

## ReadMe

1. To run the project, make sure you have all the following prerequisites installed.

```
numpy==1.25.2
pandas==2.1.2
scikit_learn==1.3.1
tensorflow==2.14.0
tensorflow_intel==2.14.0
```

Figure 1: List of prerequisites to run the problem

2. Unzip the contents in the code folder and the dataset into a single folder.

```
C:\Project
├── DT.py
├── RF.py
├── ANN.py
├── CNN.py
├── data.csv
└── ...
```

Figure 2: Example directory structure to execute the project

3. To run any of the models, open the respective .py file through VSC IDE (or other equivalent IDEs).

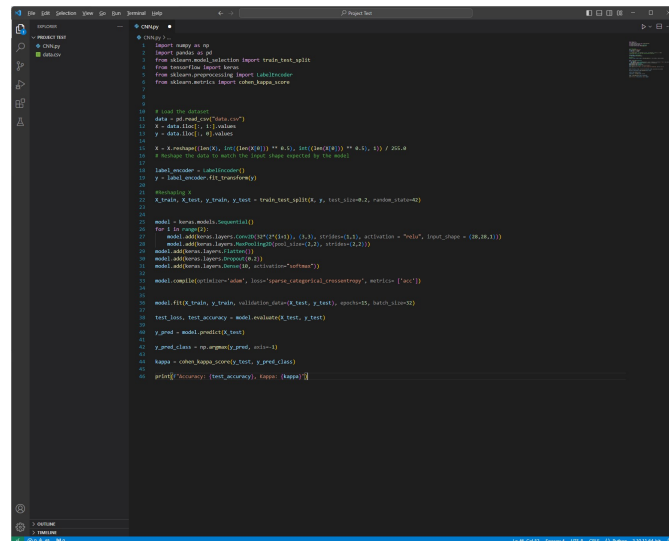
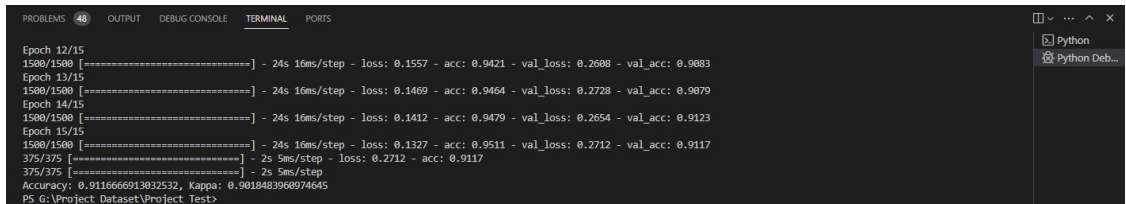


Figure 3: IDE panel with the opened file

- Click F5 to run the model. A successful run should return the respective Accuracy and Cohen Kappa scores of the model in evaluating a set of test data `x_test` and `y_test`.



The screenshot shows a VS Code terminal window with the following output:

```
PROBLEMS 48 OUTPUT DEBUG CONSOLE TERMINAL PORTS
Epoch 12/15
1500/1500 [=====] - 24s 16ms/step - loss: 0.1557 - acc: 0.9421 - val_loss: 0.2608 - val_acc: 0.9083
Epoch 13/15
1500/1500 [=====] - 24s 16ms/step - loss: 0.1469 - acc: 0.9464 - val_loss: 0.2728 - val_acc: 0.9079
Epoch 14/15
1500/1500 [=====] - 24s 16ms/step - loss: 0.1412 - acc: 0.9479 - val_loss: 0.2654 - val_acc: 0.9123
Epoch 15/15
1500/1500 [=====] - 24s 16ms/step - loss: 0.1327 - acc: 0.9511 - val_loss: 0.2712 - val_acc: 0.9117
375/375 [=====] - 2s 5ms/step - loss: 0.2712 - acc: 0.9117
375/375 [=====] - 2s 5ms/step
Accuracy: 0.9116666913032532, Kappa: 0.9018483960974645
PS G:\Project Dataset\Project Test>
```

Figure 4: Example result output