Lab 18 Optical Character Recognition

練習目的	提供的程式碼	需要的開發環境/安裝套件	執行指令與重點說明
Optical Character Recognition **1. Rectangle** **2. Split image** **3. Shrink image** **4. Vector transformation**	**VS2017/2022_C++:** NImgProcess.h NImgProcess.cpp NObject.h NObject.cpp **VS2017/2022_C#:** MyApp Project	Visual Studio 2017 以上 	**MyApp.exe** **MyApp Project** ✓ Click “Char_Segment” to Split character image. ✓ Click “MLP Training” to Shrink character image to 10 x 15 pixel size. Then transfer the image to 150 elements feature vector. **NImgProcess.h** ✓ Add three new member functions. ✓ Split_Image(), Small_Transform(), FromImageToVector().

			NObject.h ✓ Add one new member function. ✓ Rectangle ()
Optical Character Recognition **1. MLP training** **2. MLP classify/inference** **3. MLP save network** **4. MLP load network**	**VS2017/2022_C#:** MyApp Project MLP.cs	Visual Studio 2017 以上 	**MyApp.exe** **MyApp Project** ✓ Click “MLP Training” to learn the parameters of MLP network. ✓ Click “OCR Jog” to classify the character one by one. ✓ Click “OCR All” to classify all the characters. ✓ Click “OCR All” to classify all the characters. ✓ Click “Save Network” to save the trained parameters of MLP network. ✓ Click “Load Network” to load the trained parameters of MLP

			network. **MLP.cs** ✓ number_of_layers = 3; only one hidden layer. ✓ number_of_input_nodes = 150; transfer the 10 x 15 pixel character image to feature vector in this case. ✓ number_of_output_nodes = 16; the Unicode is used for 16 bits data structure (2 bytes). ✓ Add two new member functions: save_network() and load_network().