Project Development Phase
Performance Test

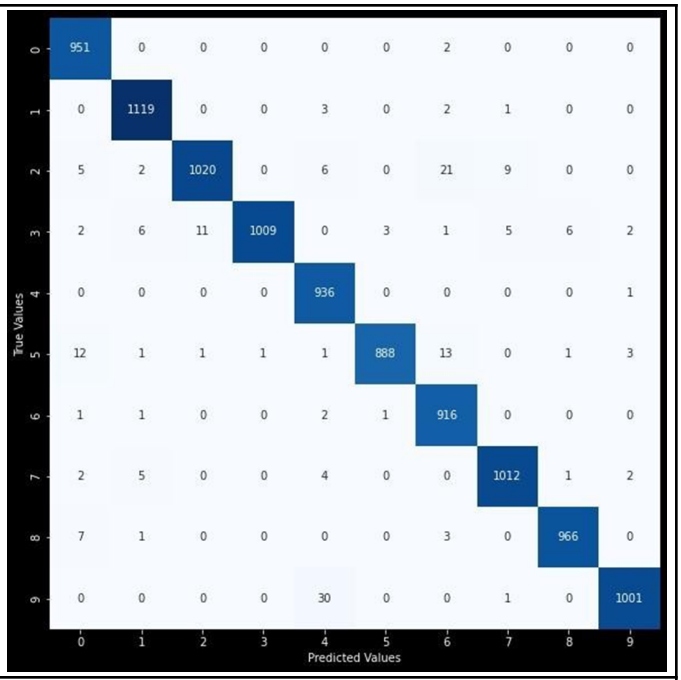
Date	18 November 2022
Team ID	PNT2022TMID47342
Project Name	A Novel method for Handwritten digit Recognition
Maximum Marks	10 Marks

Model Performance Testing:

S.No.	Parameter	Values	Screenshot

1.	Model Summary	Model: ”sequential”	`model.summary()`
			`Model: "sequential_17"`
			`Layer (type) Output Shape Param #`
			`conv2d_44 (Conv2D) (None, 26, 26, 64) 640`
			`max_pooling2d_34 (MaxPoolin g2D) (None, 13, 13, 64) 0`
			`conv2d_45 (Conv2D) (None, 11, 11, 64) 36928`
			`max_pooling2d_35 (MaxPoolin g2D) (None, 5, 5, 64) 0`
			`conv2d_46 (Conv2D) (None, 3, 3, 64) 36928`
			`max_pooling2d_36 (MaxPoolin g2D) (None, 1, 1, 64) 0`
			`flatten_4 (Flatten) (None, 64) 0`
			`dense_8 (Dense) (None, 64) 4160`
			`dense_9 (Dense) (None, 32) 2080`
			`dense_10 (Dense) (None, 10) 330`
			`Total params: 81,066`
			`Trainable params: 81,066`
			`Non-trainable params: 0`

2.	Accuracy	Training Accuracy - 0.99
		
		Validation Accuracy -0.98
			`metrics = model.evaluate(x_train, y_train, verbose = 0)`
			`print("Metrics(Train loss & Train Accuracy):")`
			`print(metrics)`
			`Metrics(Train loss & Train Accuracy):`
			`[0.02841065637767315, 0.9915833473205566]`
			`metrics = model.evaluate(x_test, y_test, verbose = 0)`
			`print("Metrics(Test loss & Test Accuracy):")`
			`print(metrics)`
			`Metrics(Test loss & Test Accuracy):`
			`[0.722084105014801, 0.9898999929428101]`

3.	Metrics	Confusion Matrix	
4.	Metrics	Classification Model	

	precision	recall	f1-score	support
0	1.00	0.97	0.98	980
1	0.99	0.99	0.99	1135
2	0.96	0.99	0.97	1032
3	0.97	1.00	0.98	1010
4	1.00	0.95	0.98	982
5	0.96	1.00	0.98	892
6	0.99	0.96	0.97	958
7	0.99	0.98	0.99	1028
8	0.99	0.99	0.99	974
9	0.97	0.99	0.98	1009
accuracy			0.98	10000
macro avg	0.98	0.98	0.98	10000
weighted avg	0.98	0.98	0.98	10000