

Fetching Data from a Web Service



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Overview

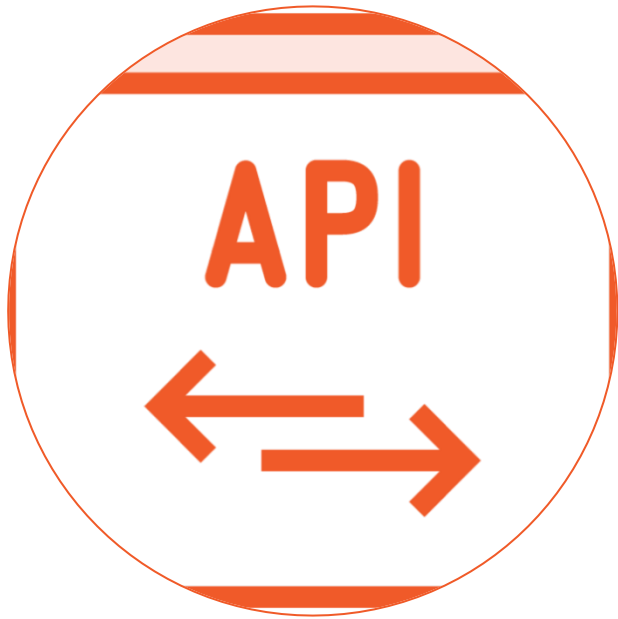


What is a Web Service?

Making a Request

Processing a Response

Web Service Fundamentals



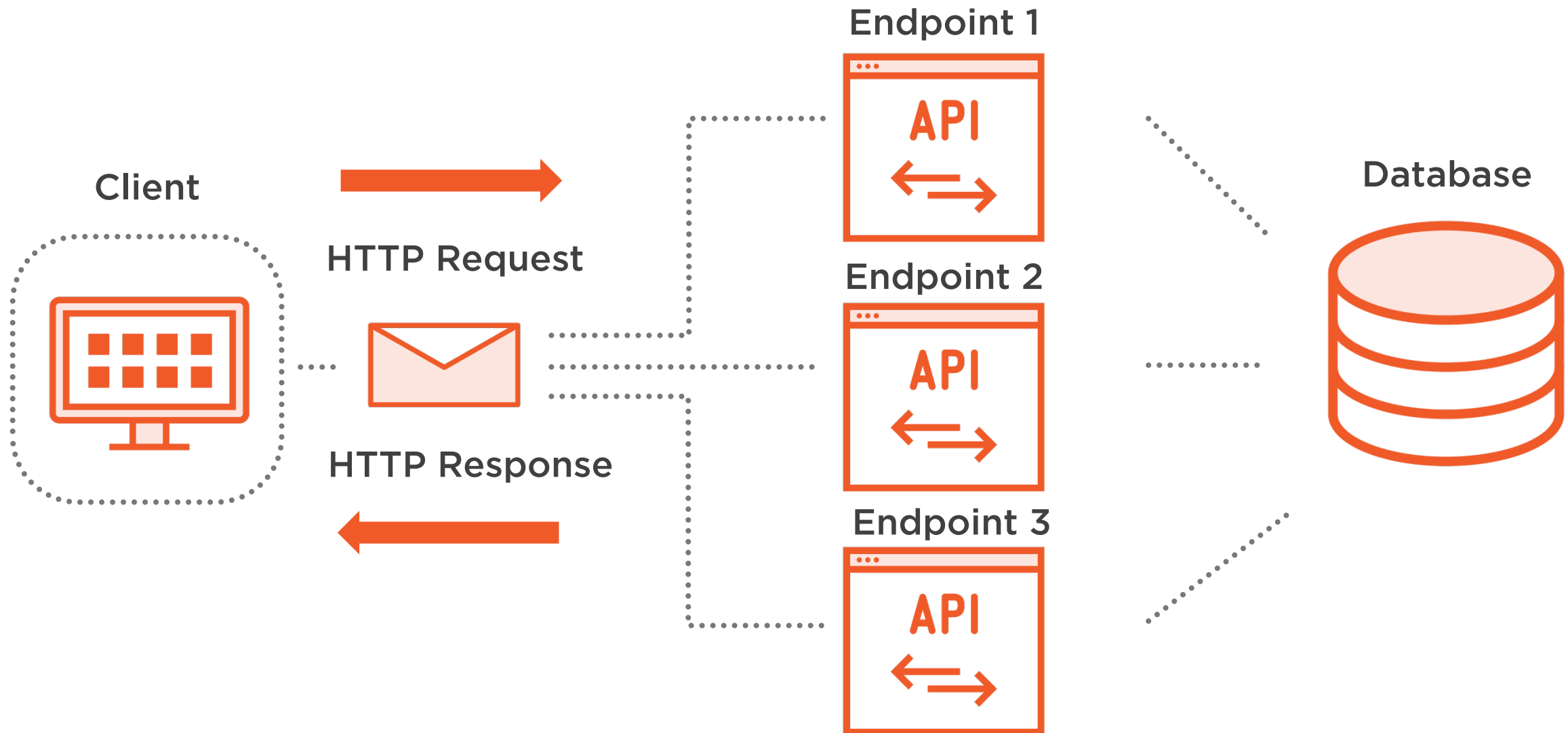
What is a Web Service?

API (Application Programming Interface) for Web Applications

Accessed from the Internet via an Endpoint

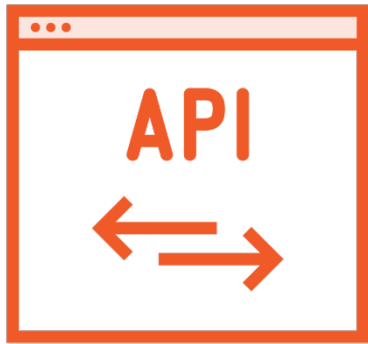
Client makes a request and data is returned as a response

Request / Response Cycle



HTTP Request

A message that you send to an endpoint requesting for data to be returned



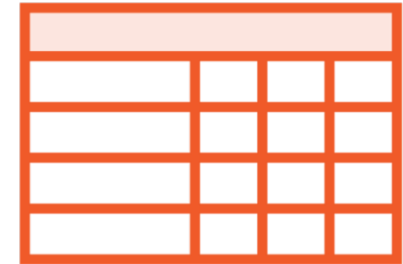
Endpoint

The endpoint in the form of a URL (Uniform Resource Locator) accessed via the HTTP protocol



HTTP Method

GET or a POST
GET: Simple fetch and parameters are in the URL



Parameters

A list of key value pairs that could possible change the data returned

URL vs URI

URL

Includes the protocol as to how to access the endpoint

URI

Refers to the identifier of the actual resource

```
[
  {
    "quote": "The universe is Random. Not Inevitable. It's simple chaos.",
    "author": "Walter White"
  }
]
```

<https://breaking-bad-quotes.herokuapp.com/v1/quotes>

URL will contain the way or protocol (https) you would access an endpoint

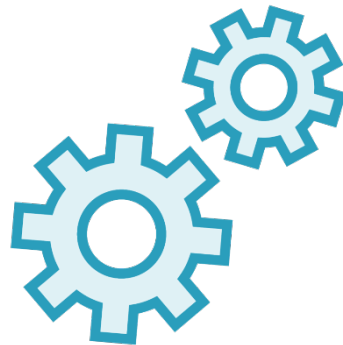
HTTP Response

A message that is sent back by the endpoint containing the data requested



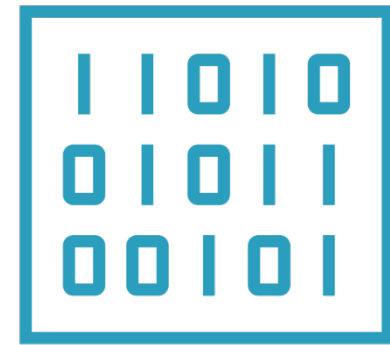
Status Code

Number indicating if the request was successful or not



Content Type

The type of data to be returned by the endpoint



Response Body

Payload / data being returned to be processed by the client

Common Response Status Codes

200

The call was successful!

404

Resource not found or
request unauthorized

500

Some error happened
when the server
processed the request

Common Response Content Types

text/html

Returns data as an HTML document

application/json

Expected data is in the form of JSON

Demo



Accessing a Web Service with a Browser

Making a Request with Ruby

net/http library

Build URI

Invoke a Get Request

Process Response

Programmatic Request /
Response

```
[  
  {  
    "quote": "The universe is Random. Not Inevitable. It's simple chaos.",  
    "author": "Walter White"  
  }  
]
```

<https://breaking-bad-quotes.herokuapp.com/v1/quotes>

Expect an array of JSON objects

```
require 'net/http'

require 'json'

endpoint = "https://breaking-bad-quotes.herokuapp.com/v1/quotes"

uri = URI(endpoint)

content = Net::Http.get(uri)

quotes = JSON.parse(content)

puts quotes[0]["quote"]

puts "By: #{quotes[0]["author"]}"
```

- ◀ Require the net/http and json libraries
- ◀ Define the endpoint
- ◀ Create a URI from the endpoint
- ◀ Make a GET request
- ◀ Parse the expected result to a hash
- ◀ Display the values


```
require 'net/http'

require 'json'

endpoint = "https://breaking-bad-quotes.herokuapp.com/v1/quotes"

uri = URI(endpoint)

res = Net::Http.get_response(uri)

puts res.code

puts res.content_type

puts res.body
```

- ◀ Require the net/http and json libraries
- ◀ Define the endpoint
- ◀ Create a URI from the endpoint
- ◀ Make a GET request but return response
- ◀ Display the code, content type and body from the response object

Demo



Archiving BTC Prices

Summary



Application Interaction w/ Web Services

JSON as Medium

Start Integrating!