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