REST Countries API

In the earthquake system, tmpst uses an API to fetch the details of a country depending on the country code. The API used to fetch this data is REST countries which is an API that offers open data without the use of keys or other forms of authorisation. REST countries provides information such as a country's flag, languages and currencies among other data.

An example response from the REST countries API website is displayed below:


```
[{
    "name": "Colombia",
    "topLevelDomain": [".co"],
    "alpha2Code": "CO",
    "alpha3Code": "COL",
    "callingCodes": ["57"],
    "capital": "Bogotá",
    "altSpellings": ["CO", "Republic of Colombia", "República de Colombia"],
    "region": "Americas",
    "subregion": "South America",
    "population": 48759958,
    "latlng": [4.0, -72.0],
    "demonym": "Colombian",
    "area": 1141748.0,
    "gini": 55.9,
    "timezones": ["UTC-05:00"],
    "borders": ["BRA", "ECU", "PAN", "PER", "VEN"],
    "nativeName": "Colombia",
    "numericCode": "170",
    "currencies": [{
        "code": "COP",
        "name": "Colombian peso",
        "symbol": "$"
    }],
    "languages": [{
        "iso639_1": "es",
        "iso639_2": "spa",
        "name": "Spanish",
        "nativeName": "Español"
    }],
    "translations": {
        "de": "Kolumbien",
        "es": "Colombia",
        "fr": "Colombie",
        "ja": "コロンビア",
```

```
        "it": "Colombia",
        "br": "Colômbia",
        "pt": "Colômbia"
    },
    "flag": "https://restcountries.eu/data/col.svg",
    "regionalBlocs": [{
        "acronym": "PA",
        "name": "Pacific Alliance",
        "otherAcronyms": [],
        "otherNames": ["Alianza del Pacífico"]
    }, {
        "acronym": "USAN",
        "name": "Union of South American Nations",
        "otherAcronyms": ["UNASUR", "UNASUL", "UZAN"],
        "otherNames": ["Unión de Naciones Suramericanas", "União de Nações
Sul-Americanas", "Unie van Zuid-Amerikaanse Naties", "South American Union"]
    }],
    "cioc": "COL"
}]
```


In this tutorial:

Pre-requisites:

- Understanding of JSON format
- A valid country code to query the system
- A suitable method for making a request (Postman: https://www.getpostman.com/downloads/ or in new tab)

Aims:

- Learn how to request data from the REST Countries API in Postman
- Learn how to request data from the REST Countries API in a new tab
- Learn how to request data from the REST Countries API using AJAX call

Postman Tutorial

In this tutorial, we will create a request to the REST Countries API using the postman application on Windows. Before proceeding with this tutorial, please ensure you have access to the Postman application or are using the online version.

Steps:

1. Construct request in Postman

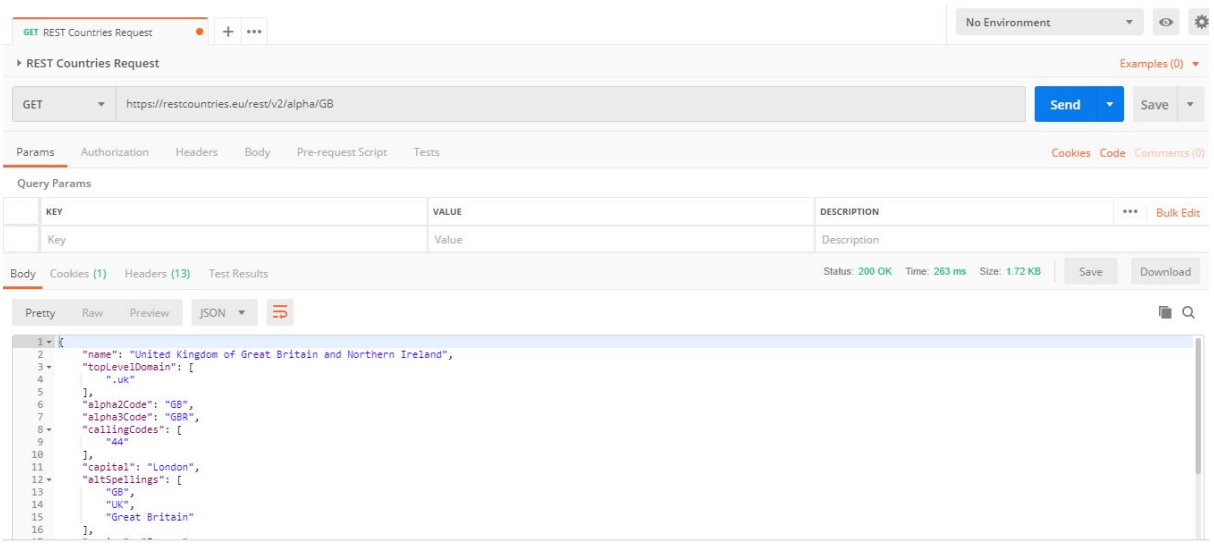
Step 1: Construct request in Postman

This tutorial assumes that you have a basic understanding of how to use Postman. If not, we provide a tutorial on how to utilise Postman properly that you may wish to read before you continue with this tutorial. If you know how to use Postman, create a new GET request and give it an appropriate name. The name I will use in this tutorial is “REST Countries Request”. If you have setup the request properly you should see the following:

Nothing will happen if you attempt to send the request as the url box is empty. We need to add the base url (https://restcountries.eu/rest/v2/alpha/) appended with the chosen country code. For this example I will be using the United Kingdom (GB) which means that my final url looks like:

https://restcountries.eu/rest/v2/alpha/GB

If you add this url to the url box and hit send you should see the following:



The full response in plain text is shown below:


```
{
    "name": "United Kingdom of Great Britain and Northern Ireland",
    "topLevelDomain": [
        ".uk"
    ],
    "alpha2Code": "GB",
    "alpha3Code": "GBR",
    "callingCodes": [
        "44"
    ],
    "capital": "London",
    "altSpellings": [
        "GB",
        "UK",
        "Great Britain"
    ],
    "region": "Europe",
    "subregion": "Northern Europe",
    "population": 65110000,
    "latlng": [
        54,
        -2
    ],
    "demonym": "British",
    "area": 242900,
    "gini": 34,
    "timezones": [
        "UTC-08:00",
        "UTC-05:00",
```

```
    "UTC-04:00",
    "UTC-03:00",
    "UTC-02:00",
    "UTC",
    "UTC+01:00",
    "UTC+02:00",
    "UTC+06:00"
],
"borders": [
    "IRL"
],
"nativeName": "United Kingdom",
"numericCode": "826",
"currencies": [
    {
        "code": "GBP",
        "name": "British pound",
        "symbol": "£"
    }
],
"languages": [
    {
        "iso639_1": "en",
        "iso639_2": "eng",
        "name": "English",
        "nativeName": "English"
    }
],
"translations": {
    "de": "Vereinigtes Königreich",
    "es": "Reino Unido",
    "fr": "Royaume-Uni",
    "ja": "イギリス",
    "it": "Regno Unito",
    "br": "Reino Unido",
    "pt": "Reino Unido",
    "nl": "Verenigd Koninkrijk",
    "hr": "Ujedinjeno Kraljevstvo",
    "fa": "بریتانیای کبیر و ایرلند شمالی"
},
"flag": "https://restcountries.eu/data/gbr.svg",
"regionalBlocs": [
    {
        "acronym": "EU",
        "name": "European Union",
        "otherAcronyms": [],
```

```
        "otherNames": []
      }
    ],
    "cioc": "GBR"
}
```


Browser Request Tutorial

In this tutorial, we will create a request to the REST countries API using a new tab on a Google Chrome browser. For this tutorial, we will use the same endpoint as is used in the Postman example:

https://restcountries.eu/rest/v2/alpha/GB

Step 1: Add url to tab and run

This tutorial is easier than either the Postman method or the AJAX method (still to come) as it only involves using a tab in a browser as if you are navigating to a web page. To get a result, add the url to the address bar and hit enter and you should see the following:


```
{"name":"United Kingdom of Great Britain and Northern Ireland","topLevelDomain":[".uk"],"alpha2Code":"GB","alpha3Code":"GBR","callingCodes":["44"],"capital":"London","altSpellings":
["GB","UK","Great Britain"],"region":"Europe","subregion":"Northern Europe","population":65110000,"latlng":[54.0,-2.0],"demonym":"British","area":242900.0,"gini":34.0,"timezones":["UTC-
08:00","UTC-05:00","UTC-04:00","UTC-03:00","UTC-02:00","UTC","UTC+01:00","UTC+02:00","UTC+06:00"],"borders":["IRL"],"nativeName":"United Kingdom","numericCode":"826","currencies":
[{"code":"GBP","name":"British pound","symbol":"£"}],"languages":[{"iso639_1":"en","iso639_2":"eng","name":"English","nativeName":"English"}],"translations":{"de":"Vereinigtes
Königreich","es":"Reino Unido","fr":"Royaume-Uni","ja":"イギリス","it":"Regno Unito","br":"Reino Unido","pt":"Reino Unido","nl":"Verenigd Koninkrijk","hr":"Ujedinjeno
Kraljevstvo","fa":"بریتانیای کبیر و ایرلند شمالی"},"flag":"https://restcountries.eu/data/gbr.svg","regionalBlocs":[{"acronym":"EU","name":"European Union","otherAcronyms":[],"otherNames":
[]}],"cioc":"GBR"}
```


The result is shown in plain text below:


```
{
    "name": "United Kingdom of Great Britain and Northern Ireland",
    "topLevelDomain": [
        ".uk"
    ],
    "alpha2Code": "GB",
    "alpha3Code": "GBR",
    "callingCodes": [
        "44"
    ],
    "capital": "London",
    "altSpellings": [
        "GB",
        "UK",
        "Great Britain"
    ],
    "region": "Europe",
    "subregion": "Northern Europe",
```

```
"population": 65110000,
"latlng": [
    54,
    -2
],
"demonym": "British",
"area": 242900,
"gini": 34,
"timezones": [
    "UTC-08:00",
    "UTC-05:00",
    "UTC-04:00",
    "UTC-03:00",
    "UTC-02:00",
    "UTC",
    "UTC+01:00",
    "UTC+02:00",
    "UTC+06:00"
],
"borders": [
    "IRL"
],
"nativeName": "United Kingdom",
"numericCode": "826",
"currencies": [
    {
        "code": "GBP",
        "name": "British pound",
        "symbol": "£"
    }
],
"languages": [
    {
        "iso639_1": "en",
        "iso639_2": "eng",
        "name": "English",
        "nativeName": "English"
    }
],
"translations": {
    "de": "Vereinigtes Königreich",
    "es": "Reino Unido",
    "fr": "Royaume-Uni",
    "ja": "イギリス",
    "it": "Regno Unito",
    "br": "Reino Unido",
```

```
      "pt": "Reino Unido",
      "nl": "Verenigd Koninkrijk",
      "hr": "Ujedinjeno Kraljevstvo",
      "fa": "بریتانیای کبیر و ایرلند شمالی"
   },
   "flag": "https://restcountries.eu/data/gbr.svg",
   "regionalBlocs": [
      {
         "acronym": "EU",
         "name": "European Union",
         "otherAcronyms": [],
         "otherNames": []
      }
   ],
   "cioc": "GBR"
}
```


AJAX Tutorial

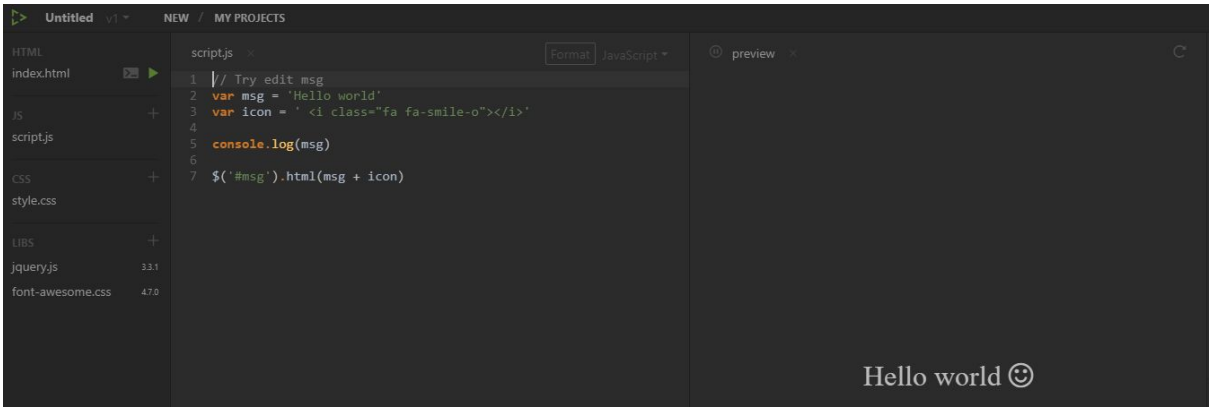
The above methods show you how to access the REST Countries API and view the data, however, neither method involves any coding and neither would work well in an application's context. So, in this tutorial we will connect to the monthly feed using AJAX which can then be put into the javascript of any application.

Steps:

1. Create a new playcode project
2. Add the provided AJAX code and run

Step 1: Create a new playcode project

For this tutorial, playcode will be used to demonstrate the AJAX request. Although we are using playcode, almost any online JavaScript IDE would work (JsFiddle). If you search for playcode and click on the link you should see the following default project setup:

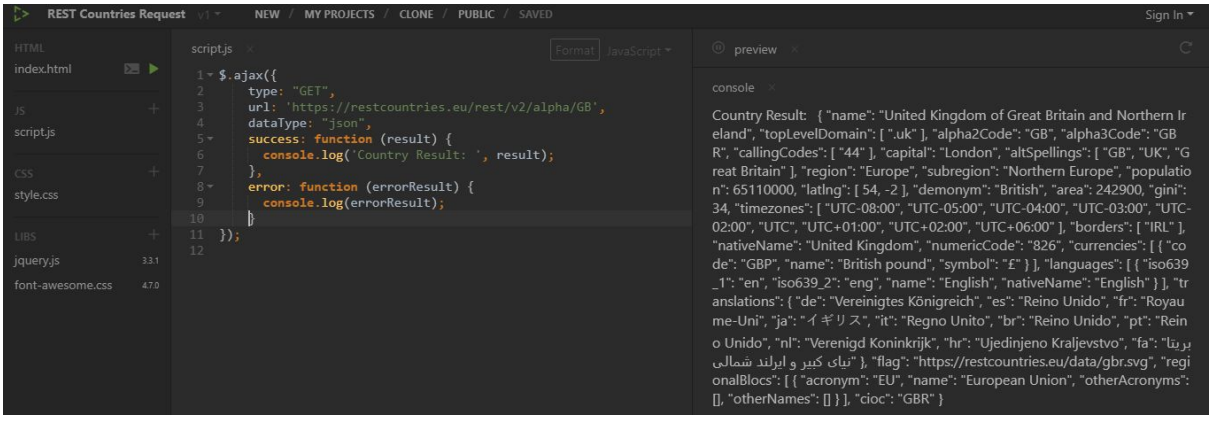


Playcode is ideal for this tutorial as we only need to change the js file and view the console as jquery is referenced as standard

Step 2: Add the provided AJAX code and run
The AJAX required to fetch the data programatically is:

```
$.ajax({
    type: "GET",
    url: 'https://restcountries.eu/rest/v2/alpha/GB',
    dataType: "json",
    success: function (result) {
      console.log('Country Result: ', result);
    },
    error: function (errorResult) {
      console.log(errorResult);
    }
});
```

If you replace the contents of script.js with the above AJAX and run the code, you should see the following:



As you can see this result looks similar to the other results we have seen earlier in the project, however, this code can be added to an application and the data can be fetched and altered dynamically.

Conclusion
That is the methods which can be used to request data from the REST Countries API. The most useful of the methods is AJAX, however, the others can be used for testing and ensuring the quality of the data

Common Issues:
Normally, implementing the methods discussed in this tutorial are relatively easy, however, some of the most common issues are detailed below:

- Using invalid country code - The API endpoint requires a country code to fetch data successfully and therefore using an incorrect country code will cause the API to crash

Outcomes
You should now be able to:
- Request data from the REST Countries API in Postman
- Request data from the REST Countries API in a new tab
- Request data from the REST Countries API using AJAX call

References
Although we hope this tutorial has been all the help you need, here are some useful links that may be of use:

Useful Resources:
- REST Countries API - https://restcountries.eu/#api-endpoints-code
- Functional playcode AJAX request - https://playcode.io/269259?tabs=console&script.js&output

Tools:
- Postman - https://www.getpostman.com/downloads/
- Playcode - https://playcode.io/