DA5402 - Assignment 3

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To decouple the UI from the model prediction, we create and run an `api.py` file that runs a REST API using FastAPI. This loads the `model.pkl` file when it is run and starts a `uvicorn` server at `127.0.0.1:7000`.

When `app.py` is run, the UI (i.e., the canvas) is opened. The user draws a digit on the canvas and hits the 'Predict Digit' button. The 28×28 image is flattened into a 1D array and normalized to lie in the interval $[0, 1]$.

The existing `predict` function in `app.py` is modified to use the `requests` library to 'POST' the image data in JSON format to the REST API running at `127.0.0.1:7000`. The API uses the loaded model to make a digit prediction based on the posted image data. The prediction is returned in JSON format. The endpoint for the API is `http://127.0.0.1:7000/predict`. The UI unpacks the JSON response and displays it for the user in a message box. The user can then close the message box, clear the canvas, and repeat the process again.
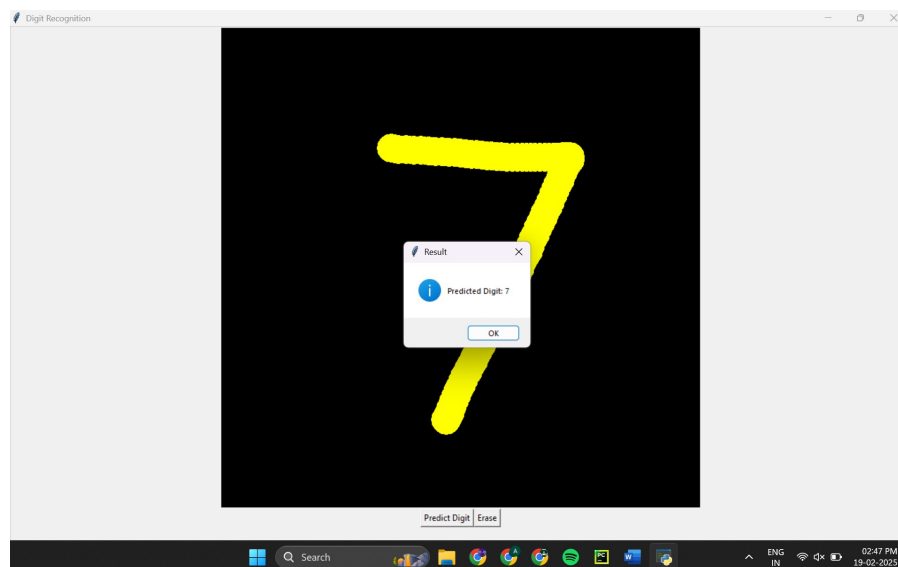

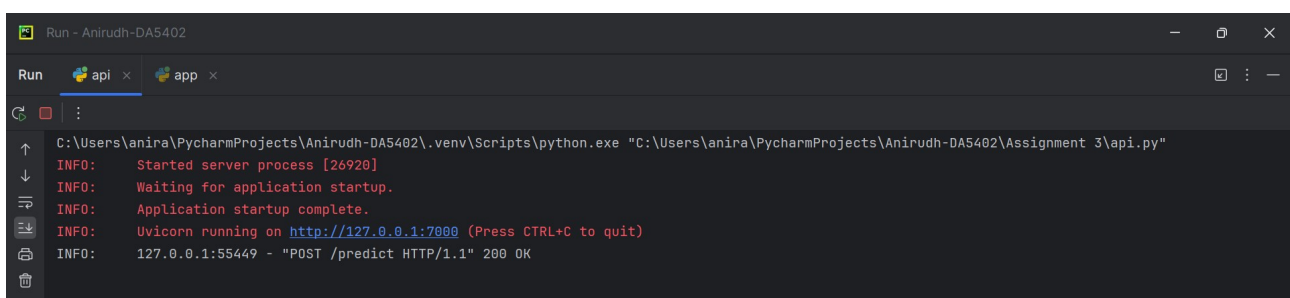Figure 1: The UI showing the drawn digit and the prediction returned from the API

Figure 2: The status of the API showing the successful prediction