Introduction:

- This project is mainly focused on implementing various computer enabled techniques to remove the burden of traditional attendence monitoring methods.
- So the work focused on project is to process the image of the class taken at particular instant and extracting the images of the students and comparing it with the stored data and if match is found, we will update the value in the csv file and mark the student as present along with the current date.

Dataset used:

- Now in early phase of project development, the dataset used was 5 Celebrity Faces Dataset 5 Celebrity Faces Dataset(link for dataset) which is available on Kaggle. Transfer learning was used on VGG16 model. The validation accuracy for the 5 Celebrity Faces Dataset came around 65%.

Proposed Methodoly:

- So in later phase of project development Resnet50 model was used to compute score of the image and the resultant 1*2048 numpy array was stored in csv file along with the label of the image.
- So the flow of project goes as per following steps:

1) Registration Process:

- Storing Face Data : The single image per student is passed to the model and 1*2048 numpy array is returned and the numpy array is stored along with the information asked during the registration process

2) Attendence Process:

- Face Detection: MTCNN (Multi-task Cascaded Convolutional Neural Network) Detector was used to detect and extract faces from the image.
- Face Recognition: The extracted faces are passed to the model for obtaining 1*2048 numpy array is obtained. The similarity between resultant array is compared with all the stored arrays. If similarity is more than some threshold (e.g. 0.6 or 0.7), then the label of the matched array is stored in the csv file along with the current date in csv file whose name is taken in attendance window.

The Video demo can be seen by clicking Here.