**Open Weather Map:**

Call current weather data:

https://openweathermap.org/current

How to make an API call:

https://api.openweathermap.org/data/2.5/weather?lat={lat}&lon={lon}&appid={API key}

eg: https://api.openweathermap.org/data/2.5/weather?lat=44.34&lon=10.99&appid={API key}

**JSON format API response example:**

{

"coord": {

"lon": 7.367,

"lat": 45.133

},

"weather": [

{

"id": 501,

"main": "Rain",

"description": "moderate rain",

"icon": "10d"

}

],

"base": "stations",

"main": {

"temp": 284.2,

"feels\_like": 282.93,

"temp\_min": 283.06,

"temp\_max": 286.82,

"pressure": 1021,

"humidity": 60,

"sea\_level": 1021,

"grnd\_level": 910

},

"visibility": 10000,

"wind": {

"speed": 4.09,

"deg": 121,

"gust": 3.47

},

"rain": {

"1h": 2.73

},

"clouds": {

"all": 83

},

"dt": 1726660758,

"sys": {

"type": 1,

"id": 6736,

"country": "IT",

"sunrise": 1726636384,

"sunset": 1726680975

},

"timezone": 7200,

"id": 3165523,

"name": "Province of Turin",

"cod": 200

}

**XML format API response example:**

<current>

<city id="3163858" name="Zocca">

<coord lon="10.99" lat="44.34"/>

<country>IT</country>

<timezone>7200</timezone>

<sun rise="2022-08-30T04:36:27" set="2022-08-30T17:57:28"/>

</city>

<temperature value="298.48" min="297.56" max="300.05" unit="kelvin"/>

<feels\_like value="298.74" unit="kelvin"/>

<humidity value="64" unit="%"/>

<pressure value="1015" unit="hPa"/>

<wind>

<speed value="0.62" unit="m/s" name="Calm"/>

<gusts value="1.18"/>

<direction value="349" code="N" name="North"/>

</wind>

<clouds value="100" name="overcast clouds"/>

<visibility value="10000"/>

<precipitation value="3.37" mode="rain" unit="1h"/>

<weather number="501" value="moderate rain" icon="10d"/>

<lastupdate value="2022-08-30T14:45:57"/>

</current>

**Google Map (Geocoding API):**

<https://developers.google.com/maps/documentation/geocoding/overview>

Geocoding request and response:

[https://developers.google.com/maps/documentation/geocoding/requests-geocoding?\_gl=1\*rjoplv\*\_up\*MQ..\*\_ga\*ODg5MjY5NjguMTcyNzc0NjIzNQ..\*\_ga\_NRWSTWS78N\*MTcyNzc0NjIzNC4xLjAuMTcyNzc0NjIzNC4wLjAuMA..#GeocodingResponses](https://developers.google.com/maps/documentation/geocoding/requests-geocoding?_gl=1*rjoplv*_up*MQ..*_ga*ODg5MjY5NjguMTcyNzc0NjIzNQ..*_ga_NRWSTWS78N*MTcyNzc0NjIzNC4xLjAuMTcyNzc0NjIzNC4wLjAuMA..#GeocodingResponses)

A Geocoding API request takes the following form:

https://maps.googleapis.com/maps/api/geocode/*outputFormat*?*parameters*

response:

Geocoding responses are returned in the format indicated by the output flag within the URL request, or in JSON format by default.

In this example, the Geocoding API requests a json response for a query on the address "1600 Amphitheatre Parkway, Mountain View, CA".

This request demonstrates using the JSON output flag:

<https://maps.googleapis.com/maps/api/geocode/json?address=1600+Amphitheatre+Parkway,+Mountain+View,+CA&key=YOUR_API_KEY>

The sample JSON responses:

{

"results": [

{

"address\_components": [

{

"long\_name": "1600",

"short\_name": "1600",

"types": [

"street\_number"

]

},

{

"long\_name": "Amphitheatre Parkway",

"short\_name": "Amphitheatre Pkwy",

"types": [

"route"

]

},

{

"long\_name": "Mountain View",

"short\_name": "Mountain View",

"types": [

"locality",

"political"

]

},

{

"long\_name": "Santa Clara County",

"short\_name": "Santa Clara County",

"types": [

"administrative\_area\_level\_2",

"political"

]

},

{

"long\_name": "California",

"short\_name": "CA",

"types": [

"administrative\_area\_level\_1",

"political"

]

},

{

"long\_name": "United States",

"short\_name": "US",

"types": [

"country",

"political"

]

},

{

"long\_name": "94043",

"short\_name": "94043",

"types": [

"postal\_code"

]

},

{

"long\_name": "1351",

"short\_name": "1351",

"types": [

"postal\_code\_suffix"

]

}

],

"formatted\_address": "1600 Amphitheatre Pkwy, Mountain View, CA 94043, USA",

"geometry": {

"location": {

"lat": 37.4222804,

"lng": -122.0843428

},

"location\_type": "ROOFTOP",

"viewport": {

"northeast": {

"lat": 37.4237349802915,

"lng": -122.083183169709

},

"southwest": {

"lat": 37.4210370197085,

"lng": -122.085881130292

}

}

},

"place\_id": "ChIJRxcAvRO7j4AR6hm6tys8yA8",

"plus\_code": {

"compound\_code": "CWC8+W7 Mountain View, CA",

"global\_code": "849VCWC8+W7"

},

"types": [

"street\_address"

]

}

],

"status": "OK"

}

This request demonstrates using the XML output flag:

<https://maps.googleapis.com/maps/api/geocode/xml?address=1600+Amphitheatre+Parkway,+Mountain+View,+CA&key=YOUR_API_KEY>

The sample XML responses:

<GeocodeResponse>

<status>OK</status>

<result>

<type>street\_address</type>

<formatted\_address>1600 Amphitheatre Pkwy, Mountain View, CA 94043, USA</formatted\_address>

<address\_component>

<long\_name>1600</long\_name>

<short\_name>1600</short\_name>

<type>street\_number</type>

</address\_component>

<address\_component>

<long\_name>Amphitheatre Parkway</long\_name>

<short\_name>Amphitheatre Pkwy</short\_name>

<type>route</type>

</address\_component>

<address\_component>

<long\_name>Mountain View</long\_name>

<short\_name>Mountain View</short\_name>

<type>locality</type>

<type>political</type>

</address\_component>

<address\_component>

<long\_name>Santa Clara County</long\_name>

<short\_name>Santa Clara County</short\_name>

<type>administrative\_area\_level\_2</type>

<type>political</type>

</address\_component>

<address\_component>

<long\_name>California</long\_name>

<short\_name>CA</short\_name>

<type>administrative\_area\_level\_1</type>

<type>political</type>

</address\_component>

<address\_component>

<long\_name>United States</long\_name>

<short\_name>US</short\_name>

<type>country</type>

<type>political</type>

</address\_component>

<address\_component>

<long\_name>94043</long\_name>

<short\_name>94043</short\_name>

<type>postal\_code</type>

</address\_component>

<geometry>

<location>

<lat>37.4224428</lat>

<lng>-122.0842467</lng>

</location>

<location\_type>ROOFTOP</location\_type>

<viewport>

<southwest>

<lat>37.4212648</lat>

<lng>-122.0856069</lng>

</southwest>

<northeast>

<lat>37.4239628</lat>

<lng>-122.0829089</lng>

</northeast>

</viewport>

</geometry>

<place\_id>ChIJeRpOeF67j4AR9ydy\_PIzPuM</place\_id>

<plus\_code>

<global\_code>849VCWC8+X8</global\_code>

<compound\_code>CWC8+X8 Mountain View, CA</compound\_code>

</plus\_code>

</result>

</GeocodeResponse>

**Processing XML with XPath:**

https://developers.google.com/maps/documentation/geocoding/web-service-best-practices?\_gl=1\*pu9vqs\*\_up\*MQ..\*\_ga\*ODg5MjY5NjguMTcyNzc0NjIzNQ..\*\_ga\_NRWSTWS78N\*MTcyNzc0NjIzNC4xLjAuMTcyNzc0NjIzNC4wLjAuMA..#ParsingXML