Week2 Summary:

* What are Artificial Neural Networks?

It is a complicated Machine Learning technique which mimics a human brain and how it functions.

* Logistic Regression is a very simple Neural Network

Sigmoid function is not the only solution.

Other **activation functions** can be used.

* Activation functions:
  + Activation functions are really important for a Artificial Neural Network.
  + Their main purpose is to convert a input signal of a node in a A-NN to an output signal. That output signal now is used as a input in the next layer in the stack.
  + Two types: linear and non-linear
  + Nonlinear Activation Functions are the most used activation functions
  + Why do we need Non-Linearities?
  + ***“Input times weights , add Bias and Activate”***
* Why do we need Non-Linearities?
  + It makes it easy for the model to generalize or adapt with variety of data and to differentiate between the output
* Multi-Layer Neural Networks MLP

Layers type

Input layer

Output layer

Hidden Layer

* Multi-Layer Neural Networks – Forward path