Resource Writeup: Facebook API

The Facebook API provides access to developers to read and write to the Facebook social graph. Facebook is a social media service built around a social network or social graph, where users and pages are “nodes” related to each other through all the various connections or “edges” between them. Facebook has several capabilities, from individuals or pages to posting to their own feed with text, photos, videos and polls, to live streaming video, creating groups, messaging, and much more.

Facebook has two primary APIs: 1) the Graph API, which is the primary way to read and write to Facebook, and 2) the Marketing API, which Facebook describes as the way to “offer programmatic access to manage your Facebook ad campaigns, Custom Audiences, and reports.” The Graph API requires an access token or user login for almost all requests, which they have wrapped into a convenient tool for developers to use called Facebook Login. I will be focusing on the Graph API in this writeup.

**The Facebook Graph API:** <https://developers.facebook.com/docs/graph-api/>

The Graph API is HTTP-based, so it can be used with urllib or cURL, and can even be used directly in browser. As I touched on before, this API is composed of nodes, edges and fields: Nodes are individual objects, which could be anything from a User to a Comment to a Page; edges are connections between a single object and a group of objects, such as the Comments on a Post or the Photos on a Page; and fields are the individual pieces of data/characteristics about a certain object, such as a User’s name or birthday. Considering the entire API is built off of these three components, it is far-reaching and there are many things you can do. For my project, I am going to be querying various fields of information from Pages, so that is what I will focus on in terms of what the API makes available and examples of requests and output.

A single node may have hundreds of fields. Most requests as I mentioned require access tokens – in fact, in order to interact with the Graph API at all you have to link your Facebook account through Facebook Developers. Permissions for various fields may vary based on the privacy settings of the individual Facebook User (or Page, or Photo, etc.), and requests of different kinds will require new access tokens.

**Examples**

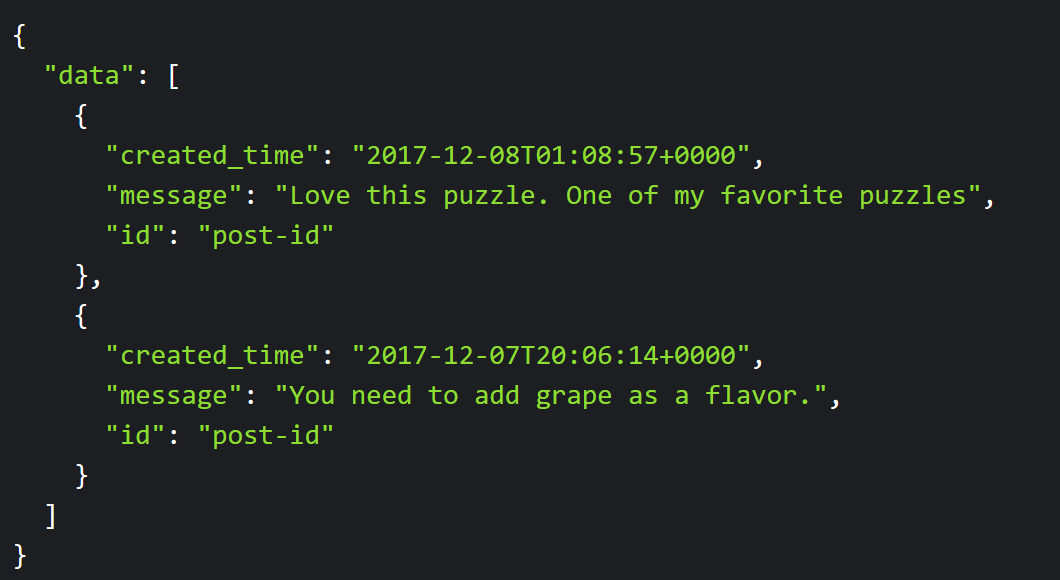
* Querying a Facebook User’s name and User ID
  + [https://graph.facebook.com/{your-user-id}?fields=id,name&access\_token={your-user-access-token}](https://graph.facebook.com/%7byour-user-id%7d?fields=id,name&access_token=%7byour-user-access-token%7d)
* JSON response:
  + {

"name": "Your Name",

"id": "your-user-id"

}

* Querying the /feed edge of a User (returns all posts on the feed; automatically paginated and can be limited):
  + [https://graph.facebook.com/{your-user-id}/feed?access\_token={your-user-access-token}](https://graph.facebook.com/%7byour-user-id%7d/feed?access_token=%7byour-user-access-token%7d)
* JSON response:

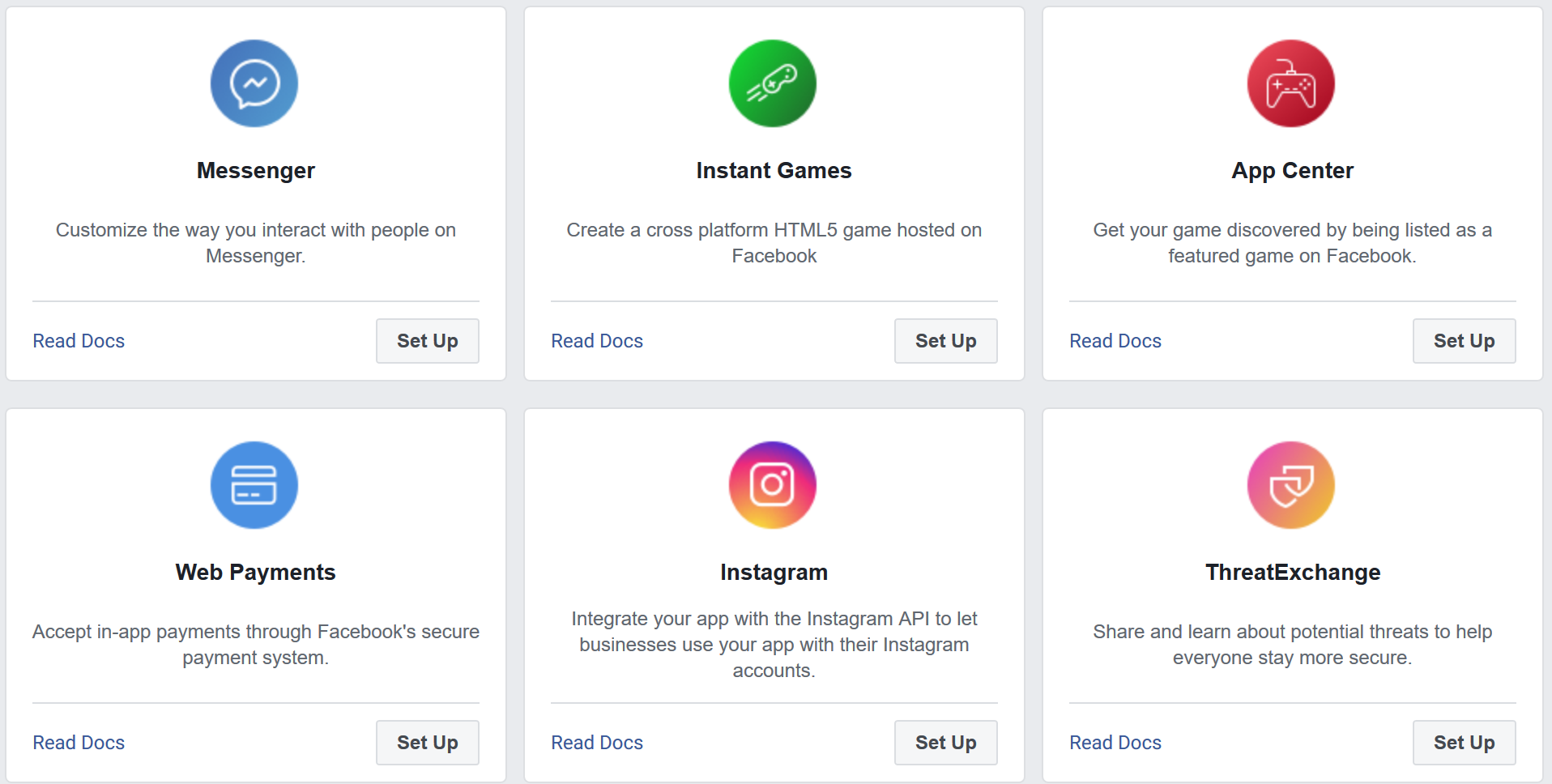


(Pasting and correcting the formatting of this in Word will kill me so I am just going to screenshot.) Most edges will provide you with more than one field by default, which is why this response returns the created\_time and message fields in addition to the Post IDs.

* For a last example, let’s say we want the length and width for each Photo node returned by the /photos edge:
  + [https://graph.facebook.com/{your-user-id}/photos?fields=height,width&access\_token={your-user-access-token}](https://graph.facebook.com/%7byour-user-id%7d/photos?fields=height,width&access_token=%7byour-user-access-token%7d)
* JSON response:



**Exemplar Applications & Scenarios**

Facebook actually provides a lot of tools to make it as easy as possible for developers to start using their platform. When you create a project in their Graph API Explorer tool, there are a number of built-in scenarios for common uses that can be utilized. Within the Graph API Explorer, these are called “products”. 

Facebook also has an entire page in their documentation for sample apps. In terms of non-Facebook apps which utilize the Graph API, there are so many examples that could be listed; any app or game that connects through your Facebook account to do things like tell you which celebrity you look like, take quizzes, and more. I’ll be taking a look at the sample apps Facebook provides documentation for on GitHub – Heroku and Hubot. These are sample clients for Facebook’s Webhooks product and Instagram’s Subscription API.

**Heroku:** A sample client that receives Webhook events. <https://github.com/fbsamples/graph-api-webhooks-samples/tree/master/heroku>   
**Hubot:** A script that messages a chat room when a Facebook Page post is published using Webhooks. <https://github.com/fbsamples/graph-api-webhooks-samples/tree/master/hubot>

In terms of tutorials and applications specifically for using the Graph API in Python, there are various tutorials out there – many are guides in using the Python SDK that Facebook provides. Here are some examples that I will be referring to as I work on my project:

**How to use Facebook Graph API to extract data using Python!** <https://towardsdatascience.com/how-to-use-facebook-graph-api-and-extract-data-using-python-1839e19d6999>

**Working with Facebook Graph API using Python** <https://www.studytonight.com/network-programming-in-python/facebook-graph-api>

**Additional Links/Resources:**

API Reference: Facebook SDK for Python <https://facebook-sdk.readthedocs.io/en/latest/api.html>

Sample Apps <https://developers.facebook.com/docs/graph-api/webhooks/sample-apps/>

Graph API Explorer Guide <https://developers.facebook.com/docs/graph-api/explorer>