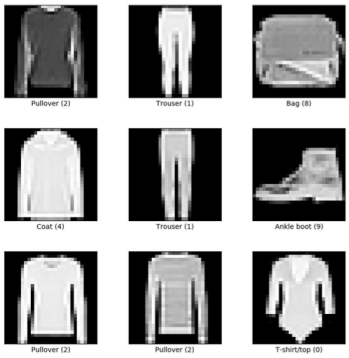
Coursework 4

Two layer network

Implement a two-layer network with the following characteristics for the classification of Fashion MNIST dataset, T-shirt, Trouser, Pullover and etc.

Optimizer	stochastic gradient decent (SGD)
Loss function	categorical crossentropy
Model accuracy	Categorical accuracy
Batch size	500
Max epochs	40
valid: train split ratio	0.2
dropout	0
First layer activation function	relu



1. Fix the learning rate at 0.1 and number of nodes in the hidden layer to 100. Plot the trained and validation network accuracy for each epoch.
2. Fix the learning rate at 0.1 and change the number of nodes in the hidden layer from 10 to 10000. Plot the trained and validation network accuracy vs. the number of nodes.
3. Fix the number of nodes in the hidden layer to 500 and change the learning rate from 0.01 to 10. Plot the trained and validation network accuracy vs. learning rate.