USER GUIDE :

1) Download the application MAD_GRAD_Bhimireddy_Bhavya.zip file from GitHub.
2) Unzip the file and double click on the .xcodeproj file to open the project in Xcode.
3) When you open the project in Xcode, you can select the iPhone13 as your simulator device to view the application.
4) When you click on the run button you can see that the application is running and is launching on the simulator.
5) When the app opens on the simulator you can click on the image icon below to select an image from the library.
6) You can only select one image at a time.
7) When the image is selected, the predictions are printed on the screen with the percentage.

I haven't made the UI better as I was concentrating on the application.

Model Overview and Problem while developing the application :

The five levels that I used to train my model for my application are:
New Boxcar
Faded Boxcar
Corrosive Boxcar
Rusted Boxcar
Damaged Boxcar

The predictions are made when a new image is selected by the user through the application.
When the model is trained, it is tested using random pics in createML and the results are very accurate. But when the model was integrated in Xcode and tried to do the predictions I was able to provide good results.

I almost trained 4-5 datasets with lots of images to find that some images are even in the other level images and the results are very bad. At last I have used about 15 images for each level for training the data and used that in my xcode project and was seeing better results than with other datasets.

The reference of my code is from the website -
https://medium.com/datadriveninvestor/image-classifier-using-create-ml-core-ml-and-vision-framework-in-swift-345557960786
https://docs.getxray.app/display/XRAY/Testing+the+UI+of+iOS+apps+using+XCTest+and+XCUITest+in+Swift
When I tried to run the program initially it gave me an error when I'm running in macM1 but it worked perfectly with other systems. I tried to resolve the problem and successfully solved it.