What is tensorflow

It is a machine learning framework used to build models, like NLP natural language processing , computer vision , face recognition.

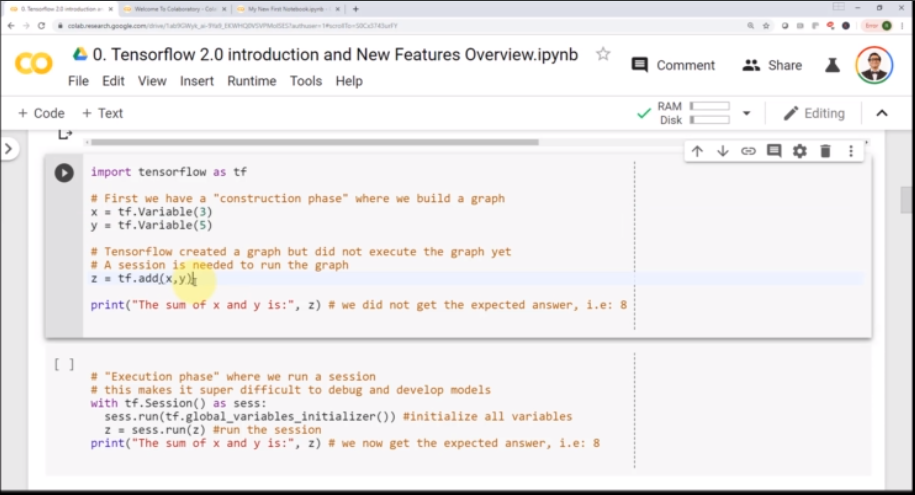
It is developed by google in 2015 by google brain team

GPU and TPU

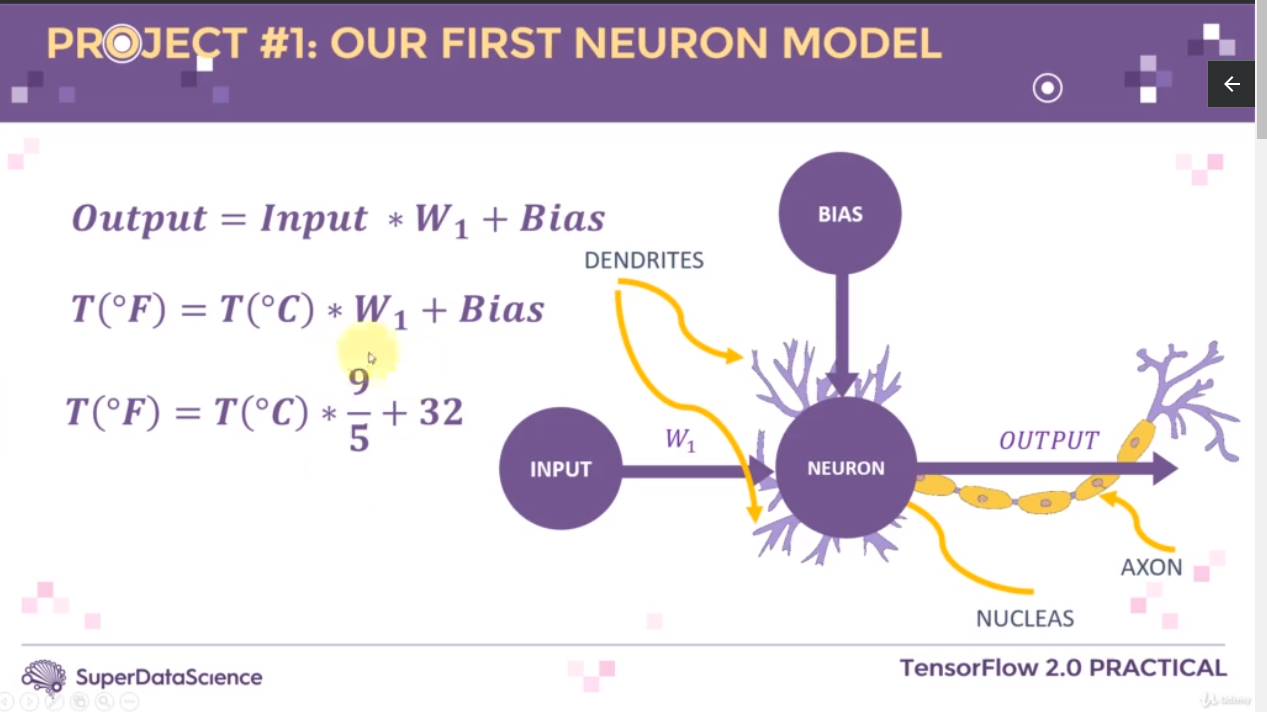
Graphics Processing unit – used in CAD drawing, video editing.

TPU –

Eager Execution – we can execute code line by line , in Tensor flow 1 we had to initiate a session to print or analyse the variables but from tensor flow 2 onwards we do not need it.



Keras – default API to interact with tensorflow



Regression

Regression works by predicting value of one variable Y based on another variable X , where X is called Independent variable and Y is called dependent variable.

Graph 1 when value of x increases the value of y is increases and graph 2 when y decreases if the value of x increases

graph 1 Y

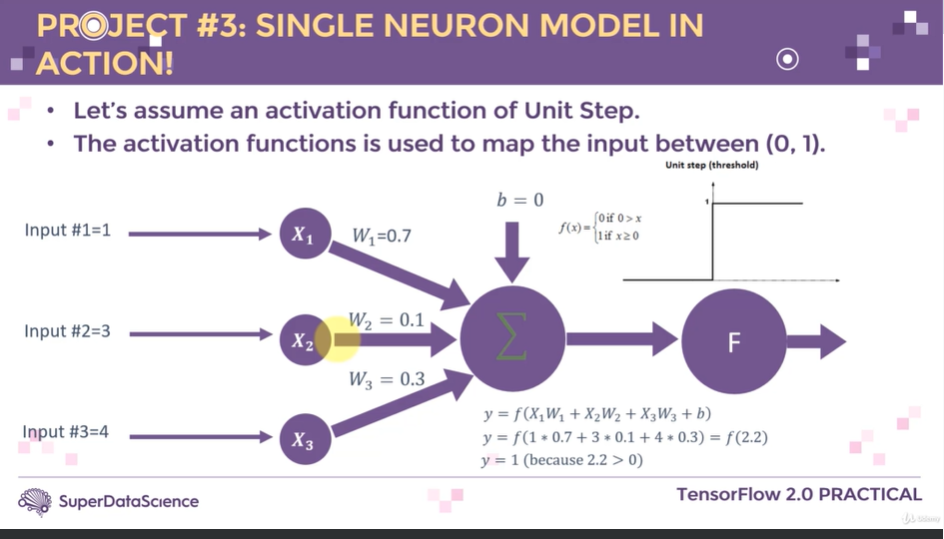
Y

X X Graph 2

Activation function

Activation function takes in inputs \* weigths + bias and makes a decision

For ex : the activation function when finds a positive value it sets the output as 1 and if it is a negative number it sets the value as 0 . this way the model is capable of taking decisions , like the object is a cat or not . i.e if we have range of values and when we want to to default them to some values we need activation function and this will help system to come to a decision



Activation function screen shot above.

Activation function overview

1.Sigmoid, 0,1 – output layer

2.Relu – rectified linear units – in hidden layers.

3. Hyperbolic Tangent Activation - -1 to 1 - in out put layers

Multilayer perceptron network

Network which has hidden layers which connect input to output.

These are called dense network. Or deep learning.