Python Documentation

version

August 30, 2020

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Welcome to Ashish Kumar Pathak's documentation!

API DOCUMENTATION

NASA Open API

NASA APOD By Ashish Kumar

DISCLAIMER

The sole intention of writing this document is to help the user understand about documenting an API. The author has no intention to interfere with the API at NASA Open API and the author does not declare this document as a developer guide for NASA Open API. Developers are requested to visit the NASA open API website for official documentation. The author acknowledges the credit of original contributors to this document and this document the only intention is to demonstrate sample writing work.

Introduction to NASA

NASA – or the National Aeronautics and Space Administration, to give it its full name – is an American government agency focused on space exploration, aero-nautics, and aerospace research.

SCOPE oF this DOCUMENT

Most developers getting started with api.nasa.gov wish to leverage NASA data in their applications and services, and this is encouraged. There are also developers that have existing APIs that they may wish to contribute to the NASA API site.*This document consists of the only API documentation for NASA APOD (NASA Astronomy Picture of Day)*.

NASA API (APOD) PORTAL

The objective of the NASA API (Application Programming Interface) site is to make NASA data, especially imagery, eminently accessible to application develop-ers. When a user sends a request with APOD as an endpoint, the API responds to the user with the picture of the day from the NASA image repository.

AUTHENTICATION

Authentication is in place on api.nasa.gov to enable developer's greater access to backend resources. Although api.nasa.gov web services can be accessed without an API key, this introduces limitations related to rate limiting of calls. To understand how to use your API key to sign calls, details about web service and DEMO_KEY rate limits, and viewing current usage, please visit the API authentication sec-tion on the NASA API listing page for detailed information.

Web Service Rate Limits

Limits are placed on the number of API requests you may make using your API key. Rate limits may vary by service, but the defaults are:

Hourly Limit: 1,000 requests per hour For each API key, these limits are applied across all api.nasa.gov API requests. Ex-ceeding these limits will lead to your API key being temporarily blocked from making further requests. The block will automatically be lifted by waiting an hour. If you need higher rate limits, contact us at contakt@nasa.gov.in. ## DEMO_KEY Rate Limits In documentation examples, the special DEMO_KEY api key is used. This API key can be used for initially exploring APIs prior to signing up, but it has much lower rate limits, so you're encouraged to sign up for your own API key if you plan to use the API (signup is quick and easy). The rate limits for the DEMO_KEY are:

Hourly Limit: 30 requests per IP address per hour.

Daily Limit: 50 requests per IP address per day.

API REFERENCE

This is a REST (Representational State Transfer) API. This API has predictable, resource oriented URLs, and uses HTTP response codes to indicate API errors.

HTTP status code summary

Code | Summary |
————- | ————- |
200
400
500, 502, 503, 504

Types of Request and Description

Request | Description |
————- | ————- |
GET
POST
DELETE

Error Handling

This API returns HTTP error responses for many reasons, such as a failed search query, invalid parameters, a query for a nonexistent media asset, and network unavailability. It is recommended to write code that gracefully handles all possible HTTP status codes that API returns.

In general, the error codes relate to issues as below:

1XX - Informational

2XX - Success

3XX - Redirection

4XX - Client error

5XX - Server error

Sample Request and Response

NASA APOD (NASA Astronomy Picture of Day). One of the most popular websites at NASA. In fact, this website is one of the most popular websites across all federal agencies. This endpoint structures the APOD imagery and associated metadata so that it can be repurposed for other applications.

HTTP Sample Request

Request	URI
GET	https://api.nasa.gov/planetary/apod?api_key=DEMO_KEY.

Request Break down

Resource Components	Value	Description
Method	*GET*	Fetches the value.
URL	https://api.nasa.gov	Base URI
Resource	/planetary/apod	The resource typically refers to some object or set of objects that are exposed at an API endpoint

Parameters	?api_key=DEMO_KEY	Options you can pass with the endpoint (such as specifying the response format or the amount returned) to influence

Query Parameters

Example of Request and Response

HTTP Request

Steps to make a request.

1. Create a new request.
2. Save the request in the desired folder
3. Select the request type as GET.
4. Enter the URL of the API in the search box beside the request field.
5. Check the Authorisation code and and then proceed.
6. Click Search

Request | |
————- | ————- |
GET

Response | |
————- | ————- |
Status

Body

{ “**date**“: “2019-05-02”, “explanation”: “Orbiting 400 kilometers above Quebec, Canada, planet Earth, the International Space Station Expedition 59 crew captured this snapshot of the broad St. Lawrence River and curiously circular Lake Manicouagan on April 11. Right of center, the ring-shaped lake is a modern reservoir within the eroded remnant of an ancient 100 kilometer diameter impact crater. The ancient crater is very conspicuous from orbit, a visible reminder that Earth is vulnerable to rocks from space. Over 200 million years old, the Manicouagan crater was likely caused by the impact of a rocky body about 5 kilometers in diameter. Currently, there is no known asteroid with a significant probability of impacting Earth in the next century. But a fictional scenario to help practice for an asteroid impact is on going at the 2019 IAA Planetary Defense Conference.”, “hdurl”: “https://apod.nasa.gov/apod/image/1905/iss059e019043.jpg”, “**media_type**“: “image”, “**service_version**“: “v1”, “title”: “Manicouagan Impact Crater from Space”, “url”: “https://apod.nasa.gov/apod/image/1905/iss059e019043_1024.jpg” } |

Example of Request and Response

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Request | |
————- | ————- |
GET | https://api.nasa.gov/planetary/apod?api_key=NNKOjkoul8n1CH18TWA9gwngW1s1SmjESPjNoUFo|

Response | |
————- | ————- |
Status | Status 200 OK

Body   {

“**date**”: “2019-05-02”,<pr> “explanation”: “Orbiting 400 kilometers above Quebec, Canada, planet Earth, the International Space Station Expedition 59 crew captured this snapshot of the broad St. Lawrence River and curiously circular Lake Manicouagan on April 11. Right of center, the ring-shaped lake is a modern reservoir within the eroded remnant of an ancient 100 kilometer diameter impact crater. The ancient crater is very conspicuous from orbit, a visible reminder that Earth is vulnerable to rocks from space. Over 200 million years old, the Manicouagan crater was likely caused by the impact of a rocky body about 5 kilometers in diameter. Currently, there is no known asteroid with a significant probability of impacting Earth in the next century. But a fictional scenario to help practice for an asteroid impact is on going at the 2019 IAA Planetary Defense Conference.”, “hdurl”: “https://apod.nasa.gov/apod/image/1905/iss059e019043.jpg”, “**media_type**”: “image”, “**service_version**”: “v1”, “title”: “Manicouagan Impact Crater from Space”, “url”: “https://apod.nasa.gov/apod/image/1905/iss059e019043_1024.jpg”

}

(APPENDIX-I) APOD API JAVASCRIPT EMBEDDING

var url = “https://api.nasa.gov/planetary/apod?api_key=NNKOjkoul8n1CH18TWA9gwngW1s1SmjESPjNoUFo”;

```
$.ajax({
  url: url,
  success: function(result){
  if("copyright" in result) {
    $("#copyright").text("Image Credits: " + result.copyright);
  }
  else {
    $("#copyright").text("Image Credits: " + "Public Domain");
  }

  if(result.media_type == "video") {
    $("#apod_img_id").css("display", "none");
    $("#apod_vid_id").attr("src", result.url);
  }
  else {
    $("#apod_vid_id").css("display", "none");
    $("#apod_img_id").attr("src", result.url);
  }
  $("#reqObject").text(url);
  $("#returnObject").text(JSON.stringify(result, null, 4));
  $("#apod_explaination").text(result.explanation);
  $("#apod_title").text(result.title);
}
});
 <code> (APPENDIX-II) USEFUL RESOURCES </code>


Link: https://images.nasa.gov/docs/images.nasa.gov_api_docs.pdf
```

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Indices and tables

- **genindex**
- **modindex**
- **search**