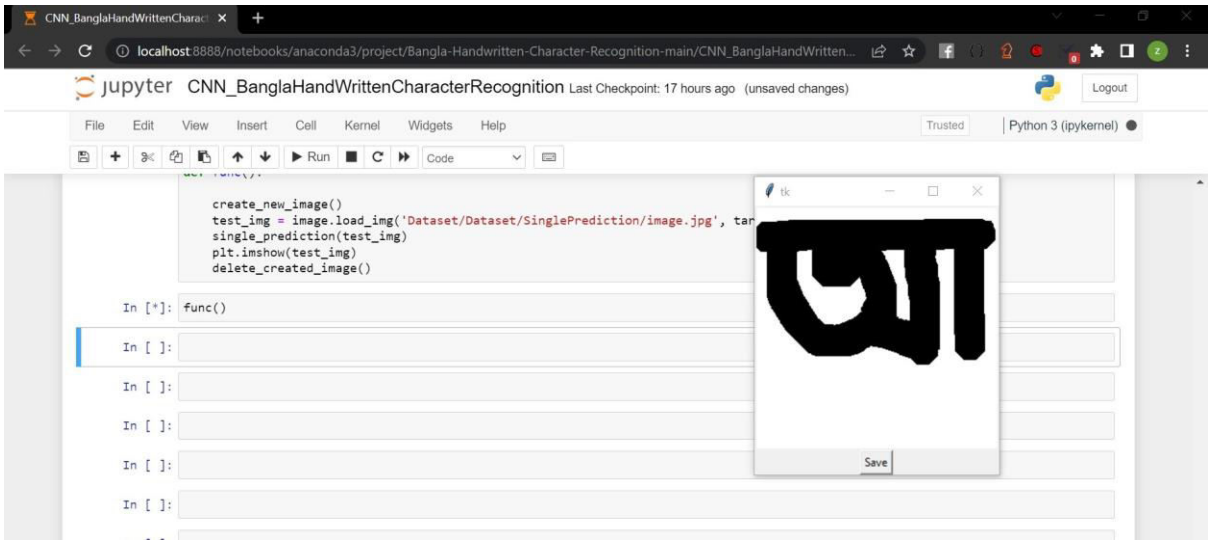
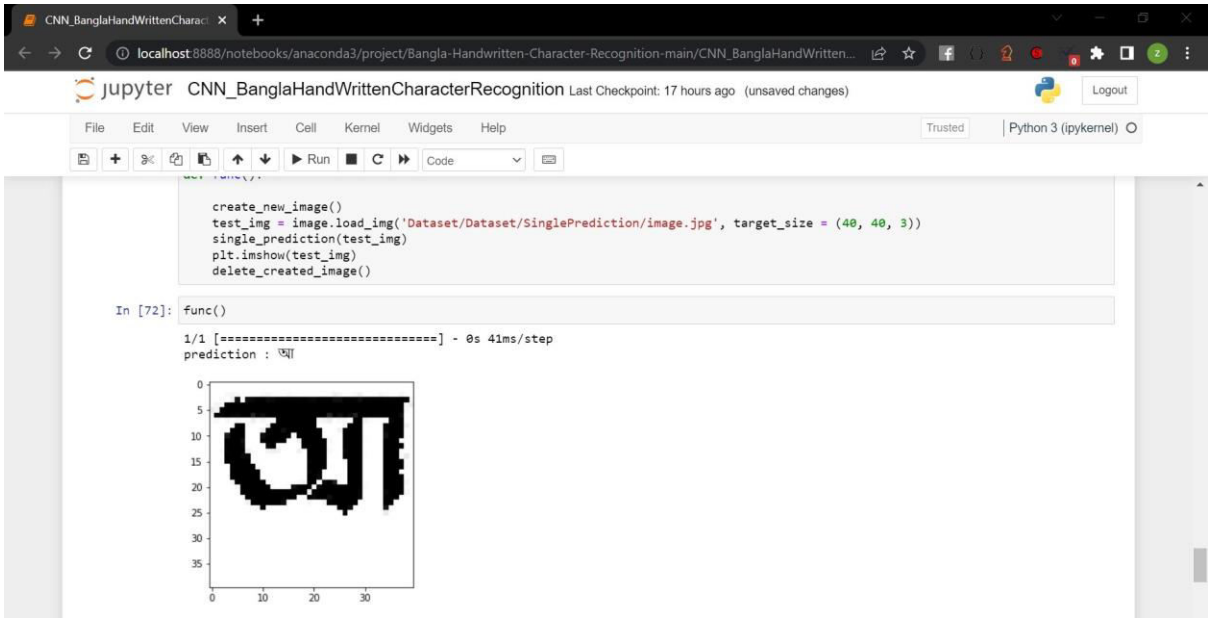
Introduction: The project is about to recognize a handwritten bangla alphabet. We can give the input by using GUI (Graphical User Interface) or the urls of the image file (screenshots) so that it can recognize the alphabet according to trained data. It's a project of artificial neural networks.

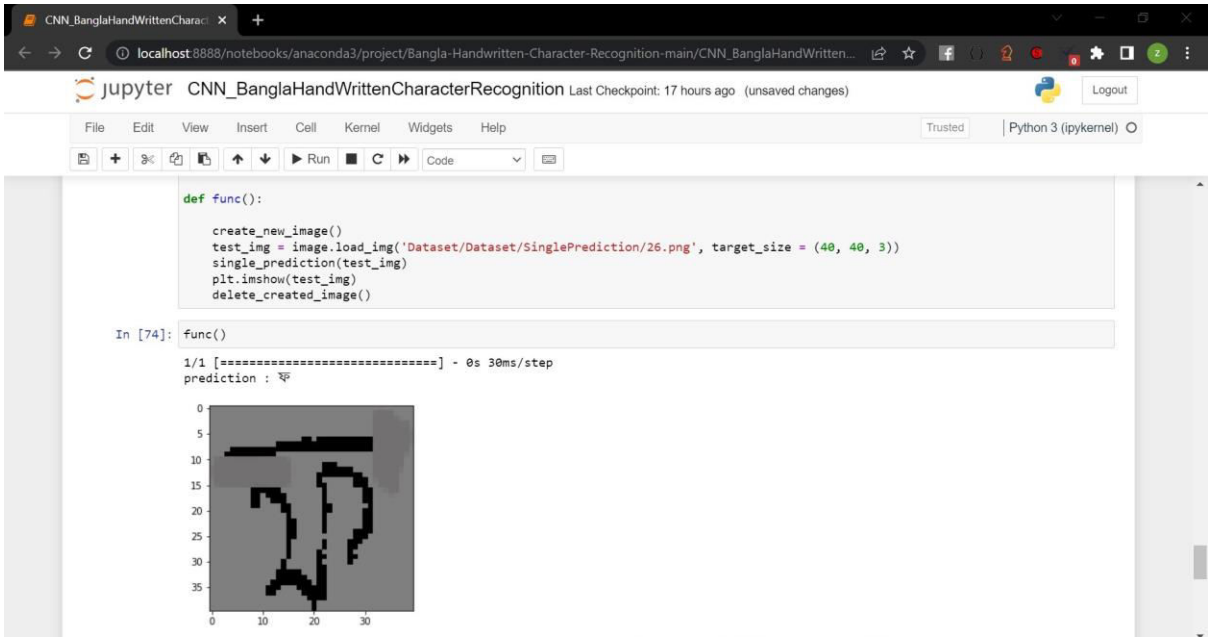
Description: We use CNN (Convolution Neural Network) model. And we save the model to disk as json file. We have 12000 train data of 50 classes as we all know there are 50 characters in Bangla alphabet. And also 3000 test data of 50 classes. And the batch size is 32. So the steps_per_epoch is (12000 / 32) = 375 and validation_steps is (3000 / 32) = 93.75. By using the ceiling function it'll be 94. After training the dataset we will generate a GUI to give the input which should be recognized by the system. Then we'll save it and give the saved urls to our function to recognize the character. After doing the operation it'll remove the current image from the folder where we saved it. Also we can give the direct url of the screenshots images to our function to recognize the alphabet. Here some screenshots are added to further understandings:



a) Giving input using GUI(Graphical User Interface)



b) After saving the input and closing the GUI



c) Giving input using direct url

Here some attached screenshots will help to understand what I wanted to do in my project.

Conclusion: In this Machine Learning(ML) project I tried to make a system which can be helpful to evaluate a learning phase for students, especially childrens who are trying to learn to write bangla. By using this system a person can evaluate whether what he wants to write is correct or not in the general Bengali form of the alphabet. So it'll be helpful for the beginners of the bengali childrens as well as the foreigners who want to learn how to write in bengali.