

SI206
Discussion 10
APIs

Objective

- The purpose of today's section is to get familiar with API and JSON. You will:
 - Create an API request
 - Get familiar with a browser-based JSON viewer
 - Analyze nested data
 - Do plenty of debugging

JSON Editor Online : <https://jsoneditoronline.org>

It's super helpful to see the structure in a readable format that you can manipulate

Opening the JSON file in VSCode might help, too!

The screenshot displays the JSON Editor Online interface. The top bar includes the title "JSON Editor Online" and navigation buttons: "New", "Open", "Save", "Settings", and "Help". The main editor area is split into two panels. The left panel, labeled "powered by ace", shows the raw JSON text. The right panel shows a tree view of the JSON structure.

JSON Text (Left Panel):

```
1 [{"response_code":0,"results":[{"category":  
  "Science & Nature","type":"boolean"  
  ,"difficulty":"medium","question"  
  :"Hippopotomonstrosesquippedaliophobia  
  is the irrational fear of long words."  
  ,"correct_answer":"True"  
  ,"incorrect_answers":["False"]}]  
  ,{"category":"Science & Nature","type"  
  :"boolean","difficulty":"hard"  
  ,"question":"Scientists can grow teeth  
  from urine.","correct_answer":"True"  
  ,"incorrect_answers":["False"]}]]}]
```

JSON Structure (Right Panel):

- object ▶ results ▶ 1 ▶
 - object {2}
 - response_code : 0
 - results [2]
 - 0 {6}
 - category : Science & Nature
 - type : boolean
 - difficulty : medium
 - question : Hippopotomonstrosesquippedaliophobia is the irrational fear of long words.
 - correct_answer : True
 - incorrect_answers [1]

Today's Task (more detail in starter code)

Use the World Bank API and get gdp for different countries

Demo:

Write a function `get_gdp(country_code, date)` that takes a country code (e.g. USA, BRA) and a date in years (e.g. 2017) that returns the value as an integer.

TASK 1:

Write a function `get_data(country_code, first_year, second_year)` that takes a country code (e.g. USA, BRA) and two consecutive years (e.g. 2004 and 2005) that returns the data from the API after converting it to a python list.

TASK 2:

Write a function `gdp_growth(country_code, first_year, second_year)` that calls `get_data(country_code, first_year, second_year)` and returns the GDP growth of the country for the two years in a tuple.

DEMO

Walking through how to solve get_gdp()

1. Craft URL

- a. <http://api.worldbank.org/v2/country/USA/indicator/NY.GDP.MKTP.CD?format=json&date=2020>

2. Retrieve JSON

3. Parse JSON

- a. <https://jsoneditoronline.org/>

4. Return desired value

How to go about TASK 1?

1. Read documentation for World Bank API

<https://datahelpdesk.worldbank.org/knowledgebase/articles/898581>

2. What is the base URL of the World Bank API?

3. What is the code for population information? (Scroll to "Featured Indicators" on the page below)

<http://datatopics.worldbank.org/world-development-indicators/themes/people.html>

4. How should the parameters (gdp, country, and year) be combined with the base URL?