Manual calculation for classification report:

[Purchased=P, Not Purchased=NP]

Accuracy:

Accuracy=T(P)+T(NP)/T(P)+T(NP)+F(P)+F(NP)

=78+43/78+7+43+6

=121/134

=0.90

Recall:

Recall for purchased=T(P)/T(P)+F(P)

=78/78+7

=78/85

=0.92

Recall for not purchased=T(P)/T(P)+F(P)

=43/43+6

=43/56

=0.88

Precision:

Precision for purchased=T(P)/T(P)+F(NP)

=78/78+6

=78/84

=0.93

Precision for purchased=T(NP)/T(NP)+F(P)

=43/43+7

=43/50

=0.86

F1_measure:

F1_measure for purchased=2*recall*precision/recall+precision

=2*(0.92*0.93)/ (0.92+0.93)

=1.71/1.85

=0.92

F1_measure for not purchased =2*recall*precision/recall+precision

=2*(0.88*0.86)/ (0.88+0.86)

=1.51/1.74

=0.86

Macro Average:

Macro average for precision=Precision(P)+ Precision(NP)/2

=0.93+0.86/2

=0.89

Macro average for recall=recall(P)+ recall(NP)/2

=0.93+0.88/2

=0.90

Macro average for precision=F1_measure(P)+ F1_measure(NP)/2

=0.92+0.87/2

=0.90

Weighted Average:

Weighted average for precision= Preci(P)*(85/134) +Preci(NP)*(49/134)

= 0.93*(85/134) +0.86*(49/134)

=0.90

Weighted average for recall= recall(P)*(85/134) +recall(NP)*(49/134)

=0.92*(85/134) +0.88*(49/134)

=0.90

Weighted avg for f1_measure= f1_measure(P)*(85/134) +

f1_measure (NP) *(49/134)

=0.92*(85/134) +0.88*(49/134)

=0.90