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# Final Reflection

As I built various parts of my project, I encountered several problems:

## Azure Custom Vision Training

Iteration 1: My first model has two tags to differentiate two types of lighters, i.e., plastic and metal. The trained model had more than 90 percent prediction but when I did the quick test it identified a wallet and a phone as a lighter.

Iteration 2: I tried to improve my model by adding more photos and also, I created a new tag to identify two parts of the lighter, i.e., the lighter itself and the metal head for the ignition. My goal was to train the model to notice that most lighters have those two parts. I was hoping this would help to distinguishit from other rectangular objects, which was where my first model was failing.

The second model had ~85 % prediction and it failed for 4 out of the 5 test images. However, it successfully identified the lighter and metal head of the fifth image. This was encouraging.

Iteration 3: I noticed that most of our stock images had only lighters in them and this was probably affecting the model's ability to pick out a lighter when thee were other objects in the picture. Thus, I added roughly 50 new photos that had a mixture of lighters, phones, keys and wallets in them and then use these to retrain my model.

**Success:** This model returned better predictions. Not only did it identify lighters correctly (~46%), it also identified when there were keys and phones in the phone.

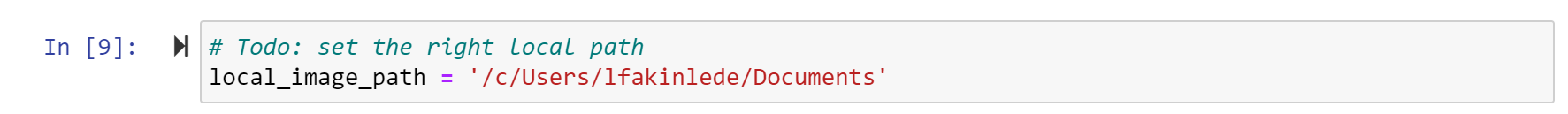
## Azure Custom Vision Prediction

For my third iteration, I completed the training and prediction using the Python SDK in jupyter notebook. After training was complete with performance check, the next step was prediction. I published the model to the project endpoint and tried to perform the prediction. However, when I tried to pass it the test lighter photos, it threw this error:

**FileNotFoundError**: [Errno 2] No such file or directory

I had done the check to set the right path, so I was confused. But when I looked at the error message, I noticed the way the the os.path.join() called joined the local\_image\_path and image\_file\_name was different so I followed that pattern to create the local\_image\_path variable and that worked perfectly, as you can see below.

### Initial path and error

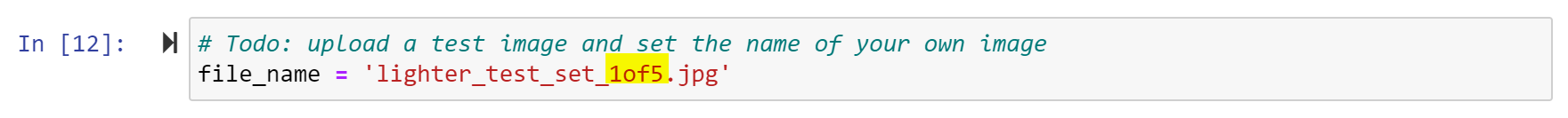


Graphical user interface, application

Description automatically generated with medium confidence

Text

Description automatically generated



Graphical user interface, text, application, email

Description automatically generated

### Modified path to success

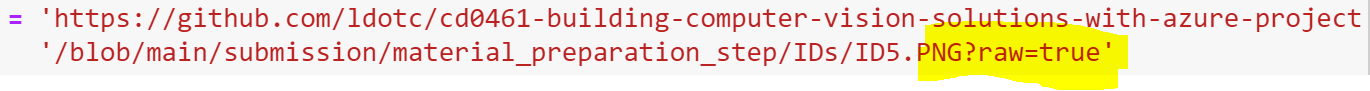
local\_image\_path = os.path.normpath(local\_image\_path)



## Azure Form Recognizer

I had problems extracting information from the identity documents when I tried to use an image from my local file system and also a URL for an the image stored on git.

The solution was to use to set the raw value to true for the URL and that worked.



### The errors messages

Graphical user interface, text, application

Description automatically generated

Text

Description automatically generated