LOGISTIC REGRESSION CLASSIFICATION:

1.Evaluation Metrics Accuracy:

The percentage of correct classification of both (purchase or not purchase) to total input and output calculation.

Accuracy=74+33/74+5+8+33

=0.89

2.Evaluation Metrics Recall:

Recall talks about only correctly classified class.

Purchased recall calculation:

Recall=74/79

=0.93

Not purchased recall calculation:

Recall=33/41

=0.80

3.Evaluation Metrics precision:

Precision talks about correctly and wrong classification of the class.

Purchased precision calculation:

Precision=74/82

=0.90

Not purchased precision calculation:

Precision=33/38

=0.86

4.Evaluation Metrics f1 Measure:

Recall value is high and precision value is low. How will you validate your model performance. By checking the overall performance of separate classes

Purchased=2*0.93*0.90/0.93+0.90

=0.91

Not purchased=2*0.80*0.86/0.80+0.86

=0.82

5.Evaluation Metrics Macro Average:

Average performance of precision, recall and f1 measure.

Precision=0.90+0.86/2

=0.88

Recall=0.93+0.80/2

=0.86

F1 measure=0.91+0.82/2

=0.86

6.Evaluation Metrics Weighted Average:

Sum of product of proportion rate(weight) of each class.

Precision=79/134+41/134

=0.88

Recall=79/134+41/134

=0.88

F1 measure=79/134+41/134

=0.88