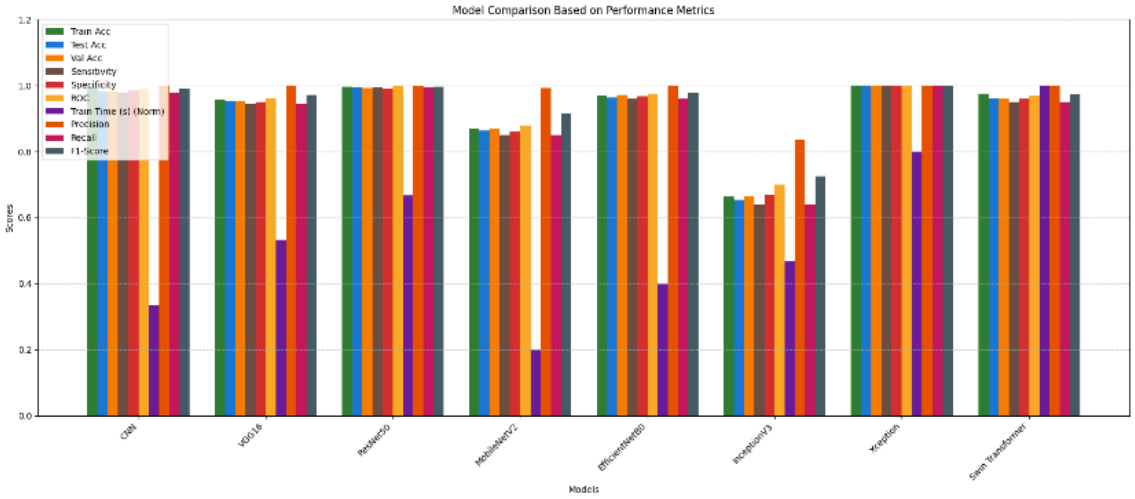
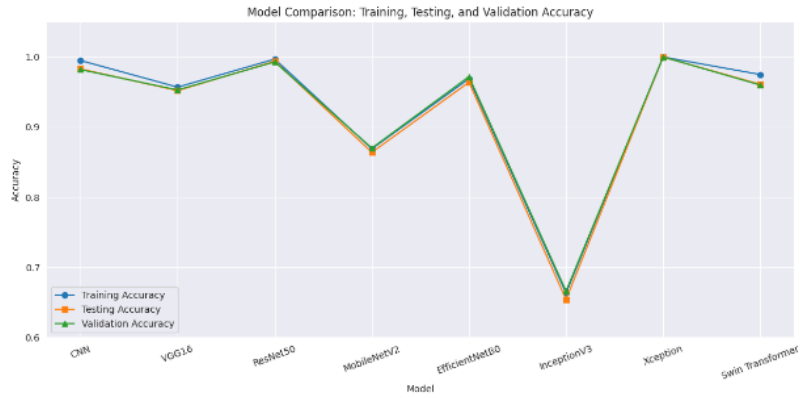
Model results

Model	Training Accuracy	Testing Accuracy	Validation Accuracy	Training time(s)
CNN	0.9948	0.9832	0.9819	500.320
VGG16	0.9573	0.9516	0.9527	800.030
RestNet50	0.9973	0.9944	0.9927	1000.510
MobileNetV2	0.8697	0.8644	0.8700	300.220
EfficientNetB0	0.9690	0.9643	0.9715	600.360
InceptionV3	0.6629	0.6535	0.6664	700.410
Xception	1.000	1.000	1.000	1200.230
Swin Transformer	0.9745	0.9610	0.9602	1500.950

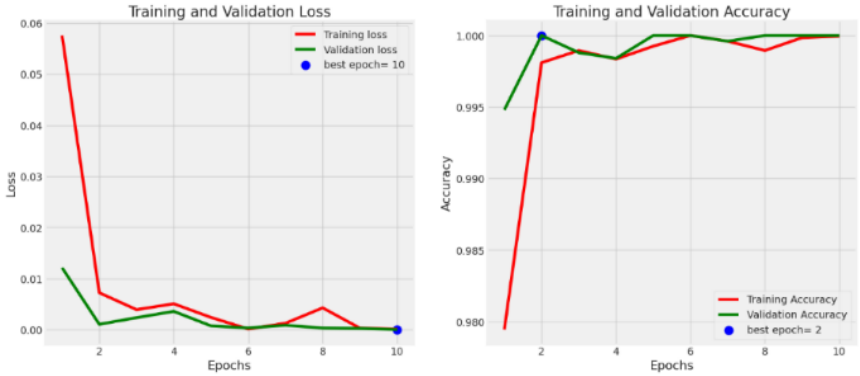




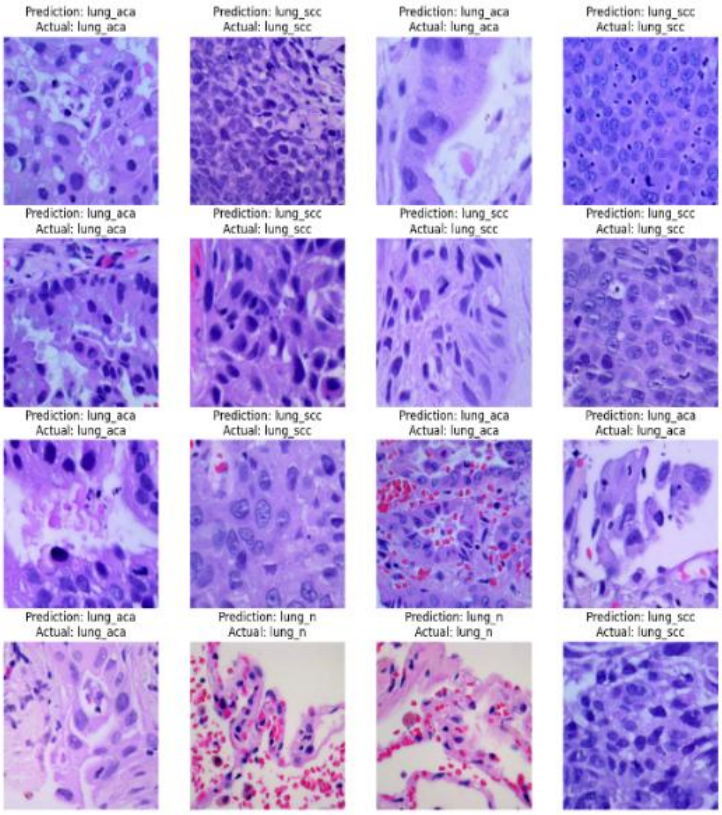
Model	**Sensitivity**	**Specificity**	**AUC (ROC)**	**Precision**	**Recall**	**F1-score**
CNN	0.980	0.985	0.990	1.000	0.980	0.990
VGG16	0.945	0.950	0.962	1.000	0.945	0.972
ResNet50	0.995	0.990	0.998	0.999	0.995	0.997
MobileNetV2	0.850	0.860	0.880	0.992	0.850	0.915
EfficientNetB0	0.960	0.968	0.975	1.000	0.960	0.980
InceptionV3	0.640	0.670	0.700	0.830	0.640	0.725
Xception	1.000	1.000	1.000	1.000	1.000	1.000
Swin Transformer	0.950	0.960	0.970	1.000	0.950	0.974

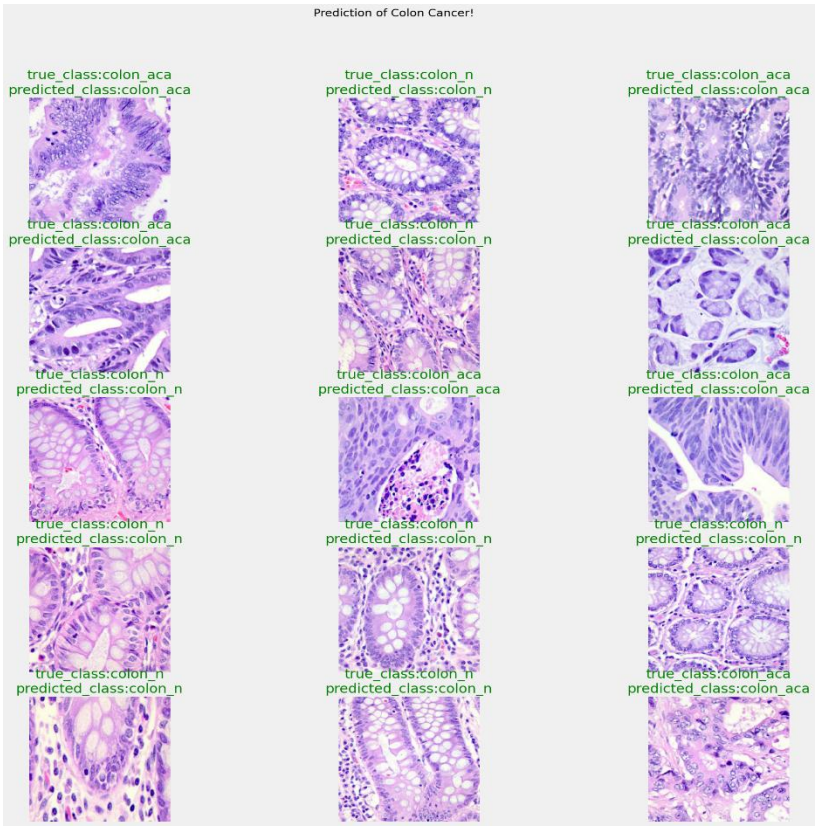
Class	Metric	Xception	CNN	VGG16	ResNet50	MobileNetV2	EfficientNetB0	InceptionV3	Swin Transformer
Colon Adenocarcinoma	Precision	1.00	0.99	0.94	0.99	0.87	0.96	0.68	0.99
	Recall	1.00	1.00	0.96	1.00	0.78	1.00	0.49	1.00
	F1-score	1.00	0.99	0.95	1.00	0.82	0.98	0.57	0.99
Colon Benign Tissue	Precision	1.00	1.00	0.98	1.00	0.85	1.00	0.62	1.00
	Recall	1.00	0.99	0.97	0.99	0.88	0.97	0.73	0.99
	F1-score	1.00	0.99	0.98	1.00	0.87	0.99	0.67	0.99
Lung Adenocarcinoma	Precision	1.00	0.95	0.92	0.98	0.82	0.97	0.64	0.95
	Recall	1.00	0.98	0.90	1.00	0.82	0.88	0.60	0.98
	F1-score	1.00	0.97	0.91	0.99	0.82	0.92	0.62	0.97
Lung Benign Tissue	Precision	1.00	1.00	0.99	1.00	0.97	0.98	0.64	1.00
	Recall	1.00	0.99	1.00	1.00	0.96	1.00	0.66	0.99
	F1-score	1.00	1.00	0.99	1.00	0.97	0.99	0.65	1.00
Lung Squamous Cell Carcinoma	Precision	1.00	0.98	0.93	1.00	0.82	0.91	0.76	0.98
	Recall	1.00	0.96	0.94	0.98	0.88	0.97	0.85	0.96
	F1-score	1.00	0.97	0.93	0.99	0.85	0.94	0.80	0.97

Xception model Traning and validation graph



Xception model prediction


Prediction: lung_aca
Actual: lung_aca
Prediction: lung_scc
Actual: lung_scc
Prediction: lung_aca
Actual: lung_aca
Prediction: lung_scc
Actual: lung_scc
Prediction: lung_aca
Actual: lung_aca
Prediction: lung_scc
Actual: lung_scc
Prediction: lung_scc
Actual: lung_scc
Prediction: lung_scc
Actual: lung_scc
Prediction: lung_aca
Actual: lung_aca
Prediction: lung_scc
Actual: lung_scc
Prediction: lung_aca
Actual: lung_aca
Prediction: lung_aca
Actual: lung_aca
Prediction: lung_aca
Actual: lung_aca
Prediction: lung_n
Actual: lung_n
Prediction: lung_n
Actual: lung_n
Prediction: lung_scc
Actual: lung_scc



Advance Preprocessing Techniques