Writing Beautiful RESTful APIs

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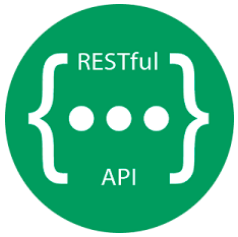

All About REST – Part 1

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- What is REST?
- How does it happen?
- Parts of a RESTful request
- Parts of a RESTful response

What is REST?

- Representational state transfer (REST) or RESTful web services are a way of communicating across computer systems on the internet
- They use a predefined set of operations that allow for access and manipulation of representations of resources
- Operations like accessing my account, placing an order, un-registering my email, or enrolling in a rewards program may all be facilitated through a RESTful API

How does it happen?

1) Request is made from a client
2) Request is received by a server
3) Server processes the request and returns a resource
4) Client receives resources

- This resource can be access to a system, a file, a message, or even a hyperlink
- The resource that is delivered to the client is defined by the implementation of the RESTful service
- If the request sent by the client does not conform to the standard that the server is expecting, it may throw an error

Parts of a RESTful request

1) Operation: This is the type of operation we are performing. The most common operations are GET, POST, PUT, PATCH, and DELETE. There are several, less commonly used operations as well though
2) Resource (URL): This is the location of the requested resource. Something like https://www.mysweetapi.com/api/v1/orders where "orders" is my resource
3) Resource Parameters (Query Parameters): This allows additional information to be included into a resource URL where it may not conveniently fit into a logical structure. This may be seen in the following forms:

   https://www.mysweetapi.com/api/v1/orders/123
   https://www.mysweetapi.com/api/v1/orders?orderId=123

These can also be used as a way to filter or make a sub-selection on a particular resource

Parts of a RESTful request (cont.)

4) Headers: These are operating parameters or rules of the request. These can define the type of data that is received, the amount of data to receive, the language the data is returned as, or even an authorization for a specific user that will allow access to the resource

5) Body (Payload): This is the content or message that you want to send with your request

Parts of a RESTful response

1) Response Code (Status Code): This is the code provided by the service that lets the client know the status of the operation. Some of the most common response codes are: 200 (OK), 404 (Not Found), and 500 (Internal Server Error). A full list can be found here:

http://www.restapitutorial.com/httpstatuscodes.html

2) Body (Payload): This is the content or message the service is sending back to the client. It may be empty in some cases, but will often mirror the response code. A successful request will likely have a message indicating success or access to the resource, while an unsuccessful request will likely have an error.

Parts of a RESTful response (cont.)

3) Headers: These are pieces of information from the server that define certain qualities about the particular service or resource. This may detail the time the request was placed, the type of server, the type of content that is expected, and the length of the content that is returned.

4) Cookies: These typically contain information about session or access authorization. Ideally, cookies should not be used as it creates an inconvenience for clients.