| **Criteria** | **Ratings** | **Points** |
| --- | --- | --- |
| **Load dataset and Summary** | 1) Imported all the necessary libraries that are required for the assignment, Good. Loaded the image dataset as a NumPy array and labels of the corresponding images as a panda’s data frame, good. The shape of both image data and labels are printed. The images present in the dataset are visualized, good. Additionally (3 marks) are deducted as a penalty since .html file of the assignment is not submitted despite of clear instructions. | 5/5 |
| **Data Pre - Processing** | 2) Pre-processing is performed on the image dataset. The images are normalized by dividing all the pixel values by largest pixel value, that is 255. Further Gaussian blurring is used for Image smoothing by removing noise from the images. The sample of final preprocessed images are printed to visualize the effects of pre-processing, Good. | 15/15 |
| **Data Compatible for Modelling** | 3) As part of data pre-processing One hot encoding is used to encode the target labels to convert them into numeric values, good. Data is split into train and test dataset by specifying test size as 30%. Test data set is further equally split into validation data set. The shape of all train, test and validation dataset are checked and noted that the shapes are compatible to be fed into keras models, good. But The label of the image Y\_train[0] is not printed by inverse transforming the encoded label. ( 3 marks deducted) | 7/10 |
| **Build CNN** | 4) CNN model is built to perform multi class classification. Along with input layer one convolutional layer is built with activation function as relu. Fully connected Dense layer is defined with activation function as relu. Output layer is defined with activation function as softmax. Maxpool layer is also defined. Batch normalization is also performed. Optimizer is set as Adam and loss function is defined as categorical cross entropy and metrics is set as accuracy good. | 15/15 |
| **Modelling and Evaluation** | 5) The model is trained on the training dataset and number of epochs is set as. And model Validation is performed on validation dataset. And modelâs performance is evaluated on test dataset by printing test accuracy and test loss. But Labels for test dataset are not predicted from the CNN model and confusion matrix is not created with actual V/s predicted labels. (4 marks deducted) | 6/10 |
| **Visualize Predictions** | 6) Actual and Model predicted labels are printed for the test samples specified in the question, good. | 5/5 |
|  | Points | 53/60 |