Lab 5.2 CNN small dataset

* General info about the lab:
  + General information about CNNs.
  + Introducing data augmentation using generators.
  + Building a Convolutional network from scratch.
  + Reducing overfitting using dropouts.
  + Exploring effect of dropouts on different layers.

Considerations

* How hard is this?
  + Medium to hard
* Is it accessible to students with limited python knowledge?
  + Python programming is not the main focus. As most of the codes are provided
* How closely does this align with the lecture content?
  + Except the preprocessing part, the rest is aligned with the lecture contents
* Will they likely have covered the required material by the time we get to this point
  + Yes, as CNN has been already discussed in previous labs.
* Does the code run correctly ?
  + Yes
* Feel free to add pointers and content:
  + Student needs to download “Dog and cat” dataset from kaggle website
  + Train and test must be placed in proper directories so that they can be loaded.

**Ethic Question:**

How can overfitting be detrimental to society as it threatens the integrity of data-driven decisions in machine learning models and anyone who uses them?

# \*Exercises are added to the Collab Notebook