EL2310 C++ Assignment Submission Instructions

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- Send all the header and source files you have created for running the program. Organize your files such that the project should be executable with only cmake and make commands. You don't need to send the dataset.

  When classification task is executed, the program should ouput the number of correct and incorrect classifications to *results.txt* file. An example *results.txt*:

```
Nbins:  40
TrainingDataPercentage:  70
Class Correct Incorrect
Corridor 45 25
Office 28 14
Toilet 32 9
```

- README.txt: A text file to include a brief report on how the program is implemented. Don't forget to include comments in your program at right places.
- DESCRIPTION.txt: Describe what your program does, and why it is useful in the scientific community.
- Write a brief report that includes (You can use Matlab or any other tool for generating the figures):
  - A figure that shows the relation between the accuracy of the classification and the number of histogram bins. For the figure, you can vary the number of bins as [10,20,30,60,90,120,180]. You should draw the per class accuracies as well as the average accuracy. For classification, is it better to have more details with more number of bins or vice a versa? Are some of the classes more challenging? Comment on the obtained results and whether color histograms are good features or not for classification.
  - For number of histogram bins = 30, a figure that shows the relation between the number of training data and the classification accuracy. You can vary the percentage of training data between [30,50,70,90,100]%. You should draw the per class accuracies as well as the average accuracy. Is it always better to have more training data? Comment on the obtained results.
  - Please comment about how to make the Dataset class more generic so that it can work with not only image data but different kinds of data.