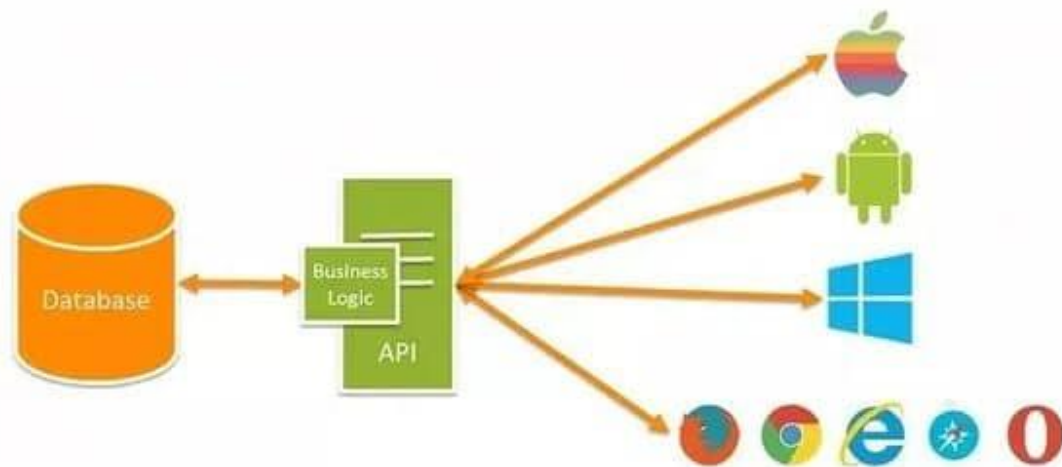# Rest API
Fundamentals

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API Concept

➡ API means Application Programming Interface and, like any other interface, allows interactions. In the case of an API, it allows interactions between systems by following a set of standards and protocols in order to share features, information and data.

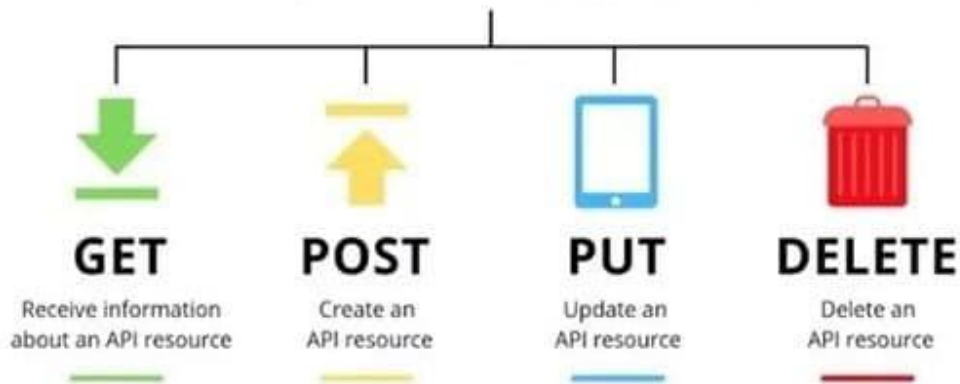@rehman_coding

REST Fundamentals

Fundamentals of REST API

➡️ REST is an architecture style to develop web services, which uses the HTTP protocol as a communication interface in order to transfer data through HTTP methods.

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REST API Methods

GET — Receive information about an API resource

POST — Create an API resource

PUT — Update an API resource

DELETE — Delete an API resource

Http Status Codes

With every request made to the server, we get
Response Code/Http Status Codes in return

2xx: Success

3xx: Redirection

4xx: Problem with the client

5xx: Problem with the server

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Path Parameter

It is a variable in URI path that helps in pointing towards specific resource
Example:
https://food.com/restaurant/1/total-orders
1 is the path Parameter (variable) which points to restaurant no l's total orders

Query Parameter

It is variable in URI path that helps in querying/ filtering through a list of resources

Request Anatomy

URL

➡ URL means Uniform Resource Locator, which is the address to not just identify a resource, but also to specify how to access it. In an API, the URL can be named as Base URL, which means that is the base address that will be used in every request.
For example: http://api.example.com

URI

➡ URI means Uniform Resource Identifier, which is used in the URL to specify which resource the Client would like to access in a request.

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URI Example

➡ http://api.example.com/products
URL: http:/llapi.example.com/
UR:/products
Therefore, every URL is an URI, but not all URIs are URLs.

Parameters

➡ Parameters are information that can be sended in a request by the Client in order to influence the response by the Server.
Two types of parameters:
. Path Parameter
. Query Parameter

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Example:

http://api.example.com/products?
name=laptop&available=true
we query using ? in URI, followed by item
which we want to search. Here the Client
communicates to the Server that the
request is to retrieve products with name
equals laptop, and available equals true.

Body Params

It's the body of the request which contains
all the data that the Server needs to
successfully process the request. Therefore,
it's only used in requests that must send
information, such as create or update.

Body Params Example

```
{
    "name": "Laptop",
    "price": 1000
    "available": true
}
```

Headers

Headers allows sending extra information in a request, such as authentication tokens and content types.

```
Authorization: Bearer token
Accept: application/json
```

In this given example, the Client is sending extra data informing not just it's credentials to access a resource, but also a desired response format.