

# Networking in android

The action or process of interacting with others to exchange information

- Http Methods
- REST API
- Retrofit library
- URL Endpoints
- Open Weather Api

# What is HTTP

Http Stands for Hypertext Transfer Protocol.

**HTTP** (Hypertext Transfer Protocol) is the set of rules for transferring files, such as text, graphic images, sound, video, and other multimedia files

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

## **Types of HTTP requests:**

- GET
- POST
- PUT
- DELETE
- HEAD
- CONNECT
- OPTIONS
- TRACE

## **HTTP response code:**

- 200 OK
- 202 Accepted
- 404 Not Found

# REST API

API stands for Application Programming Interface, which is a software that allows two applications to talk to each other. Each time you use an app like Facebook, send an instant message, or check the weather on your phone, you're using an API.

REST stands for **RE**presentational **S**tate **T**ransfer

It means when a RESTful API is called, the server will *transfer* to the client a *representation* of the *state* of the requested resource

# Url and Url pattern

- Base Url
- End Points
- Query

Base url : `api.openweathermap.org`

End point : `/data/2.5/weather`

Query : `?zip={zip code},{country code}`

Complete url : `api.openweathermap.org/data/2.5/weather?zip={zip code},{country code}`

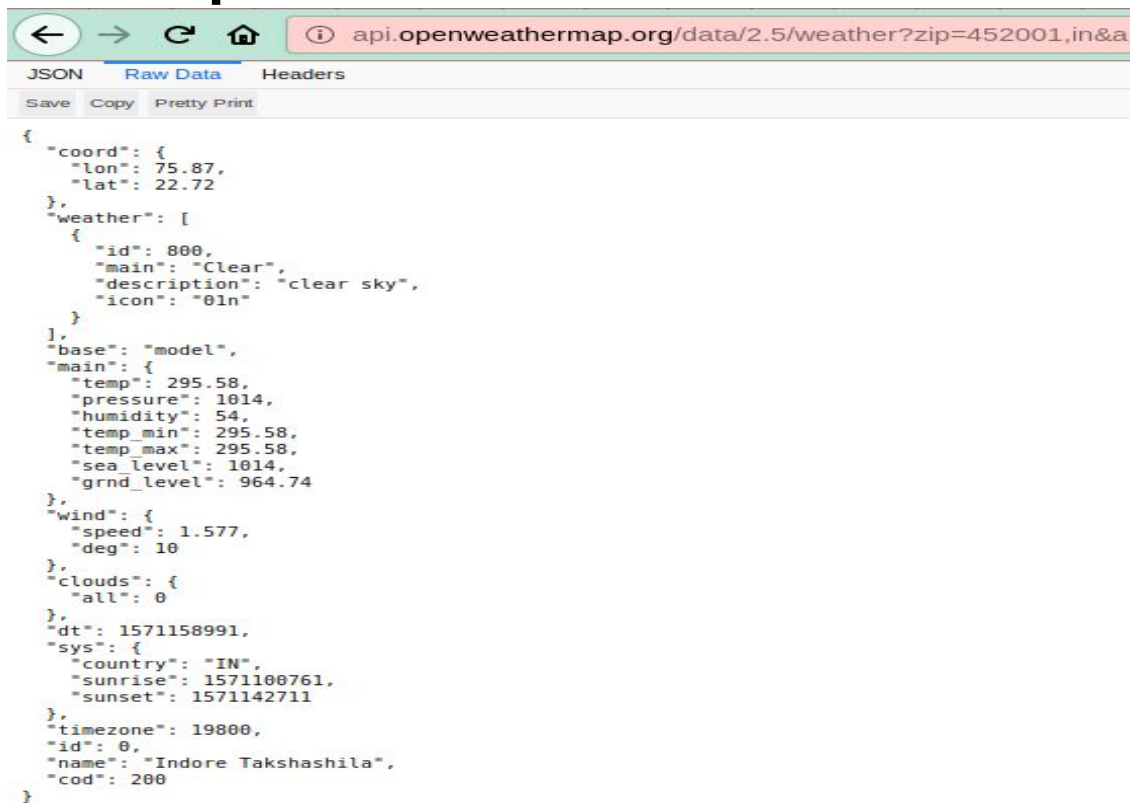
# Retrofit

Retrofit is a REST Client for Java and Android. It makes it relatively easy to retrieve and upload JSON (or other structured data) via a REST based web service.

**GSON:** Gson is a Java library that can be used to convert Java Objects into their JSON representation. It can also be used to convert a JSON string to an equivalent Java object

**OkHTTP:** OkHTTP is an open source project designed to be an efficient HTTP client.

# Open Weather API



```
{
  "coord": {
    "lon": 75.87,
    "lat": 22.72
  },
  "weather": [
    {
      "id": 800,
      "main": "Clear",
      "description": "clear sky",
      "icon": "01n"
    }
  ],
  "base": "model",
  "main": {
    "temp": 295.58,
    "pressure": 1014,
    "humidity": 54,
    "temp_min": 295.58,
    "temp_max": 295.58,
    "sea_level": 1014,
    "grnd_level": 964.74
  },
  "wind": {
    "speed": 1.577,
    "deg": 10
  },
  "clouds": {
    "all": 0
  },
  "dt": 1571158991,
  "sys": {
    "country": "IN",
    "sunrise": 1571100761,
    "sunset": 1571142711
  },
  "timezone": 19800,
  "id": 0,
  "name": "Indore Takshashila",
  "cod": 200
}
```

<http://api.openweathermap.org/data/2.5/weather?zip=452001,in&appid=5753db64c667d9ed89962813328c19be>

<https://github.com/mdg-iitr/Weather-App>

<https://openweathermap.org>

<https://openweathermap.org/current>

<https://square.github.io/retrofit/>

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