TOPIC: AN EFFICIENT METHOD FOR HANDWRITTEN DIGIT RECOGNITION USING CNN

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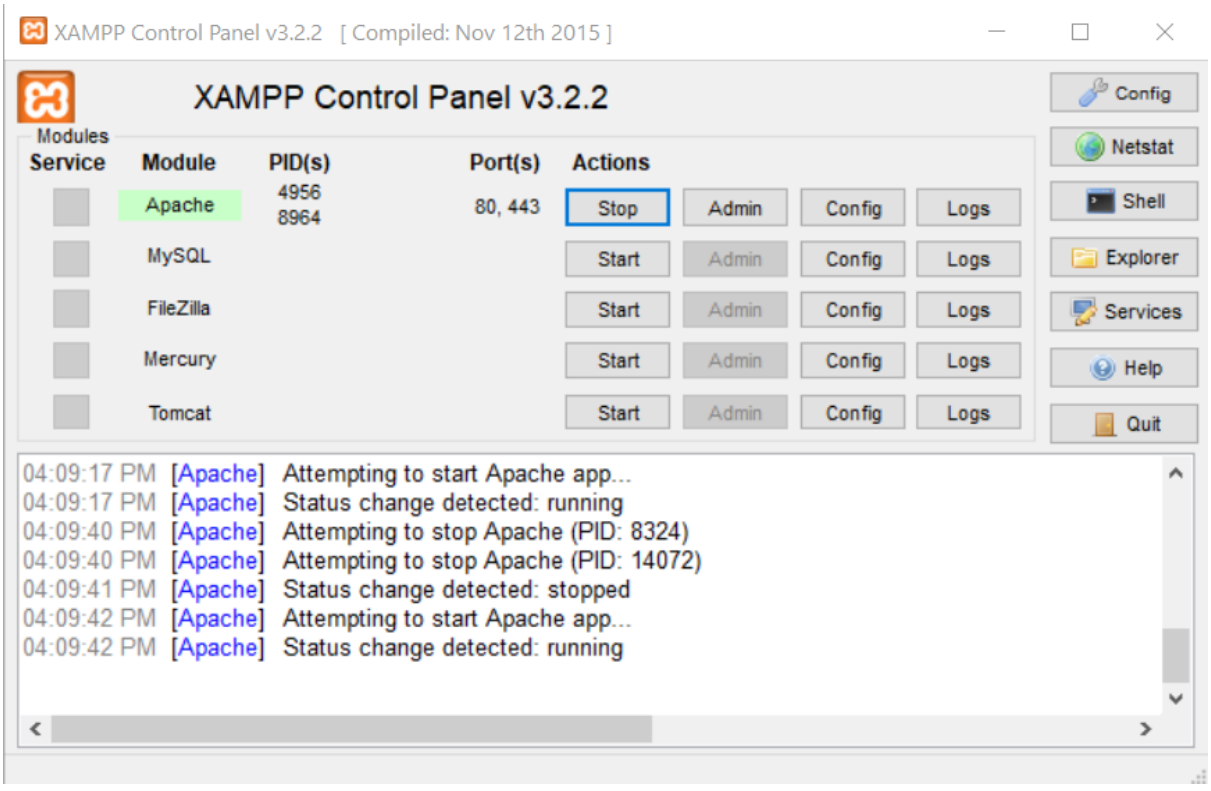
- **Software Usage:**

  The software predicts any handwritten single digit character drawn on the HTML canvas.

- **How to use the software?**

  Step1: Install all the requirements specified in the 'requirements.txt' preferably in a virtual environment through pip install requirements.txt.

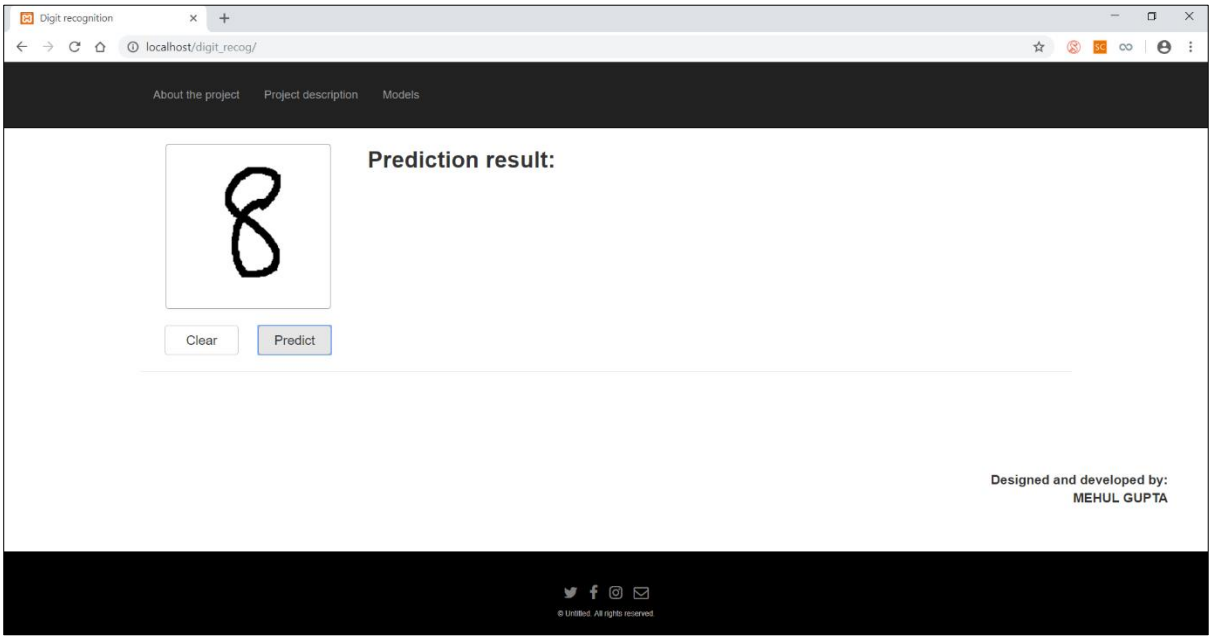
  Step2: Run any server. Here, I have used Xampp server. Open Xampp control panel and then run Apache. You will see a port no. assigned to it if it successfully runs.



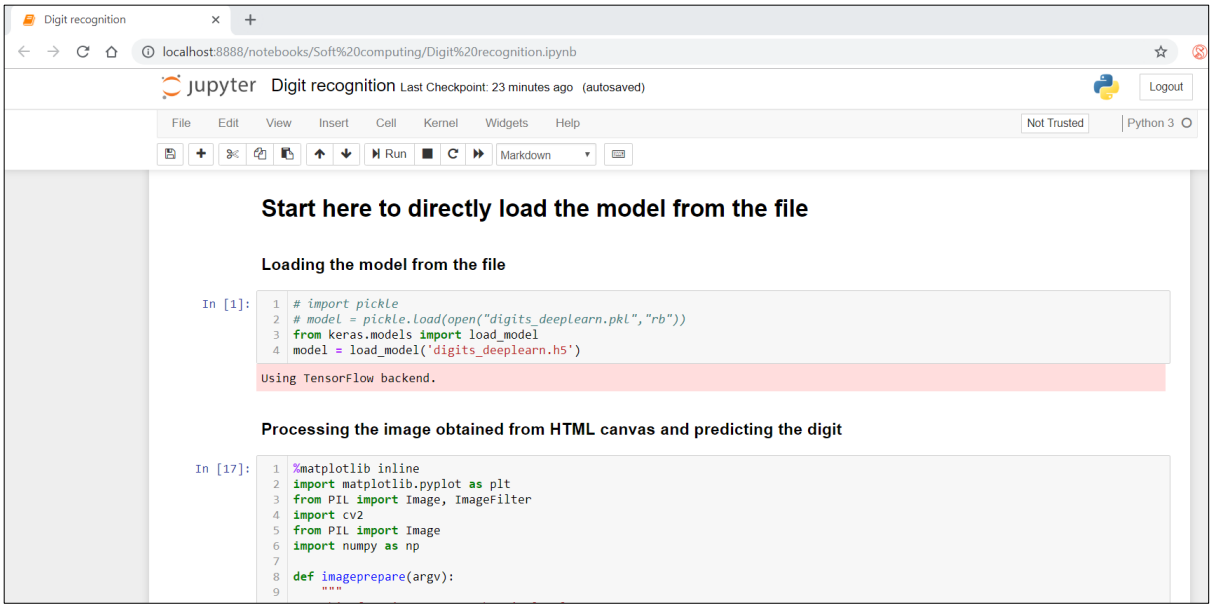
Step3: Place the folder entitled ‘digit_recog’ under Xampp/htdocs. In my case the directory is ‘C:\xampp\htdocs\’.

Step4: Open any browser and type ‘localhost\digit_recog’

Step5: Draw any digit on the canvas and click on ‘Predict button’. Click the ‘Clear’ button to clear the canvas.



Step6: Activate the virtual environment (if installed) and open the jupyter notebook, then open the ‘Digit recognition.ipynb’ notebook.



Step7: If you want to skip the training part, directly load the model by running the specified marked cell. This will load the model from the file 'digits_deeplearn.h5'.

Step8: Run the cells below it to process the image obtained and predict the image.

Step9: If any Arabic digit has to be predicted, run the 'Arabic Predictions.ipynb' and follow the Steps7-8.

Step10: The predicted digit will appear as the output of the program.

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