Week 11

Project: Create a handwritten digit recognition application on STM32

PINTÉR ORSOLYA

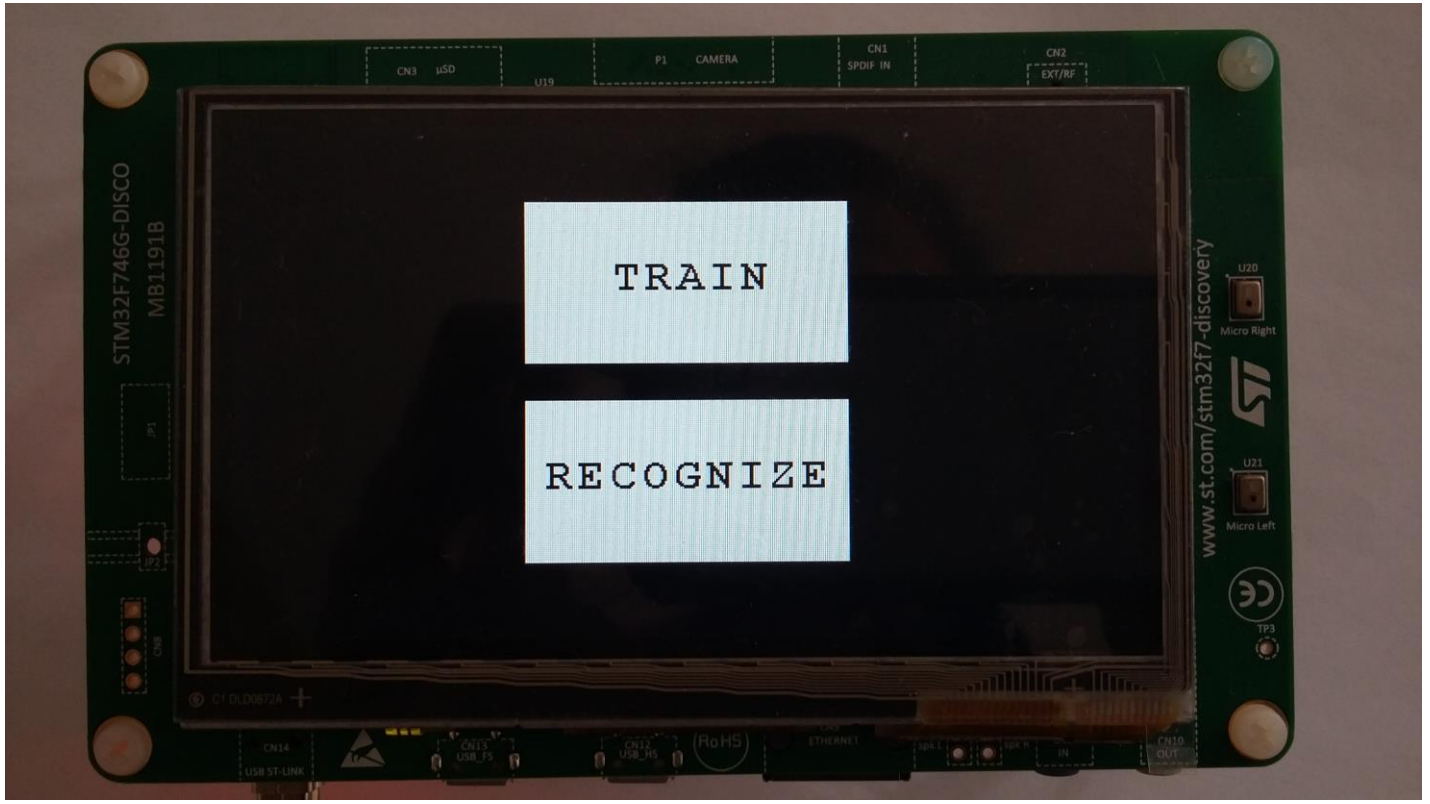
Motivation and specifications

Getting to know the concept of artificial neural networks for handwriting recognition

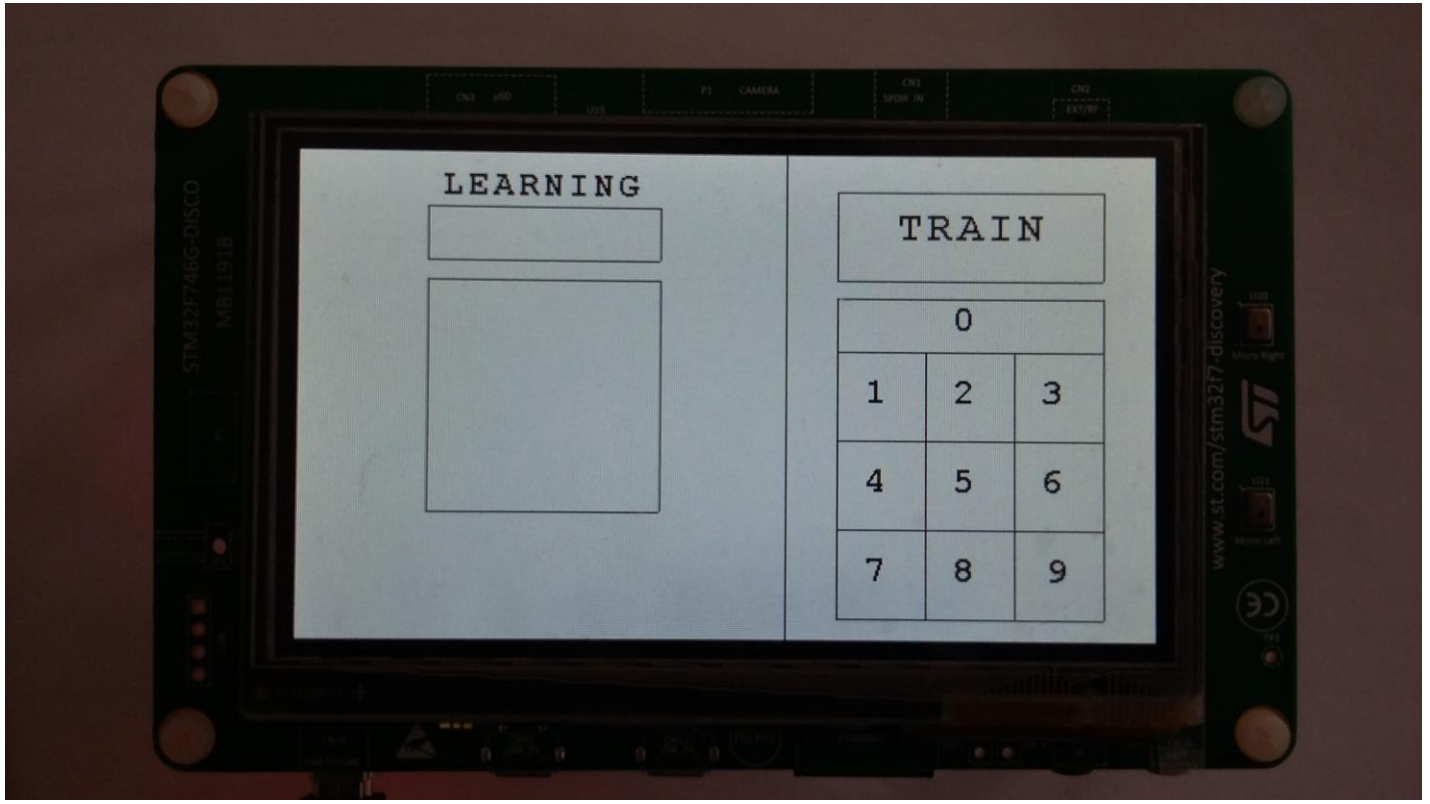
Building on acquired knowledge in C programming

Building on the touchpad functionalities of the STM32 board

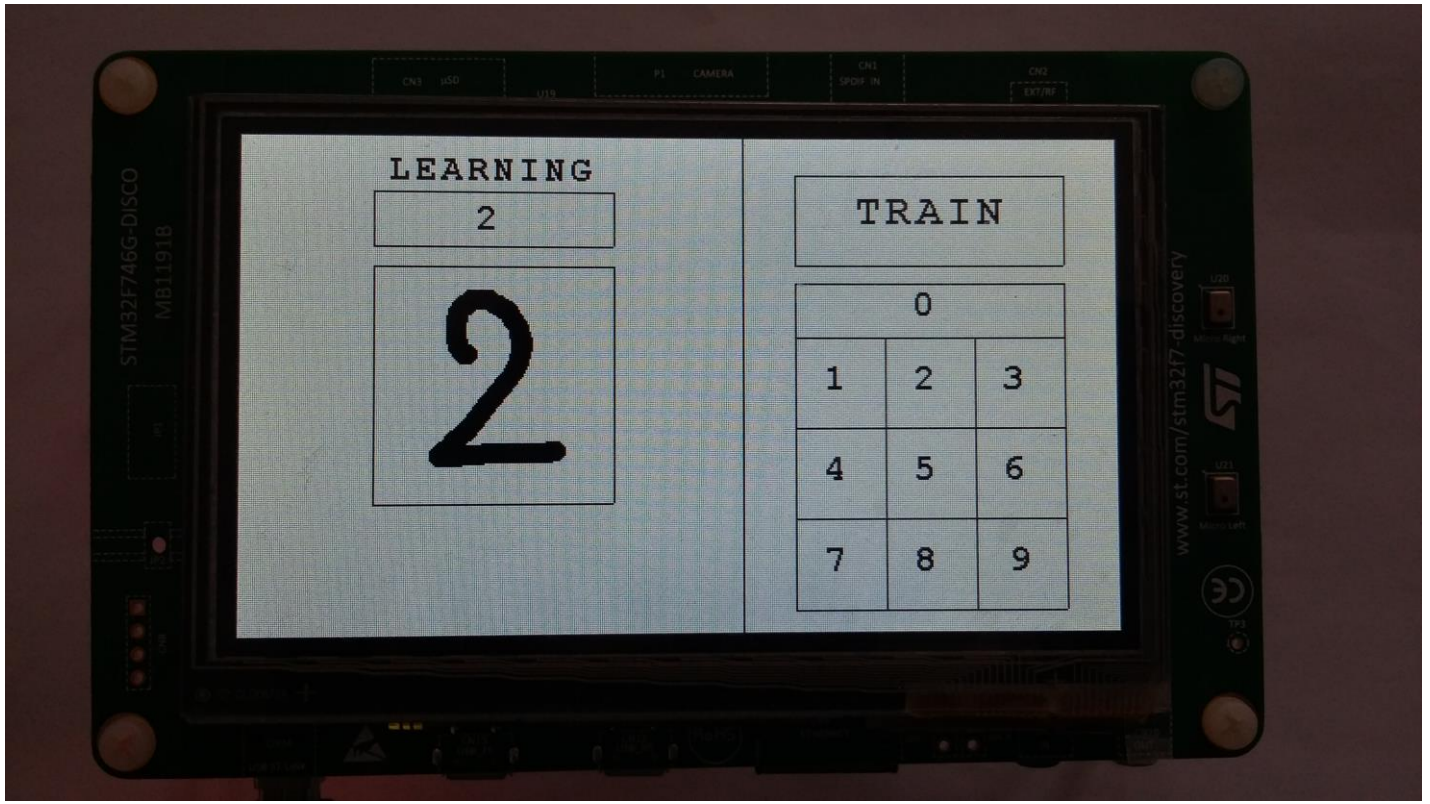
Implementation: Start screen



TRAIN mode



TRAIN mode


LEARNING
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TRAIN
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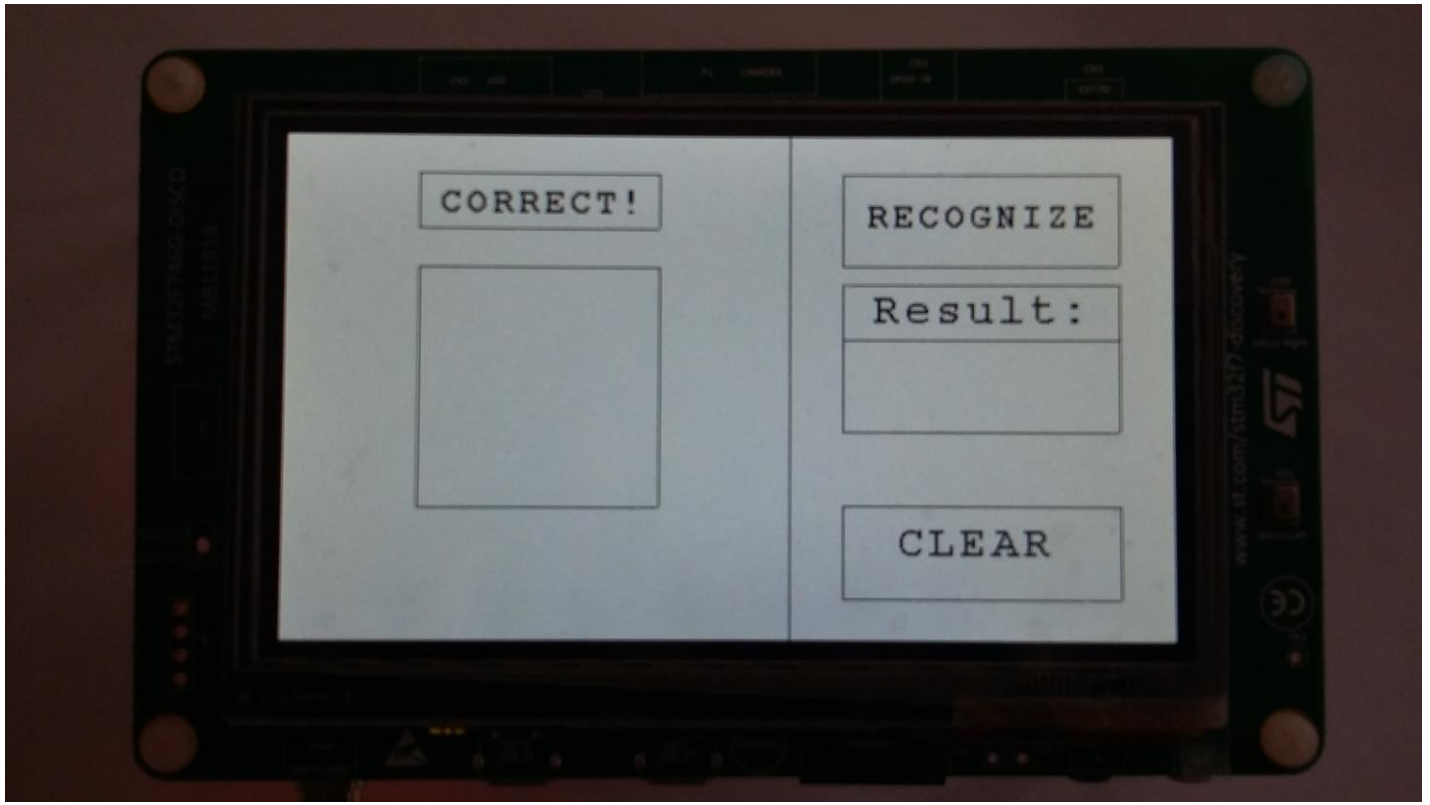
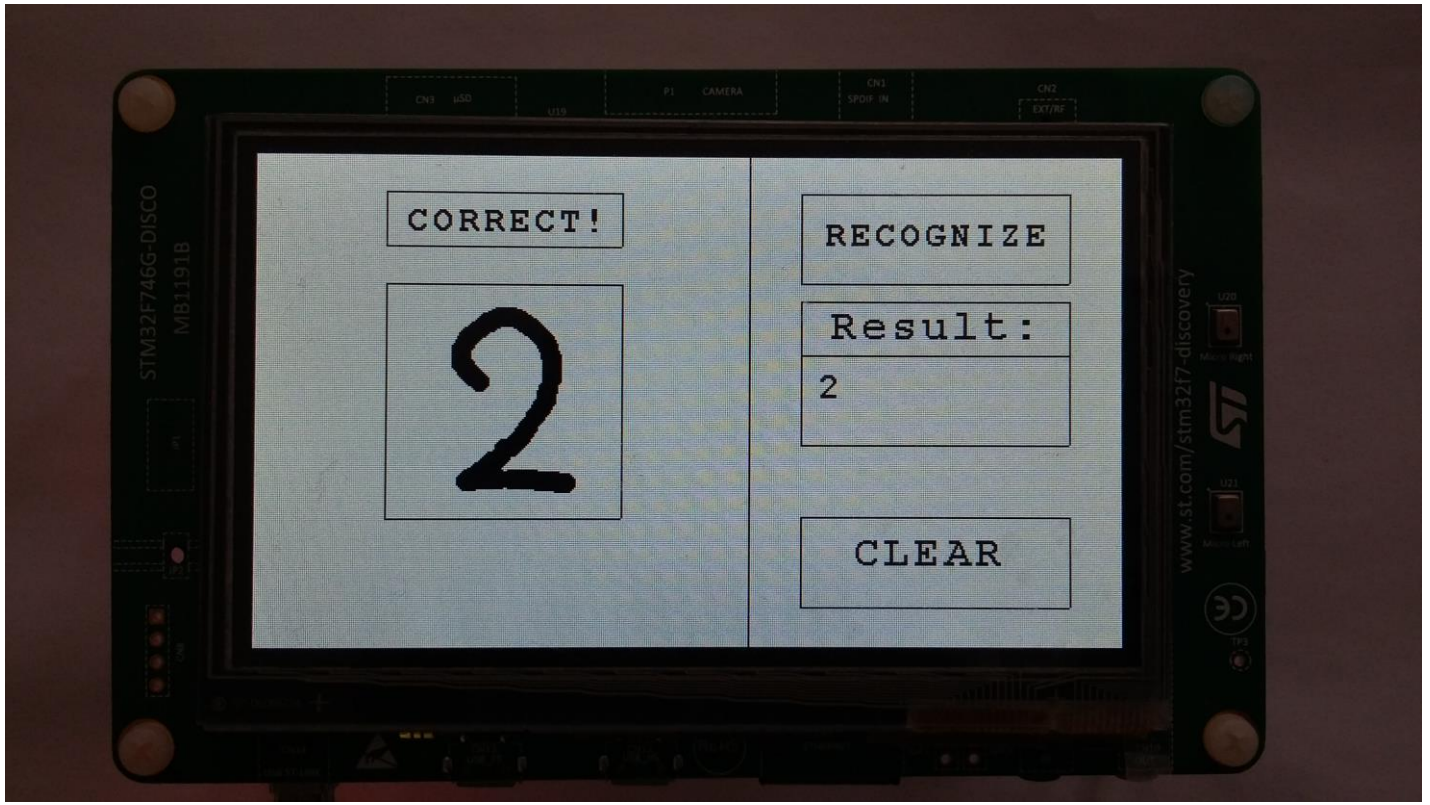
STM32F746G-DISCO
MB11918
www.st.com/stm32f7-discovery

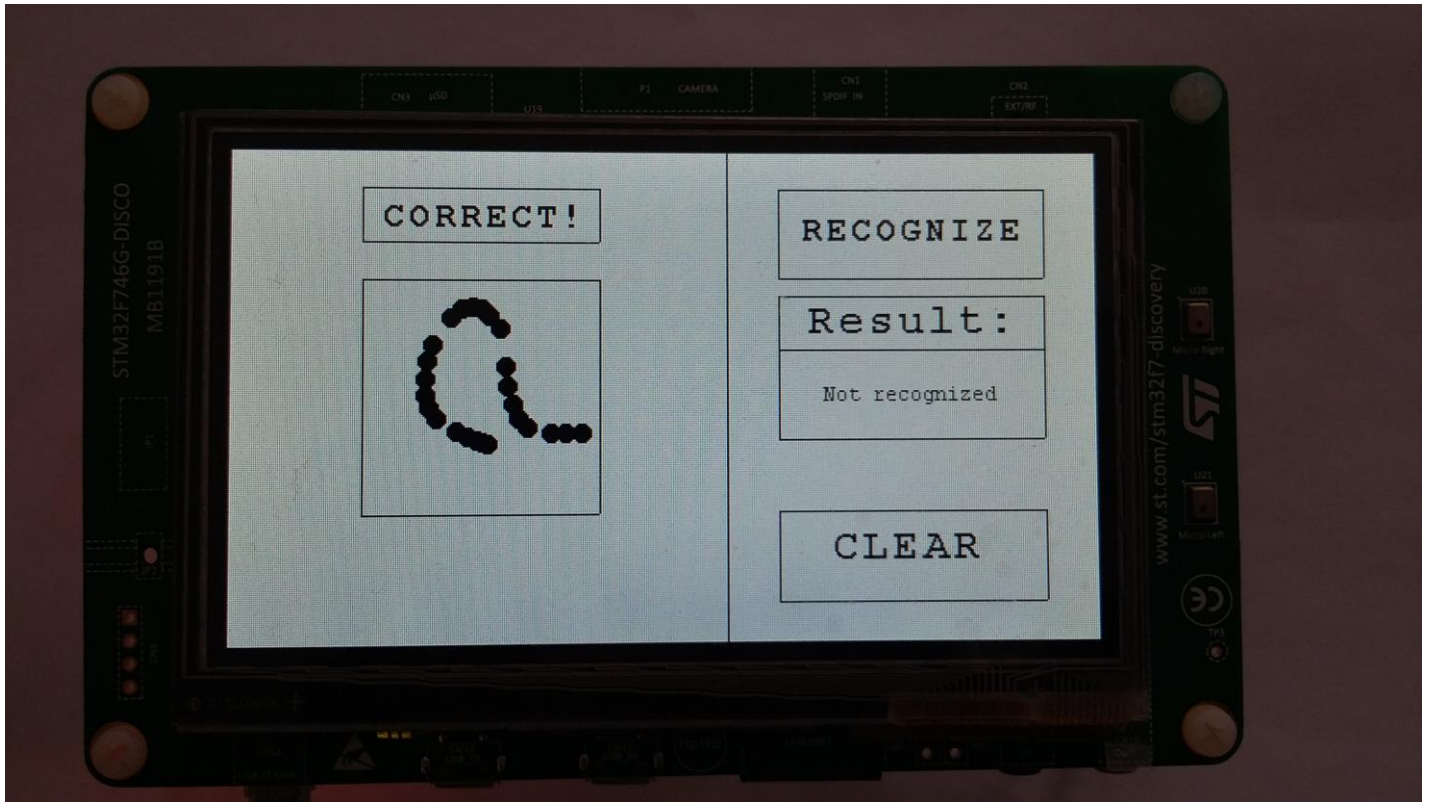
RECOGNIZE mode



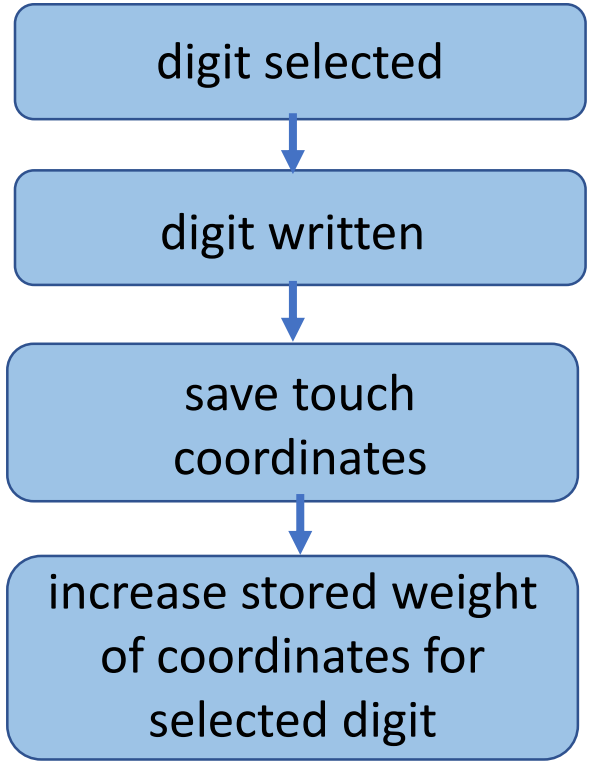
RECOGNIZE mode



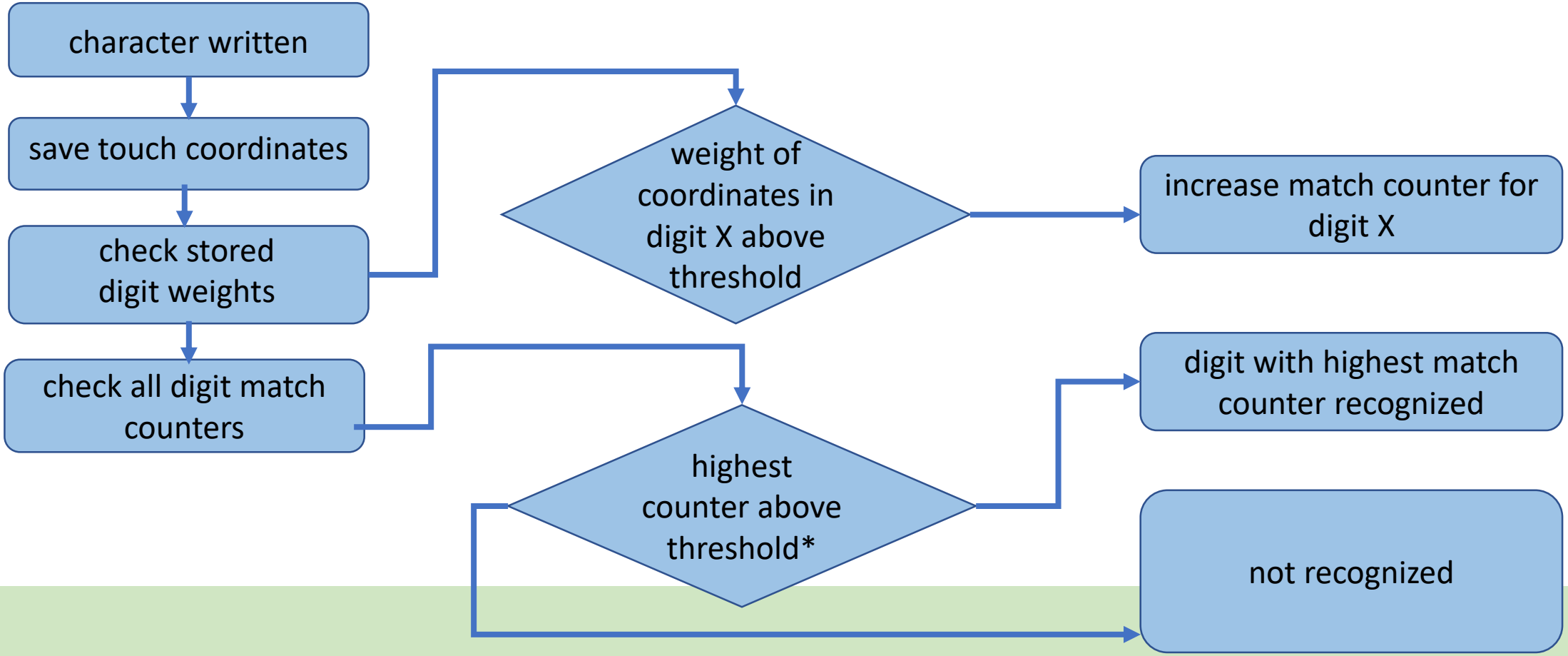
RECOGNIZE mode



Algorithm / working method TRAIN mode



Algorithm / working method RECOGNIZE mode



Planned improvements and further study

- Study the theory of artificial neural networks for handwriting recognition, build on existing models
- Revisit algorithm and increase efficiency
- Revisit data structures and decrease memory usage
- Adjust weights and threshold values
- Measure error rate and improve accuracy
- Save training data for later runs
- Send data to PC for processing