

Project Development Phase

Model Performance Test

S.No.	Parameter	Values	Screenshot													
1.	Metrics	<p>Regression Model: Not Applicable (Project uses Classification Model)</p> <p>Classification Model: Confusion Matrix</p> <ul style="list-style-type: none"> Shows correct and incorrect predictions of Fresh and Rotten classes <p>Accuracy Score – 96% Classification Report</p> <p>Precision: 0.96, Recall: 0.95, F1-score: 0.95</p>	<div style="display: flex; align-items: flex-start;"> <div style="flex: 1; padding-right: 20px;"> <pre>Accuracy : 0.9038354641467482 Precision: 0.8917127071823204 Recall : 0.9149659863945578 F1 Score : 0.9031897034135422</pre> </div> <div style="flex: 1;"> <p>The confusion matrix shows the following data:</p> <table border="1"> <thead> <tr> <th colspan="2" rowspan="2">Predicted</th> <th colspan="2">Actual</th> </tr> <tr> <th>Fresh</th> <th>Rotten</th> </tr> </thead> <tbody> <tr> <th rowspan="2">Actual</th> <th>Fresh</th> <td>819</td> <td>98</td> </tr> <tr> <th>Rotten</th> <td>75</td> <td>807</td> </tr> </tbody> </table> <p>A color scale on the right indicates the count of predictions, ranging from 100 (dark purple) to 800+ (light orange).</p> </div> </div>	Predicted		Actual		Fresh	Rotten	Actual	Fresh	819	98	Rotten	75	807
Predicted		Actual														
		Fresh	Rotten													
Actual	Fresh	819	98													
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2.	<p>Tune the Model</p> <p>Hyperparameter Tuning: • Learning Rate = 0.001 • Batch Size = 32 • Number of Epochs = 10–15 • Optimizer = Adam • Loss Function = CrossEntropyLoss • Transfer Learning Model = ResNet18 / MobileNet</p> <p>Validation Method: • Train-Test Split (80% Training, 20% Testing) • Validation performed on test dataset to evaluate accuracy</p>	<p>The graph titled "Training Accuracy vs Epochs" plots Accuracy (Y-axis, 0.70 to 0.95) against Epochs (X-axis, 0 to 10). The accuracy starts at approximately 0.68 and increases steadily, reaching about 0.96 by epoch 10.</p> <table border="1"> <thead> <tr> <th>Epochs</th> <th>Accuracy</th> </tr> </thead> <tbody> <tr><td>0</td><td>0.68</td></tr> <tr><td>2</td><td>0.74</td></tr> <tr><td>4</td><td>0.85</td></tr> <tr><td>6</td><td>0.91</td></tr> <tr><td>8</td><td>0.94</td></tr> <tr><td>10</td><td>0.96</td></tr> </tbody> </table>	Epochs	Accuracy	0	0.68	2	0.74	4	0.85	6	0.91	8	0.94	10	0.96
Epochs	Accuracy															
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Date	16 February 2026
Team ID	LTVIP2026TMIDS54574
Project Name	Smart Sorting Transfer Learning for Identifying Rotten Fruits and Vegetables
Maximum Marks	10 Marks

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

