



APIs



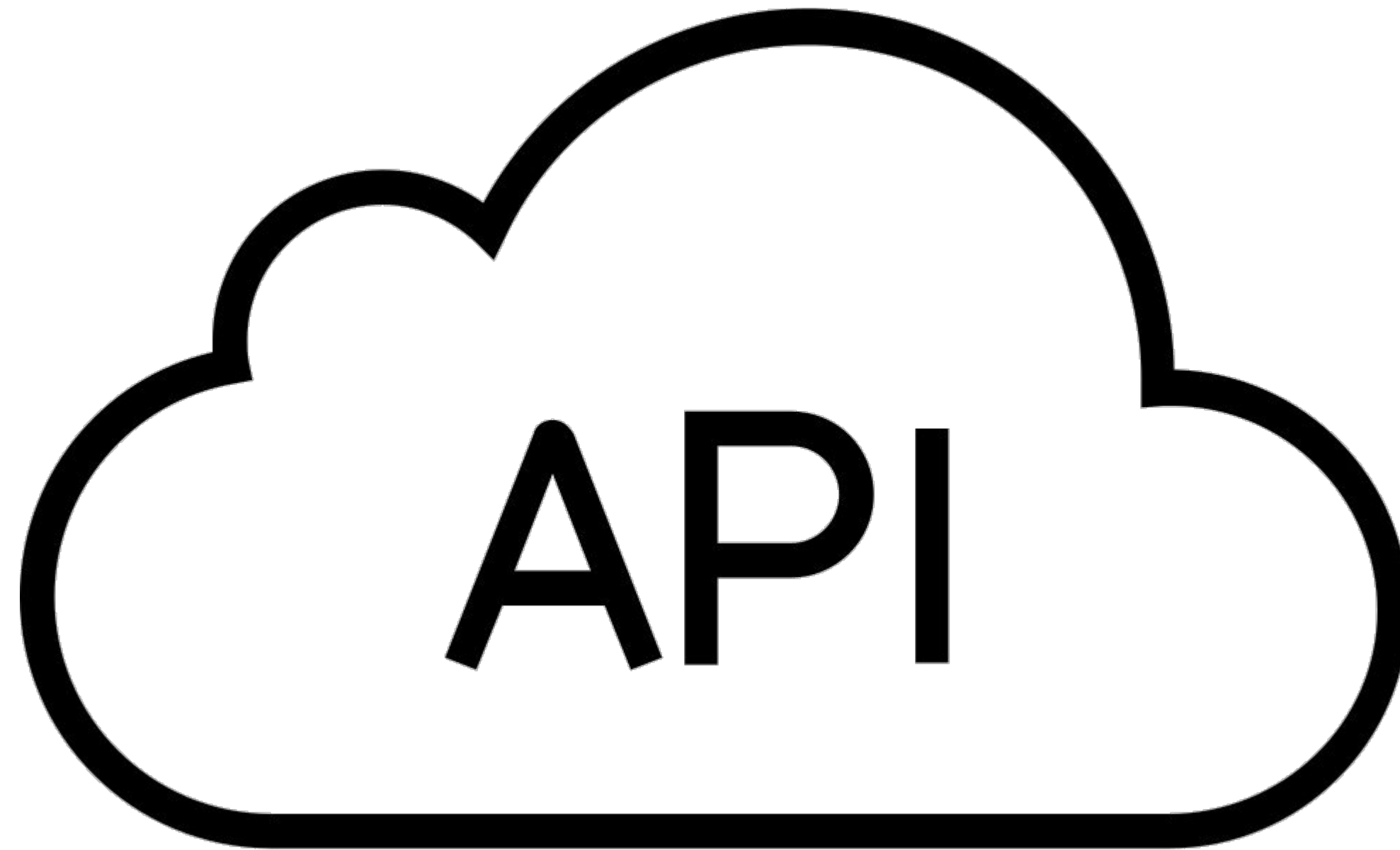
Contents

- What are APIs?
- How Browsers Work with the Internet
 - HTTP
 - Requests
 - Headers
 - Statuses
- A need for a data structure
- JSON



What is an API?

- **API** stands for **A**pplication **P**rogramming **I**nterface
- used to communicate with other computers (servers) in programs
- used for fetching data or deploying applications





HOW BROWSERS WORK

Starting...



Google

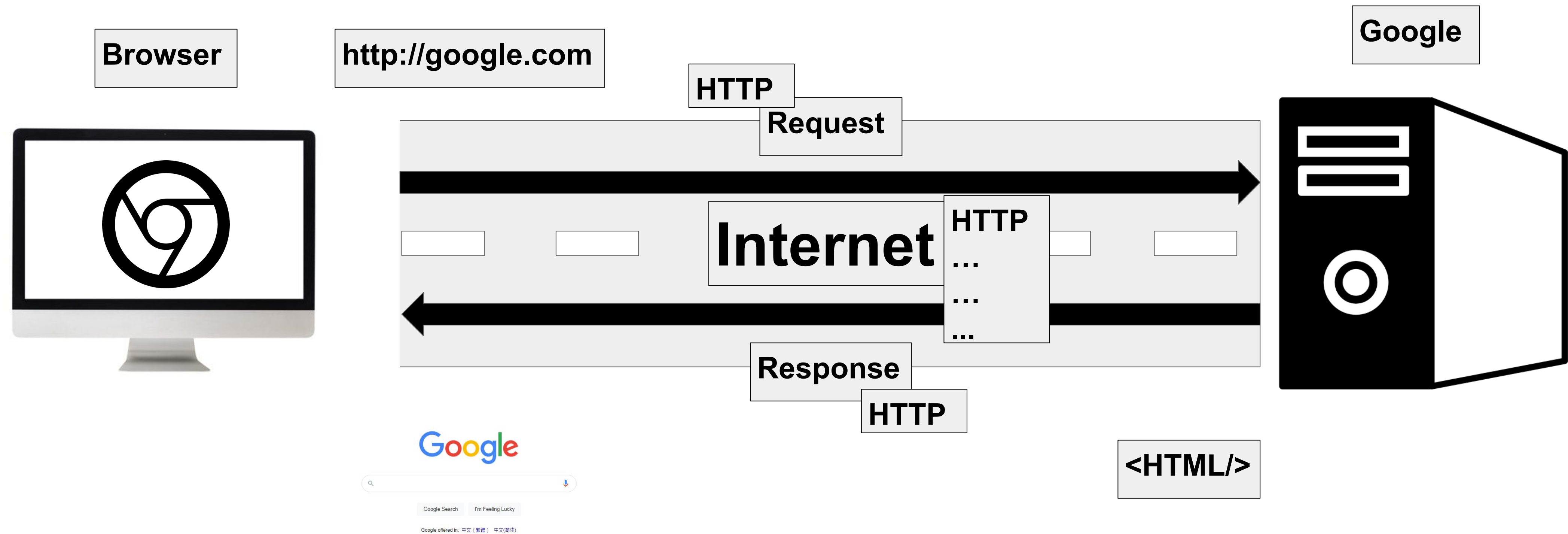
Google Search

I'm Feeling Lucky

Google offered in: [中文（繁體）](#) [中文\(简体\)](#)

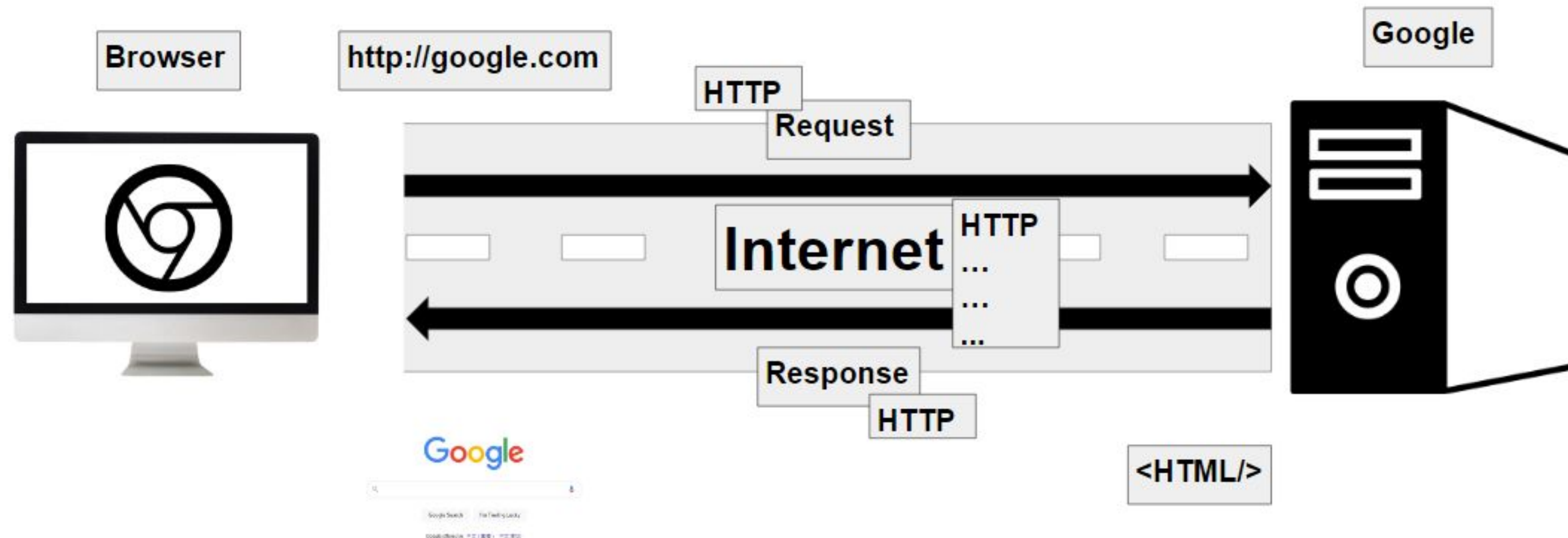


How Browsers Work with the Internet



HTTP

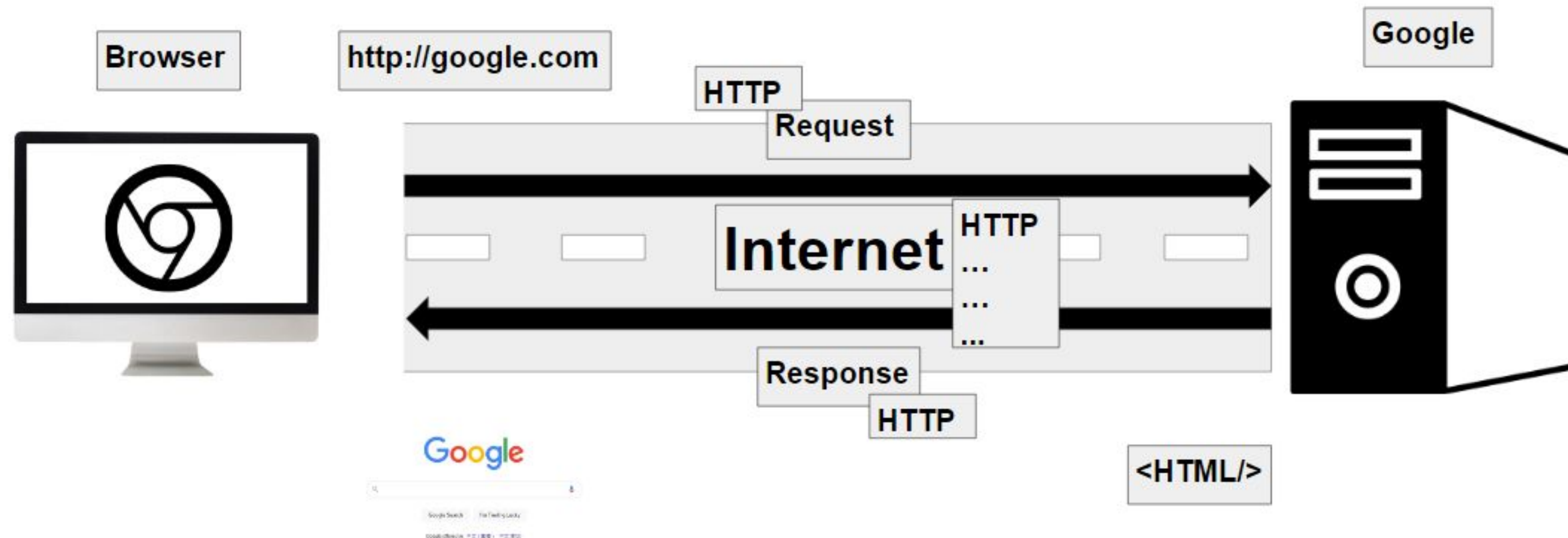
- Hyper Text Transfer Protocol
- a set of rules that define how information is transmitted through the Internet





HTTP Requests

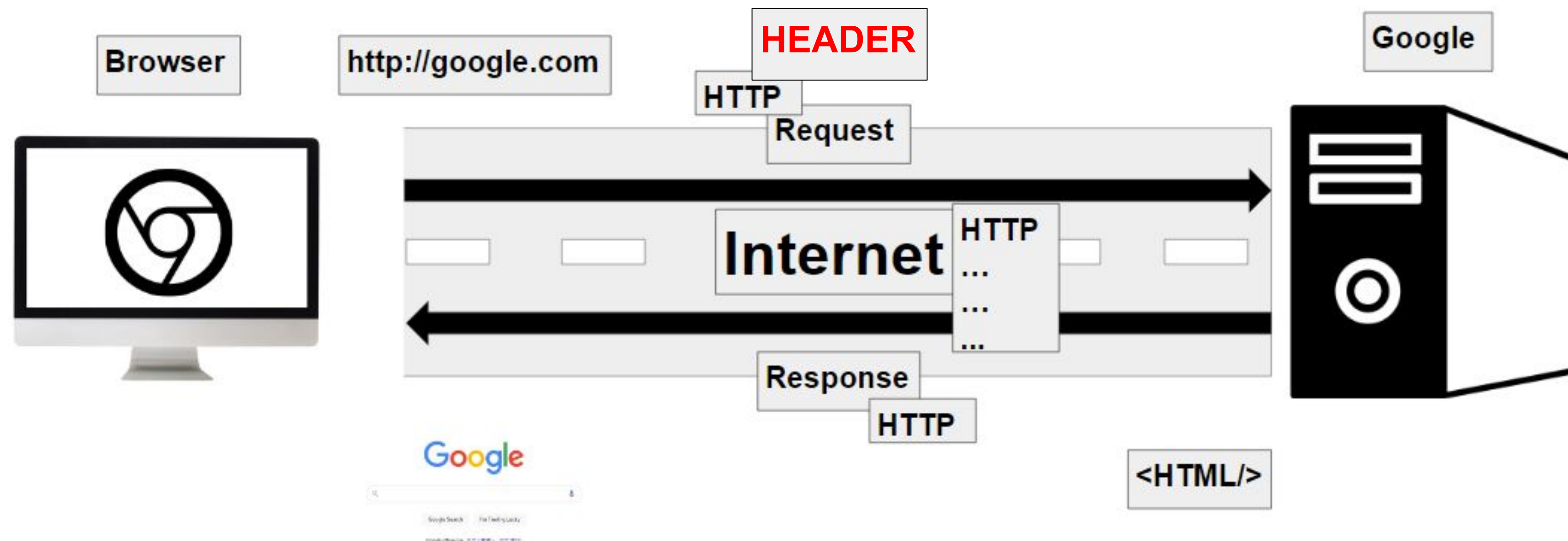
- **GET** - get a resource.
- **POST** - do an action on a server.
- **DELETE** - delete resources on a server.
- **PUT** - update resources on a server.





HTTP Headers

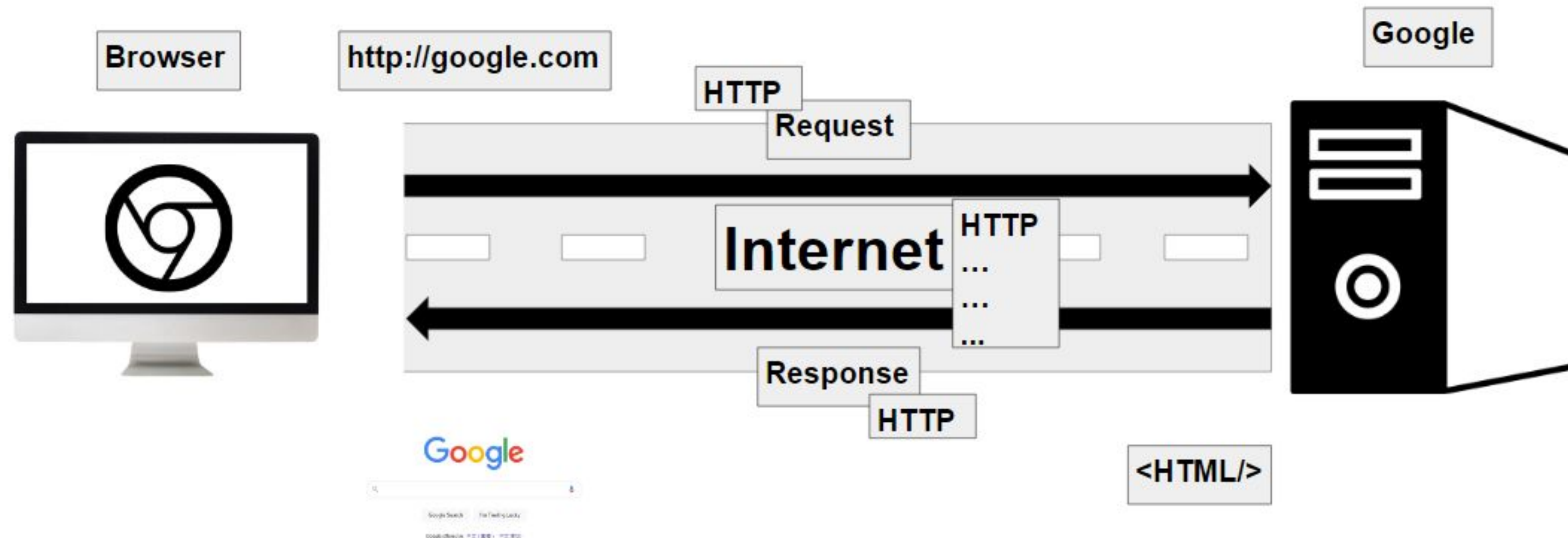
- Additional information on top of an HTTP request that gives the server extra parameters required to process your request
- Comprehensive HTTP headers information:
<https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers>





HTTP Statuses

- 200 - Successful.
- 400 - Bad Request. Check request parameters.
- 401 - Unauthorized. Authentication required for request.
- 403 - Forbidden. You are not allowed to perform this request.
- 404 - Not Found. Resource doesn't exist.
- 408 - Request timeout. Request response took too long.
- 500 - Internal Server Error. Not your fault, server couldn't handle the request.



「Finally...



Google

Google Search

I'm Feeling Lucky

Google offered in: [中文（繁體）](#) [中文\(简体\)](#)

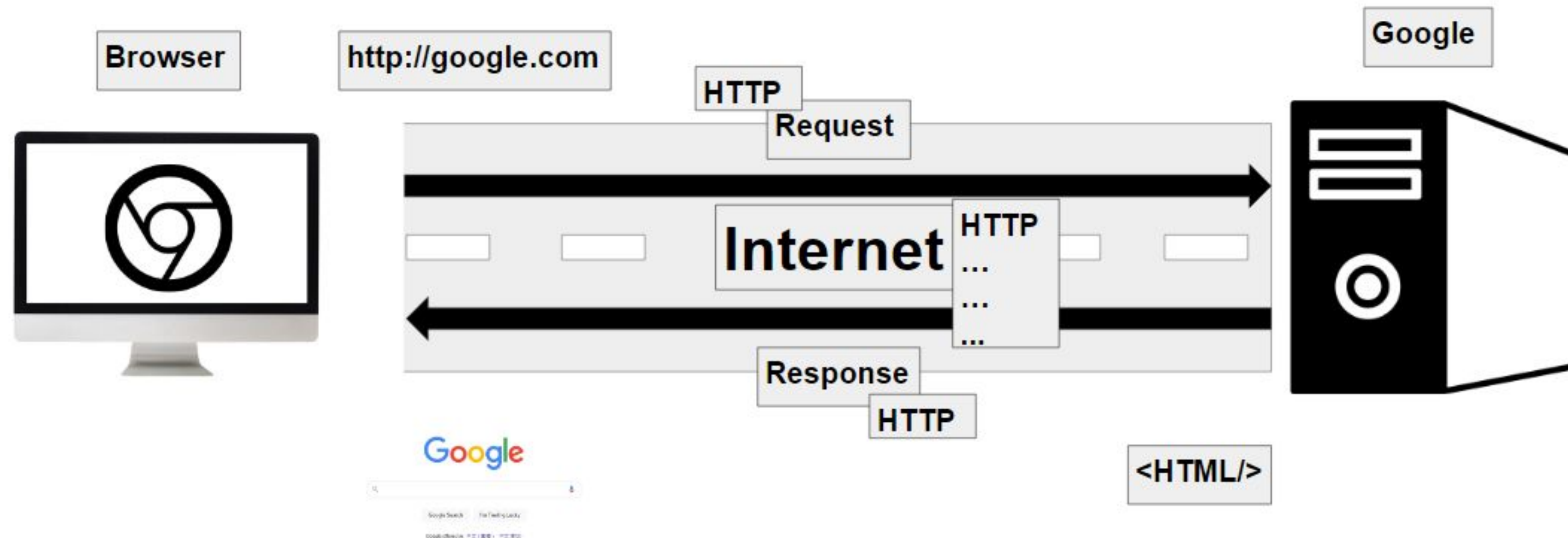


A NEED FOR A DATA STRUCTURE



What if...

- we ask for the data of 1 person?
- “Matthew30Instructor”
- we ask for the data of 1000 people?
- “Matthew30InstructorJyoti18Instructor...”
- Unstructured data
- Leads to extra preprocessing

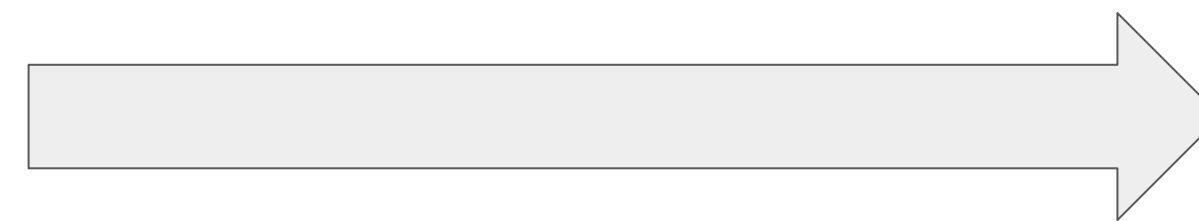




Introducing JSON

- **JSON** - JavaScript **O**bject **N**otation
- provides a structured way of representing data
- Key: string enclosed in quotation marks
- Value: can be of any type (string, number, boolean etc.)
- Key/Value Pair: key followed by a colon, followed by a value. Comma-separated.

“Matthew 30 Instructor Jyoti 18 Instructor...”



Key/Value Pair

Key

Value

```
{
  "name": "Matthew",
  "age": 30,
  "job": "Instructor",
},
{
  "name": "Jyoti",
  "age": 18,
  "job": "Instructor"
},
....
```



APIs