# CAPSTONE PROJECT

**Problem Statement:** CT Scan Image Classification using ResNet-50

Approach towards the problem statement:

1. **Collect the data:** Obtain the CT scan images and the corresponding labels (covid /non-covid). For our project data is given in the form of image with label as covid and non-covid.
2. **Pre-process the data:** Pre-process the data to prepare it for input to the deep learning model. This typically involves resizing the images to a fixed size, converting the images to a numerical representation (e.g., numpy arrays), and normalizing the pixel values.
3. **Split the data into training and validation sets:** Split the pre-processed data into a training set and a test set. The training set is used to train the model, while the test set is used to evaluate the performance of the model.
4. **Build the model:** Use the ResNet-50 architecture as a starting point and build the model. Make sure to freeze the weights of the pre-trained layers and only train the final layer.
5. **Train the model:** Train the model using the training set and validate the performance using the test set.
6. **Evaluate the model:** Evaluate the performance of the model on a test set that was not used during training or validation. Make use of metrics such as accuracy, precision, recall, and F1 score to evaluate the performance of the model.
7. **Deploy the model:** Once satisfied with the performance of the model, deploy it to a production environment for use in a real-world scenario.