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In [ ]: import sys
import os
import matplotlib.pyplot as plt
import matplotlib.image as mpimg
from azure.core.credentials import AzureKeyCredential
from azure.ai.formrecognizer import FormRecognizerClient
```

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In [ ]: # Code Snippet Source: L3 Demo 3 - Prebuilt Form Recognizer ID Model.ipynb
def get_id_card_details(identity_card):
    first_name = identity_card.fields.get("FirstName")
    if first_name:
        print("First Name: {} has confidence: {}".format(first_name.value, first_name.confidence))
    last_name = identity_card.fields.get("LastName")
    if last_name:
        print("Last Name: {} has confidence: {}".format(last_name.value, last_name.confidence))
    document_number = identity_card.fields.get("DocumentNumber")
    if document_number:
        print("Document Number: {} has confidence: {}".format(document_number.value, document_number.confidence))
    dob = identity_card.fields.get("DateOfBirth")
    if dob:
        print("Date of Birth: {} has confidence: {}".format(dob.value, dob.confidence))
    doe = identity_card.fields.get("DateOfExpiration")
    if doe:
        print("Date of Expiration: {} has confidence: {}".format(doe.value, doe.confidence))
    sex = identity_card.fields.get("Sex")
    if sex:
        print("Sex: {} has confidence: {}".format(sex.value, sex.confidence))
    address = identity_card.fields.get("Address")
    if address:
        print("Address: {} has confidence: {}".format(address.value, address.confidence))
    country_region = identity_card.fields.get("CountryRegion")
    if country_region:
        print("Country/Region: {} has confidence: {}".format(country_region.value, country_region.confidence))
    region = identity_card.fields.get("Region")
    if region:
        print("Region: {} has confidence: {}".format(region.value, region.confidence))
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In [ ]: def display_image(path):
    img = mpimg.imread(path)
    imgplot = plt.imshow(img)
    plt.show()
```

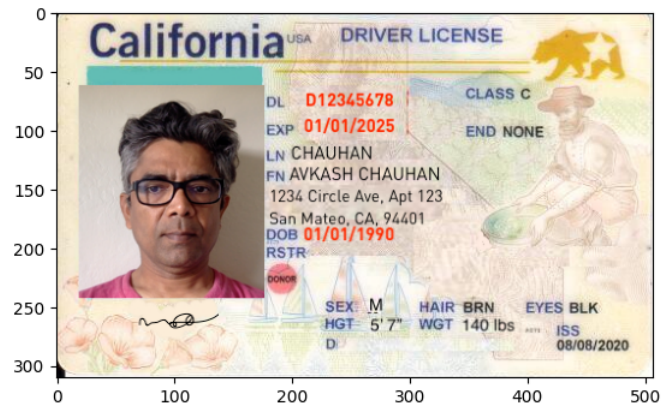
```
In [ ]: endpoint_form_recognizer = "https://udacity-fr.cognitiveservices.azure.com/"
key_form_recognizer = "60baf17acfa44cb19d630b2141b10931"
id_path = "C:\\_Huisel\\PythonProjects\\workspace\\udacity\\cd0461-building-computer-vision-solutions-with-azure-project-starter\\starter\\sample_submission\\material_preparation_step\\digital_id\\ca-d1-avkash.png"

form_recognizer_client = FormRecognizerClient(endpoint=endpoint_form_recognizer, credential=AzureKeyCredential(key_form_recognizer))
```

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In [ ]: def id_text_extraction(id_content_path):
    """
    Extracts text from image using Azure form recognizer
    """
    with open(os.path.join(id_content_path), "rb") as image:
        id_content = form_recognizer_client.begin_recognize_identity_documents(image.read(), content_type = "image/png")
        id_content_result = id_content.result()

    return id_content_result
```

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In [ ]: display_image(id_path)
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In [ ]: id_text_result = id_text_extraction(id_path)
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In [ ]: id_text_result[0].to_dict()
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Out[ ]: {'fields': {'Address': {'value_type': 'string',
    'name': 'Address',
    'value': '1234 Circle Ave, Apt 123 San Mateo, CA, 94401',
    'confidence': 0.617,
    'label_data': None,
    'value_data': {'text': '1234 Circle Ave, Apt 123 San Mateo, CA, 94401',
    'bounding_box': [{'x': 180.0, 'y': 149.0},
    {'x': 328.0, 'y': 149.0},
    {'x': 328.0, 'y': 182.0},
    {'x': 180.0, 'y': 182.0}],
    'page_number': 1,
    'field_elements': []}},
    'CountryRegion': {'value_type': 'countryRegion',
    'name': 'CountryRegion',
    'value': 'USA',
    'confidence': 0.99,
    'label_data': None,
    'value_data': None},
    'DateOfBirth': {'value_type': 'date',
    'name': 'DateOfBirth',
    'value': datetime.date(1990, 1, 1),
    'confidence': 0.995,
    'label_data': None,
    'value_data': {'text': '01/01/1990',
    'bounding_box': [{'x': 208.0, 'y': 182.0},
    {'x': 285.0, 'y': 181.0},
    {'x': 285.0, 'y': 196.0},
    {'x': 208.0, 'y': 196.0}],
    'page_number': 1,
    'field_elements': []}},
    'DateOfExpiration': {'value_type': 'date',
    'name': 'DateOfExpiration',
    'value': datetime.date(2025, 1, 1),
    'confidence': 0.99,
    'label_data': None,
    'value_data': {'text': '01/01/2025',
    'bounding_box': [{'x': 208.0, 'y': 91.0},
    {'x': 287.0, 'y': 89.0},
    {'x': 286.0, 'y': 104.0},
    {'x': 208.0, 'y': 105.0}],
    'page_number': 1,
    'field_elements': []}},
    'DocumentNumber': {'value_type': 'string',
    'name': 'DocumentNumber',
    'value': 'D1234578',
    'confidence': 0.995,
    'label_data': None,
    'value_data': {'text': 'D12345678',
    'bounding_box': [{'x': 210.0, 'y': 68.0},
    {'x': 285.0, 'y': 68.0},
    {'x': 285.0, 'y': 82.0},
    {'x': 209.0, 'y': 82.0}],
    'page_number': 1,
    'field_elements': []}},
    'FirstName': {'value_type': 'string',
    'name': 'FirstName',
    'value': 'AVKASH CHAUHAN',
    'confidence': 0.824,
    'label_data': None,
    'value_data': {'text': 'AVKASH CHAUHAN',
    'bounding_box': [{'x': 195.0, 'y': 131.0},
    {'x': 324.0, 'y': 131.0},
    {'x': 324.0, 'y': 145.0},
    {'x': 195.0, 'y': 145.0}],
    'page_number': 1,
    'field_elements': []}},
    'LastName': {'value_type': 'string',
    'name': 'LastName',

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'value': 'CHAUHAN',
'confidence': 0.908,
'label_data': None,
'value_data': {'text': 'CHAUHAN',
'bounding_box': [{'x': 196.0, 'y': 113.0},
{'x': 265.0, 'y': 112.0},
{'x': 266.0, 'y': 126.0},
{'x': 197.0, 'y': 128.0}]},
'page_number': 1,
'field_elements': []},
'Region': {'value_type': 'string',
'name': 'Region',
'value': 'California',
'confidence': 0.973,
'label_data': None,
'value_data': None},
'Sex': {'value_type': 'string',
'name': 'Sex',
'value': 'M',
'confidence': 0.985,
'label_data': None,
'value_data': {'text': 'M',
'bounding_box': [{'x': 263.0, 'y': 242.0},
{'x': 271.0, 'y': 242.0},
{'x': 271.0, 'y': 256.0},
{'x': 263.0, 'y': 256.0}]},
'page_number': 1,
'field_elements': []}},
'form_type': 'prebuilt:idDocument:driverLicense',
'pages': [{'page_number': 1,
'text_angle': 0.0,
'width': 507.0,
'height': 310.0,
'unit': 'pixel',
'tables': [],
'lines': [],
'selection_marks': []}],
'model_id': None,
'form_type_confidence': 0.995,
'page_range': {'first_page_number': 1, 'last_page_number': 1}}

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In [ ]: get_id_card_details(id_text_result[0])
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First Name: AVKASH CHAUHAN has confidence: 0.824
Last Name: CHAUHAN has confidence: 0.908
Document Number: D1234578 has confidence: 0.995
Date of Birth: 1990-01-01 has confidence: 0.995
Date of Expiration: 2025-01-01 has confidence: 0.99
Sex: M has confidence: 0.985
Address: 1234 Circle Ave, Apt 123 San Mateo, CA, 94401 has confidence: 0.617
Country/Region: USA has confidence: 0.99
Region: California has confidence: 0.973

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In [ ]:
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