

Created a PayPal account.

Created two Sandbox accounts( 1 personal, 1 business) on <https://developer.paypal.com/classic-home>

Created a PayPal button on my business account on <https://www.sandbox.paypal.com/buttons/>

Added the button to the index.html file and tested it. The transaction went through, the money moved from my personal account to the business.

It's also possible to use the PayPal IPN Simulator to send the message from the PayPal sandbox account to the URL which the listener is running.

Created a paypal\_listener route on the app.py

As PayPal does not allow test the IPN in my local machine. I created a "tunnel" application called NGROK(<https://ngrok.com/>) that gives you a test domain. Found this info on <https://stackoverflow.com/a/36038812>

Installed NGROK and ran it to redirect to my localhost with the following command:

**> ngrok http -host-header=localhost 5000**

By going to <http://localhost:4040> it gave me my two NGROK domains.

In my business sandbox account where I previously created the PayPal button, I edit the previous button adding a notify variable in the advanced box on the third step (Step 3: Customize advanced features (optional)) of creating the button.

**notify\_url=<the domain I from NGROK>/<the route of the listener>**

I got an updated button I replace the one on the index.html.

With that I was getting the IPN request from PayPal. So, I had to send it back.

I was receiving the IPN request from PayPal but I was able to read the data

With some research, I found on StackOverflow( <https://stackoverflow.com/a/16664376> ) how I could possibly read the data on Flask.

I tried different ways like (request.args, request.data) and when I did a request.form I finally get some data back.

I got back an ImmutableMultiDict, that seems to be tuples inside a list that are inside another tuple.

```
ImmutableMultiDict([('mc_gross', '50.00'), ('protection_eligibility', 'Eligible'), ('payer_id', 'UTGSWN4WKRL7C'), ('payment_date', '11:33:17 Aug 19, 2021 PDT'), ('payment_status', 'Completed'), ('charset', 'UTF-8'), ('first_name', 'Henrique'), ('mc_fee', '2.05'), ('notify_version', '3.9'), ('custom', ''), ('payer_status', 'verified'), ('business', 'bushenrique@gmail.com'), ('quantity', '1'), ('verify_sign', 'A.ZUhtTyw1Yh2wh85Qo0iFUyNTsLAayhzrbBVYwKNakbIN8on1RAix3i'), ('payer_email', 'perhenrique@gmail.com'), ('txn_id', '59T98138E65375822'), ('payment_type', 'instant'), ('last_name', 'Peroni'), ('receiver_email', 'bushenrique@gmail.com'), ('payment_fee', ''), ('shipping_discount', '0.00'), ('receiver_id', 'QEP27RJ6X8CR2'), ('insurance_amount', '0.00'), ('txn_type', 'web_accept'), ('item_name', 'my button'), ('discount', '0.00'), ('mc_currency', 'EUR'), ('item_number', 'testID'), ('residence_country', 'IE'), ('test_ipn', '1'), ('shipping_method', 'Default'), ('transaction_subject', ''), ('payment_gross', ''), ('ipn_track_id', '86ecf0b4722f2')])
```

What I could not append the ('cmd', '\_notify-validate') because the 'ImmutableMultiDict' objects are immutable.

So, I found a solution on StackOverflow( <https://stackoverflow.com/a/45713753> ) that I could modify the 'ImmutableMultiDict' into a dictionary with the built-in to\_dict() method that I could freely modify.

I got the dictionary I tried append ('cmd', '\_notify-validate'), but I obviously can't append something to a dictionary

I tried to just set the 'cmd' as a key of the params dictionary and set the value to '\_notify-validate'.

```
params['cmd'] = '_notify-validate'
```

With that I got a VERIFIED value back from PayPal.

## SEND CONFIRMATION EMAIL SETUP

If I got VERIFIED back the goal was to send a confirmation email to the buyer.

I set the necessary variables with the information I need.

Stored sensitive data in env.py

Set the message variable with MIME multipart

And sent the email via local SMTP server.

### Payment confirmation of invoice abc1234 on PayPal

[Translate message to: Portuguese \(Brazil\)](#) | [Never translate from: English](#)

[henrique@atomichabits.com](#)

Sun 22/08/2021 08:42

To: You

Hi Henrique,

Thanks for choosing PayPal for your payment method.

The payment of the Atomic Habits has been verified and successfully completed for USD12.34.

Regards,  
PayPal Team