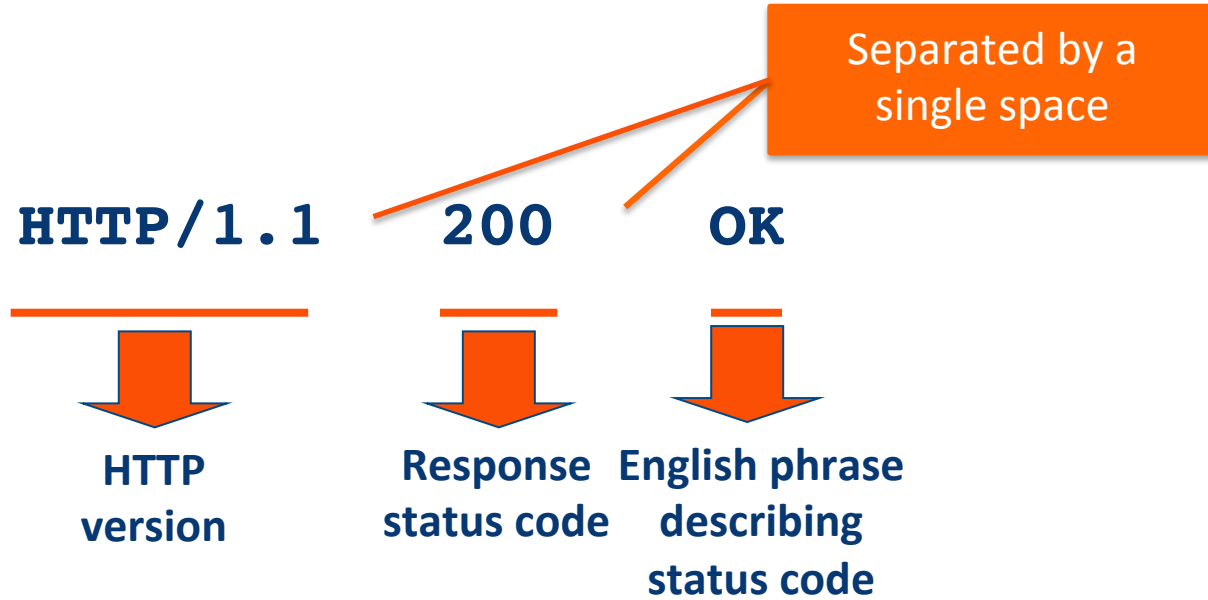
request headers

message body

HTTP Response Structure

Separated by a single space

`HTTP/1.1    200    OK`

HTTP version

Response status code

English phrase describing status code

Typical HTTP Response

HTTP/1.1 200 OK
Date: Tue, 11 Aug 2004 19:00:01 GMT
Content-Type: text/html
<html>
<body>
<h1>Secret to gaining weight REVEALED!</h1>
<p>Develop Coursera courses after work at night while eating sweets to keep yourself awake!</p>
</body>
</html>

Some Response Status Codes

✧ **200 OK**
- Ok, here is the content you requested

✧ **404 Not Found**
- Server can't find the resource requested

✧ **403 Forbidden**
- Unauthenticated client tried to access a secure resource

✧ **500 Internal Server Error**
- Some unhandled error was raised on the server

Summary

✧ Need to understand the basics of HTTP protocol

✧ GET method sends data to server as part of the URL

✧ POST method sends data as part of message body

✧ Response codes: 200, 404, 500, etc.