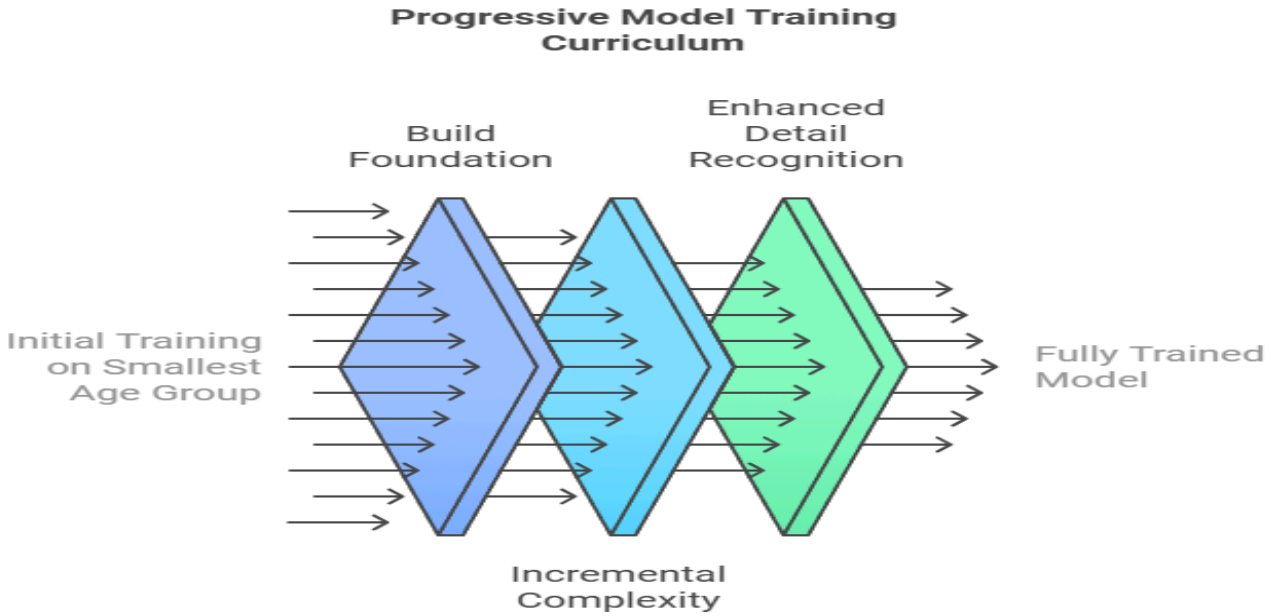
Project Report Task -2

Introduction:

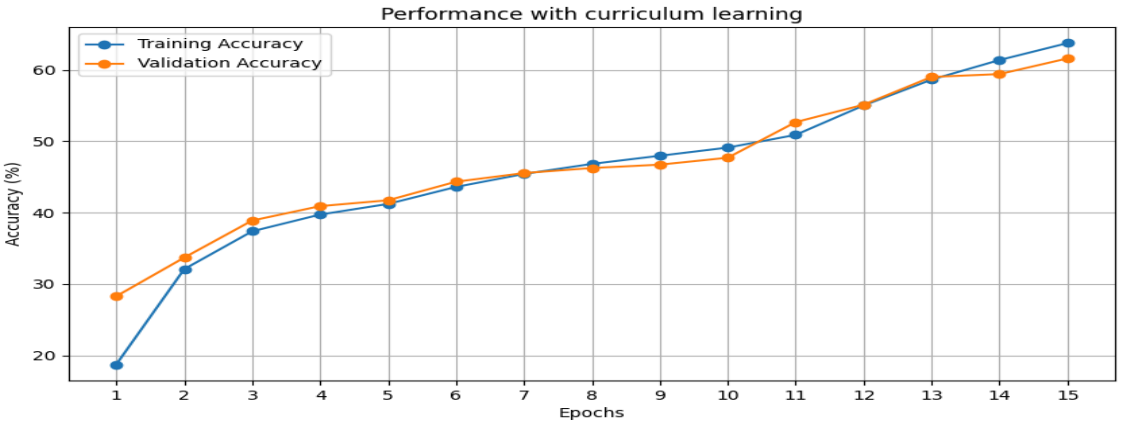
- For this project task-2, we started from the solution **Do_Naik_contrast**. We have used transformations - Acuity and Contrast Sensitivity from his Dataloader and implemented them in our task as two separate classes.
- The dataset used is **CIFAR-10** which has 60,000 images of resolution 32*32, the data is of 10 classes.
- We have used a custom-made SimpleCNN to make the training quicker and used the same to train on all the different training methodologies for fairness.

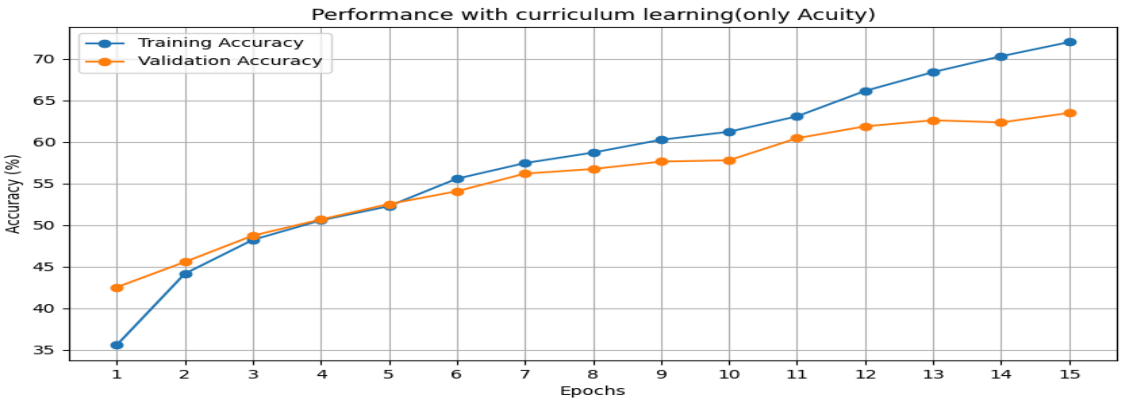
Implementation:

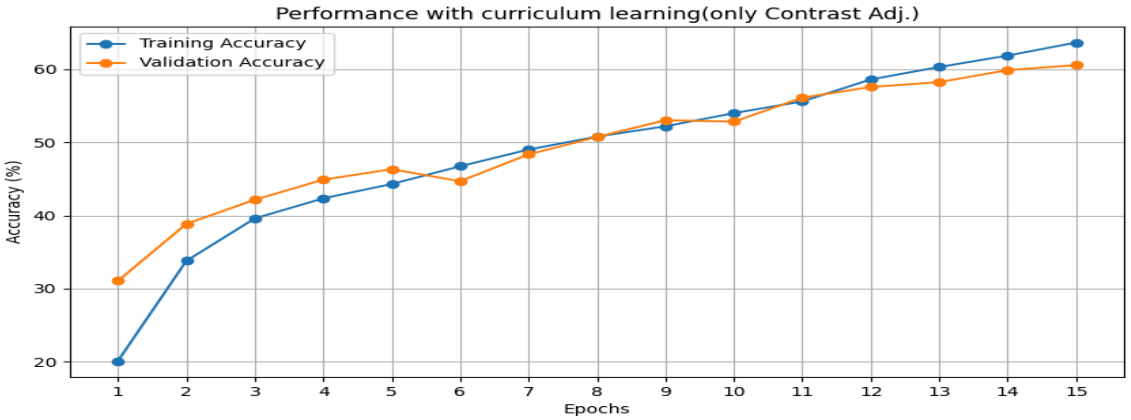
We have trained the network in 4 ways: 1. Both Acuity and Contrast transformations, 2. Only Acuity, 3. Only Contrast and 4. Without any transformations. For all the networks we have implemented a **developmentally plausible Curriculum**. We have used the Dataloader to generate data based on the age groups(3, 6, 12 months) from the Dataset. Since the data in the smallest age group has stronger effects of transformations defined as compared to higher age groups, details in the images are lost initially which are recovered over transformations of increasing age groups.
This enables the model to strongly build its training foundation and later start picking up complex information from the images.
We believe this setup simulates the development of infant vision over age.

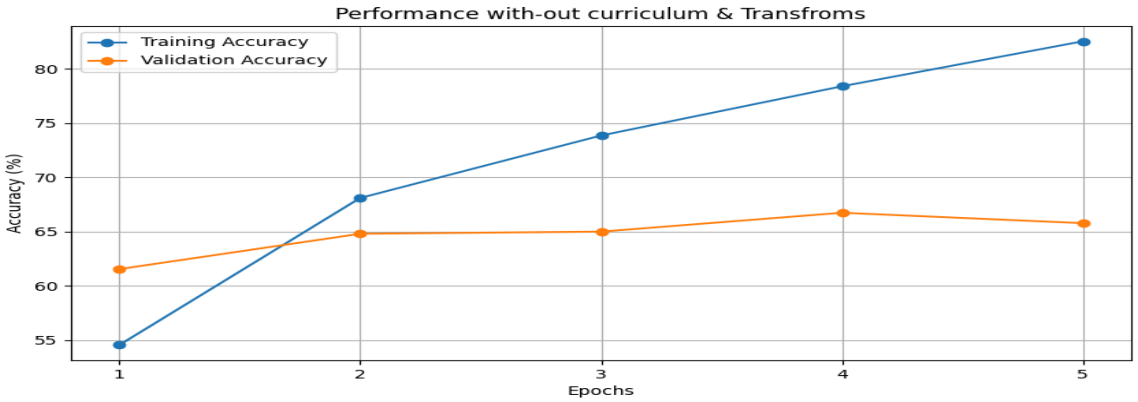


Epochs	Age group(in Months)
1-5	3
6-10	6
10-15	12









Results:
The model trained on Curriculum outperforms the model trained without the curriculum. (The epochs are varying only cause the model without curriculum considers the training over all the age groups once as an epoch)