

1.	Build a fully connected neural network (FCNN) and a convolutional neural network (CNN) for classifying 10 classes of images.	5
2.	Train and test your FCNN and CNN by the Fashion dataset. Discuss your results by comparing performance between two types of networks.	5
3.	Build a CNN having a pre-trained MobileNet as backbone to classify 10 classes.	5
4.	Train and test your CNN having a pre-trained MobileNet as backbone to classify images of the CIFAR-10 dataset. Discuss your results by comparing performance between transfer_learning + fine tuning and only transfer learning.	5
5.	Prepare a neural network with appropriate activation functions, so that it has the same architecture as shown in the following Figure-1.	5

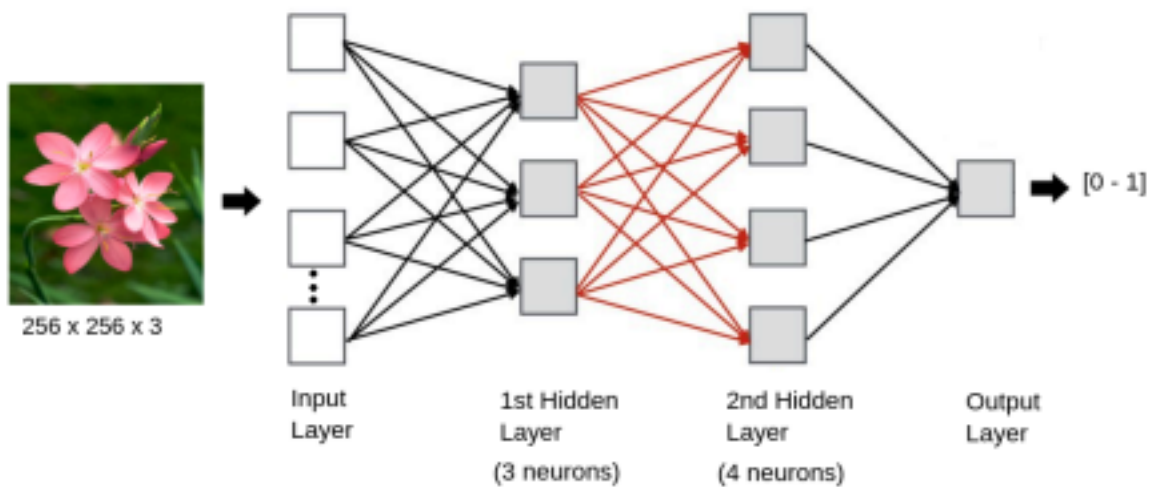


Figure-1

6.	Prepare a neural network with appropriate activation functions, so that it has the same architecture as shown in the following Figure-2.	5
----	--	---

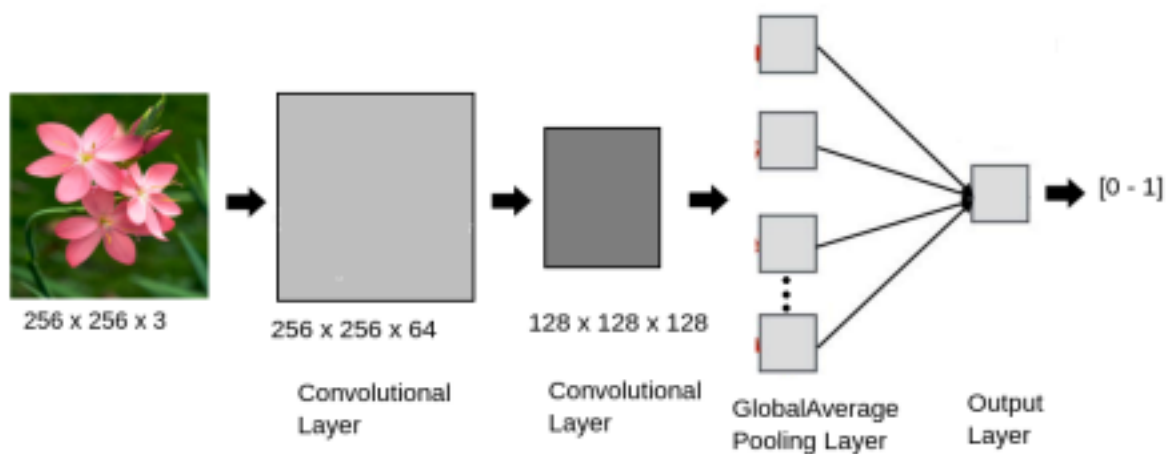


Figure-2

7.	<p>Train networks shown in Figure-1 to classify images of two classes captured by your mobile phone with the following conditions:</p> <ul style="list-style-type: none"> • 1st 10 epochs full network will be trained • Next 10 epochs, neurons of 1st and 2nd hidden layers will be freezed • batch_size = 8 • Training_set = 70% of total data, validation_set = 20% of training set, test set = 30% of total data • After every epoch, the model will be saved if the validation loss is lower than previous all epochs. 	5
----	--	---