# Project report

# Title of project: The Image Cartoonifier

Aim:To convert a given input image to another image having a cartoonish style.

Method/the process :

The key concept behind this project is convolution neural networks.Given 2 images ,let us say image 1 is the style image and image 2 is the input image , the input image can be converted using CNN as a base,into another image having the same style as the style image.This is called as Neurtal Style Transfer.

The coding language to be used is Python.

None of this can be done without basics.From week 1 I started building on basics ,learning from the resources given by the project mentors.

Week 1 : basics of python,pandas and numpy

These are two essential libraries for handling with data and making computation faster.

Assignment for week 1 : [SoC/SoCWEEK1.zip at main · may-06/SoC (github.com)](https://github.com/may-06/SoC/blob/main/SoCWEEK1.zip)

Week 2 and 3: Introduction to Machine Learning

Supervised Learning concepts: Linear Regression, Logistic Regression, Regularisation

We were given a practical overview as well.Coding exercises were given as a part of one of the resources which helped in understanding the idea of training a machine to interpret data to predict the output.

Assignment for week 2: [SoC/CORRECTED\_WEEK2 ASSIGNMENT.zip at main · may-06/SoC (github.com)](https://github.com/may-06/SoC/blob/main/CORRECTED_WEEK2%20ASSIGNMENT.zip)

Week 4 and 5:

Neural Networks

Convolutional Neural Newtorks

The topics covered constitute the main core of the project.Playlist links and summary links were given.

It also included the working of computer vision which involves image processing using CNN.

Assignment : [SoC/mod\_assi.py at main · may-06/SoC (github.com)](https://github.com/may-06/SoC/blob/main/mod_assi.py)

Given a database of images (pixel values and the image labels( Each image was a number)),a deep neural network was trained to predict the output(what the image rep.) for a test database consisting of pixel numbers.

Week 7 and 8 :

Handling big data with just numpy and pandas was pretty intensive(as you can see the prev assignment code).PyTorch had libraries to handle data and design neural networks in an efficient way.These 2 weeks dealt with PyTorch .No assignment was given

Week 10:

A paper on Neural Style Transfer was shared.The paper had a detailed explanation of how exactly Neural Style Transfer works and the methods/strategies involved .

I will soon start coding for the final project using all the concepts I’ve learned so far.