

# Cut Video Summary: ML Strategy

# Summary

## How Google does ML

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Machine Learning on Google Cloud Platform





A practical, real-world introduction to ML  
enabling  
Python programmers to do ML  
Data scientists to build production ML models

Google

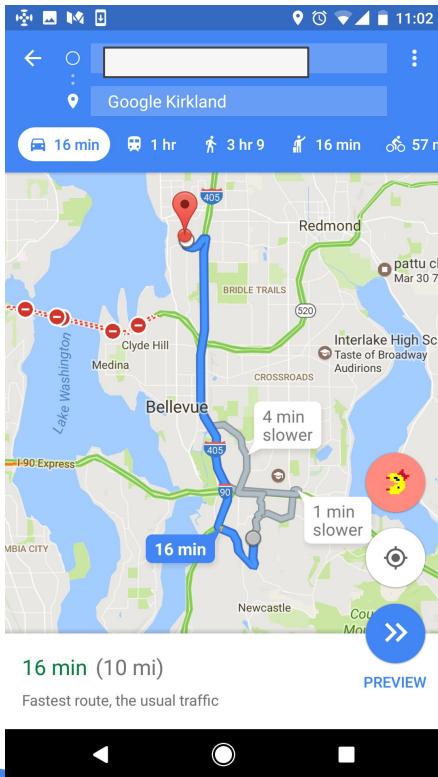
giants

- giants
- giants – San Francisco Giants, Baseball franchise
- giants – New York Giants, American football team
- giants **score**
- giants **schedule**
- giants **tickets**

Press Enter to search.



# Is this machine learning? What's needed for ML?



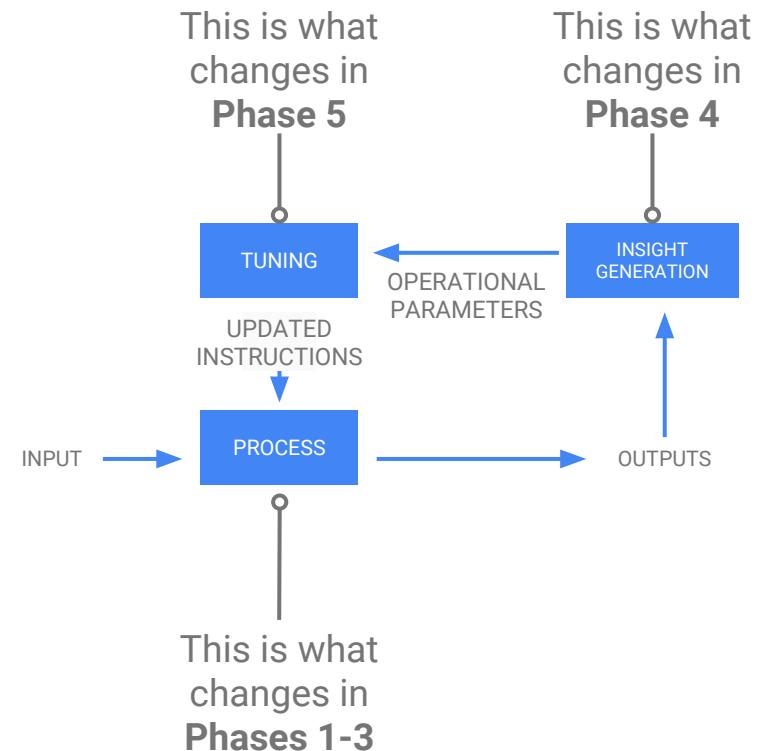
# Google is going to share the secret sauce

- It's not just code
- It's not just an algorithm
- It's also the organizational know-how we've acquired over years of managing more value-generating ML systems than any other company in the world.

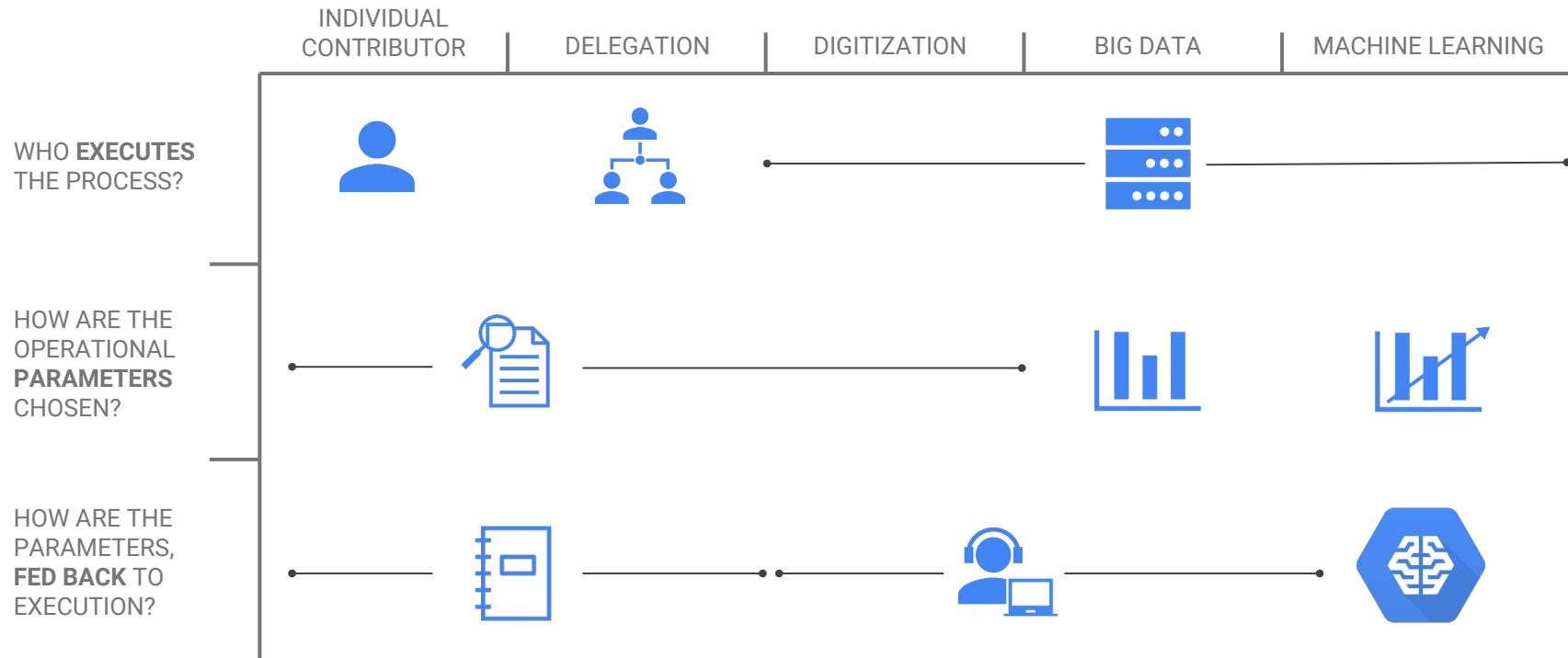
# Path to ML: The 5 phases

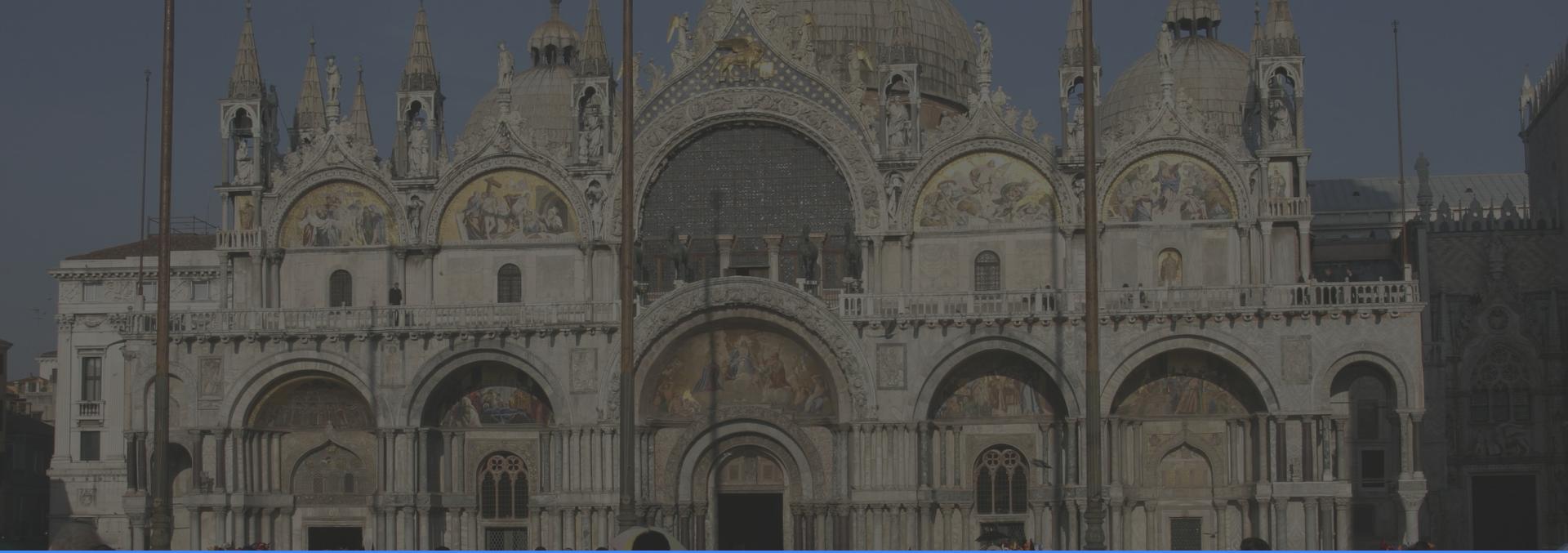
Business processes that eventually end in ML typically go through 5 phases:

- Individual contributor
- Delegation
- Digitization
- Big Data and Analytics
- Machine learning

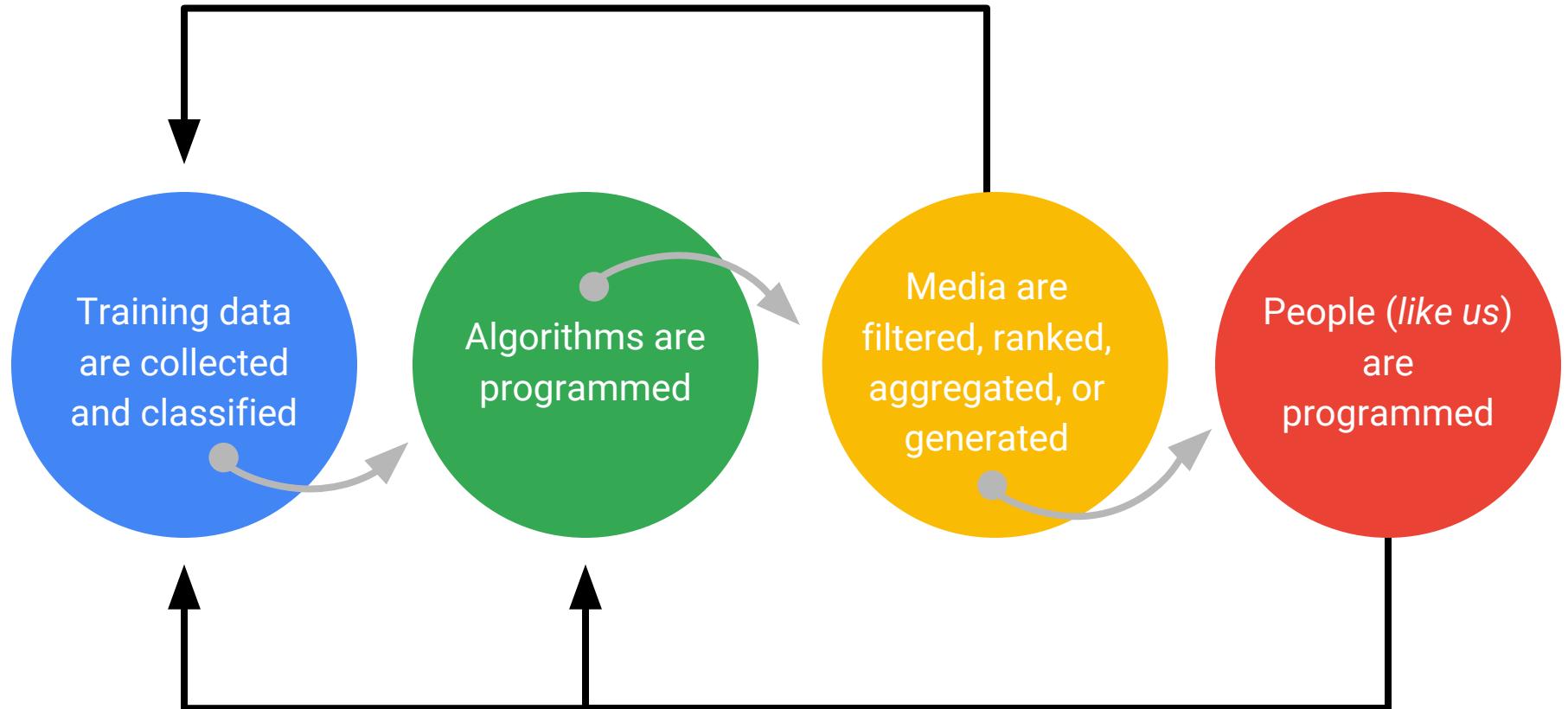


# Reviewing the Path to ML: 5 phases





## Unconscious bias gets reinforced in the training data



# Use Qwiklabs to get a temporary GCP account

Welcome! You have signed up successfully.

In-Session Class: ML Immersion

Class Details

Lab 0 : Getting started in Qwiklabs

Lab 0 : Getting started in Qwiklabs

Select 1 Credit

In this lab you will use the Qwiklabs virtual classroom interface to access the Google Cloud Platform, launch Databook and clone the repository, and create a repository, and create a

Duration: 58000  
Access Time: 58000  
Setup Time: 0  
Level: introductory

Rate Lab: Lab 0 : Getting started in Qwiklabs

Start Lab

TIME REMAINING 40 days

Primary Instruction

for the use of: ajayvsh@gmail.com

Getting started in Qwiklabs

Overview

An introduction to Qwiklabs

To use Qwiklabs, you need a standard internet browser.

Plan the timing of your lab.

Logging in to Google Cloud Platform

Step 1: Locate the Username, Password and Project Id

Step 2: Browse to Console

Step 3: Sign in to Console

Step 4: Accept the conditions

Step 5: Don't change the password

Step 6 Agree to the Terms of Service

Step 7: Console opens

Step 8: Switch project (if necessary)

LAB INSTRUCTIONS

## GETTING STARTED IN QWIKLABS

### Overview

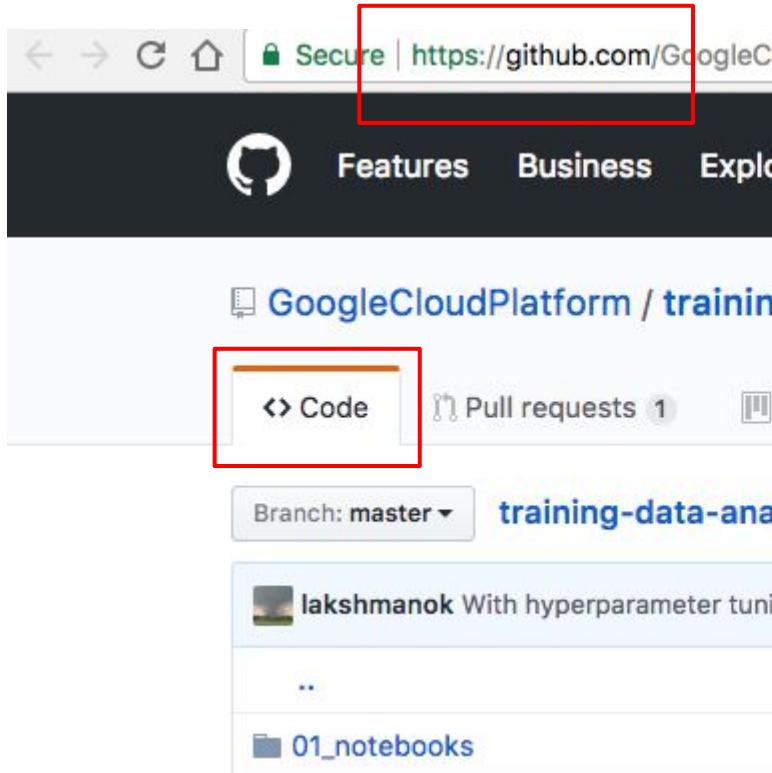
In this lab, you

- get a quick introduction to Qwiklabs,
- learn how to get into GCP with your Qwiklabs generated account,
- share your project info and user credentials with instructor

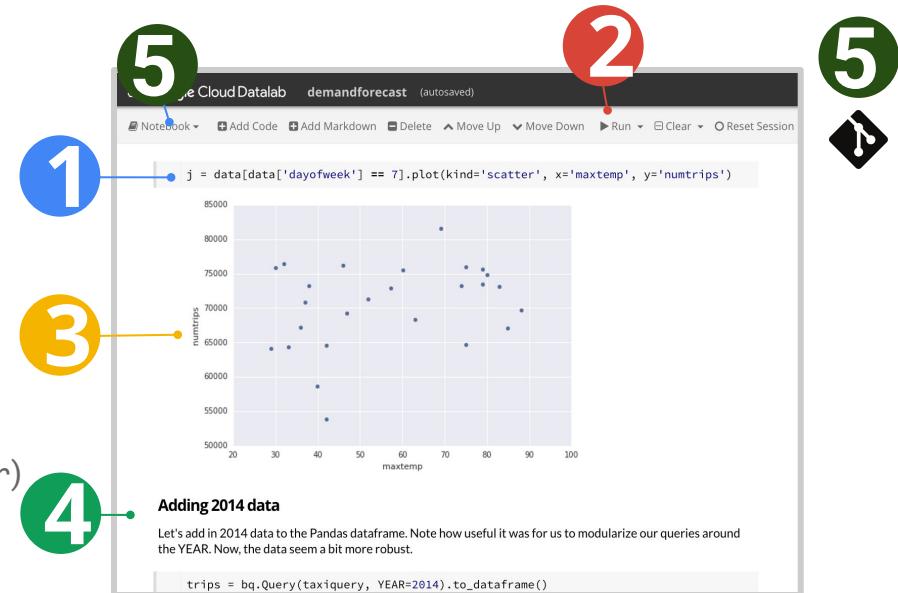
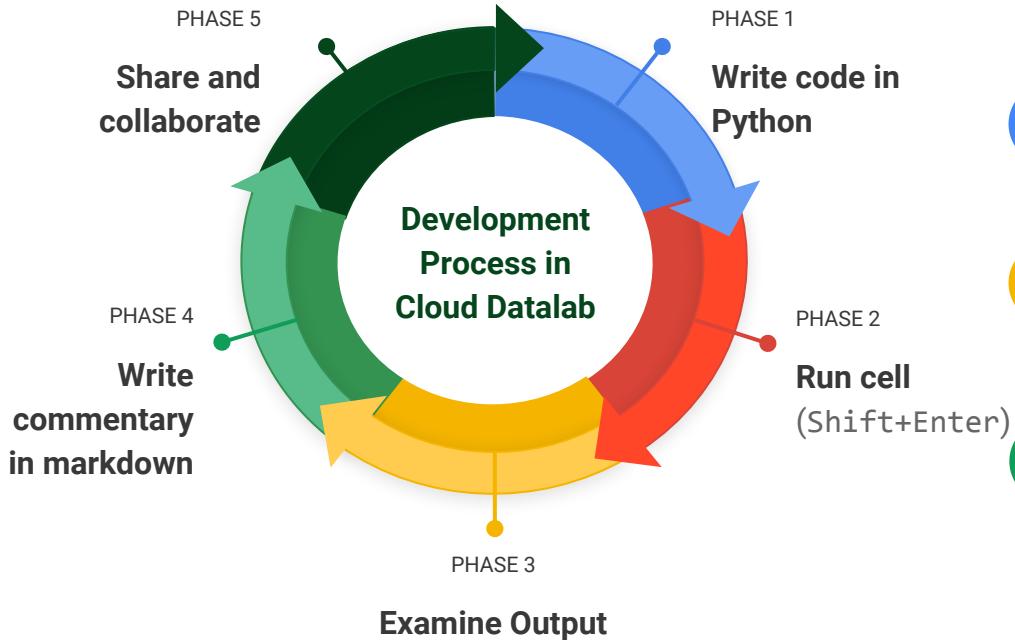
# Source code for labs is on GitHub

[https://github.com/GoogleCloudPlatform/training-data-analyst/tree/master/courses/machine\\_learning/deeplearning](https://github.com/GoogleCloudPlatform/training-data-analyst/tree/master/courses/machine_learning/deeplearning)

Later, practice taking the lab apart and trying to build it yourself on your own GCP account (strongly recommended)



# Datalab notebooks are developed in an iterative, collaborative process



# Google Cloud provides an earth-scale computer

Networking



FASTER (US, JP, TW) 2016

Data storage



Compute power



Indigo (SG, ID, AU) 2019

- Network
- Network sea cable investments
- Edge points of presence >100
- Edge node locations >1000

Monet (US, BR) 2017

Junior (Rio, Santos) 2017

Tannat (BR, UY, AR) 2017

Google Cloud

# Demo: Query large datasets in seconds

```
#standardsql

# medicare claims in 2014
SELECT
    nppes_provider_state AS state,
    ROUND(SUM(total_claim_count) / 1e6) AS total_claim_count_millions
FROM
    `bigquery-public-data.medicare.part_d_prescriber_2014`
GROUP BY
    state
ORDER BY
    total_claim_count_millions DESC
LIMIT 5;
```

Row	state	total_claim_count_millions
1	CA	116.0
2	FL	91.0
3	NY	80.0
4	TX	76.0
5	PA	63.0

# There are pre-trained machine learning services available on Google Cloud

Custom ML models



TensorFlow



Machine Learning  
Engine

Pre-trained ML models



Vision API



Speech API



Jobs API



Translation  
API



Natural  
Language API

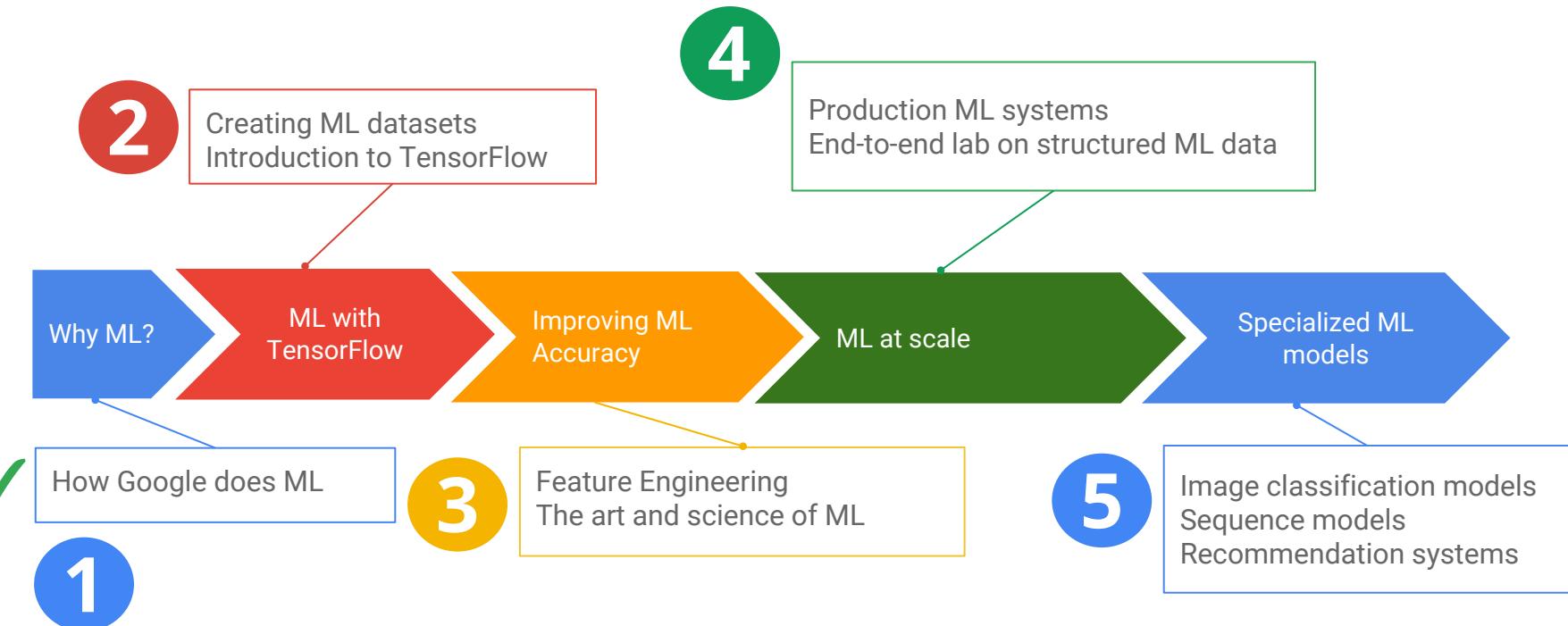
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# The ML APIs are microservices that provide a high level of abstraction

when we build ML models ourselves, it should be our goal to make them as easy to use and stand-alone.



# Machine Learning on Google Cloud Platform



# cloud.google.com

