API - The World Bank

Functionality description

Marian Petruk

April 7 2017

> "Data is a precious thing and will last longer than the systems themselves."
>
> *Tim Berners-Lee*

Contents

1 Definition(s)

1.1 API

1. *an **Application Programming Interface (API)** is a set of subroutine definitions, protocols, and tools for building application software.* - Wikipedia, the free encyclopedia.

2. ***API** stands for Application Programming Interface. An API is a software intermediary that allows two applications to talk to each other. In other words, an API is the messenger that delivers your request to the provider that you're requesting it from and then delivers the response back to you.* -MuleSoft Blog

1.2 The World Bank

1. ***The World Bank** is an international financial institution that provides loans to countries of the world for capital programs. ... The World Bank's stated official goal is the reduction of poverty.* -Wikipedia, the free encyclopedia.

2. ***The World Bank Group** is one of the world's largest sources of funding and knowledge for developing countries. Its five institutions share a commitment to reducing poverty, increasing shared prosperity, and promoting sustainable development.* -The World Bank

2 Chosen API

wbpy - 'Python interface to the World Bank Indicators and Climate APIs'. - GitHub

2.1 Description

This API for Python programming language provides two interfaces: one for *Indicators* (or time series data) and other for *climate data*.

1. **The Indicators API** gives access a large number of world development indicators such as country data on education, environment, gender, health, population, poverty, technology.

2. **The Climate API** gives access modelled and historical data for temperature and precipitation.

Since the World Bank has a large amount of different data, the chosen API wrapper for Python becomes very at hand. The API gets the information from the World Bank and structures it into datasets. This way it is very easy to access processed data and associated metadata in different formats.

Datasets contain the direct API response and various metadata. These objects can be converted into dictionaries for tidier data blocks. There is also a possibility to create custom data structures from a raw API response.

2.2 Searching for indicators

Considering a vast amount of indicators, it is hard to know which indicator is needed, so there is a searching option. A majority of indicators do not have much data; therefore, they can be filtered. There is an option to browse the indicators with the best data coverage (`http://data.worldbank.org/indicator`), and throw away all indicators that are not included on the page. In addition, the data can also be filtered by a topic or a source. Every indicator has a variety of metadata.

2.3 API options

- **language**: EN, ES, FR, AR or ZH. Non-latin languages seem to have less info in the responses.
- **date**: String formats - 2001, 2001:2006, 2003M01:2004M06, 2005Q2:2005Q4. Not all indicators have monthly or quarterly data.
- **mrv**: Most recent value, i.e. mrv=3 returns the three most recent values for an indicator.
- **gapfill**: Y or N. If using an MRV value, fills missing values with the next available value. Defaults to N.
- **frequency**: Works with MRV, can specify quarterly (Q), monthly (M) or yearly (Y).
- **source**: ID number is for filtering indicators by data source.
- **topic**: ID number is for filtering indicators by their assigned category. Cannot give both source and topic in the same request.
- **incomelevel**: List of 3-letter IDs to filter results by income level category.
- **lendingtype**: List of 3-letter IDs to filter results by lending type.
- **region**: List of 3-letter IDs to filter results by region.

2.4 Country codes

wbpy supports ISO 1366 alpha-2 and alpha-3 country codes. The World Bank uses some non-ISO 2-letter and 3-letter codes for regions, which are also supported.

2.5 Climate API

There are two methods to the climate API:

1. **Modelled**, which returns a Modelled Dataset instance, and
2. **Instrumental**, which returns an Instrumental Dataset instance. The World Bank API has multiple date pairs associated with each dataset, but a single wbpy call will make multiple API calls and return all the dates associated with the requested data type.

Like the Indicators API, locations can be ISO-1366 alpha-2 or alpha-3 country codes.

For the complete explanation of the data and associated models, see the Climate API documentation.