



.NET Core Web APIs.

Class 1 - Introduction to REST with
ASP.NET Core WebAPI



Who's this weird guy?



ANGEL GARCIA

Cloud and Mobile Developer @hMobile

 @_AngelGarcia13

- INTRODUCTION TO HTTP.
- WHAT IS REST?
- APIS, RESTFUL, WEB SERVICE, SOAP .. WHAT DA FUCK IS GOING ON, IS NOT THE SAME?
- STATUS CODES.
- ACTIONS (VERBS).
- USING QUERY STRINGS.
- MODEL BINDING AND VALIDATIONS.

Class 1

HTTP

HTTP stands for Hyper Text Transfer Protocol.

WWW is about communication between web clients and servers.

Communication between client computers and web servers is done by sending HTTP Requests and receiving HTTP Responses.

```

method    URI    http version
POST /create-user HTTP/1.1

Host: localhost:3000
Connection: keep-alive
Content-type: application/json

{ "name": "John", "age: 35 }

```

header

body

WHAT IS REST?

REST stands for REpresentational State Transfer, is an architecture style for network based apps.

- Introduced by Roy Fielding in 2000.
- Relies on client-server protocol (most of cases HTTP).
- Treats server objects as resources that can be manipulated.
- Stateless.
- Can be used by any language able to make HTTP requests.
- Negotiate content type via headers.
- Responds with HTTP status codes.

APIS, RESTFUL, WEB SERVICE, SOAP ... WHAT DA FUCK IS GOING ON, IS NOT THE SAME?

Web Services

Web service is a software application with a standardized way of providing interoperability between disparate applications.

- SOAP (Simple Object Access Protocol)
- REST (Representational State Transfer)

API

Application Program Interface, in general is a contract provided by one piece of software to another piece of software (structured request and response).

RESTful API

A RESTful API is a web service implemented using HTTP and the principles of REST. Perform operations through GET, POST, PUT or DELETE requests and use URIs (or endpoints) to identify the resource we want to manipulate.

STATUS CODES

1xx – an informational message only.

2xx – success of some kind.

- 200 OK
- 201 Created

3xx – the client to another URL.

- 301 Moved Permanently
- 304 Not Modified

4xx – an error on the client's part.

- 400 Bad Request
- 401 Unauthorized
- 403 Forbidden
- 404 Not Found
- 410 Gone

5xx – an error on the server's part.

- 500 Internal Server Error

HTTP status ranges in a nutshell:

1xx: hold on

2xx: here you go

3xx: go away

4xx: you fucked up

5xx: I fucked up

-via @abt_programming

Other nice way to see HTTP Codes: <https://http.cat>



ACTIONS (VERBS)

HTTP Verb	CRUD	Entire Collection (e.g. /customers)	Specific Item (e.g. /customers/{id})
POST	Create	201 (Created), 'Location' header with link to /customers/{id} containing new ID.	405 (Method Not Allowed)
GET	Read	200 (OK), list of customers. Use pagination, sorting and filtering to navigate big lists.	200 (OK), single customer. 404 (Not Found), if ID not found or invalid.
PUT	Update/Replace	405 (Method Not Allowed), unless you want to update/replace every resource in the entire collection.	200 (OK) or 204 (No Content). 404 (Not Found), if ID not found or invalid.
PATCH	Update/Modify	405 (Method Not Allowed), unless you want to modify the collection itself.	200 (OK) or 204 (No Content). 404 (Not Found), if ID not found or invalid.
DELETE	Delete	405 (Method Not Allowed), unless you want to delete the whole collection—not often desirable.	200 (OK). 404 (Not Found), if ID not found or invalid.

Not commonly used: OPTIONS, HEAD, CONNECT, TRACE.