**Given data:**

1.Total value counts in the test set = 134

2.Total 0 counts in the test set = 85

3. Total 1 counts in the test set =49

**Confusion matrics:**

|  |  |  |
| --- | --- | --- |
|  | 0 | 1 |
| 0 | T(0) =80 | F(0) =5 |
| 1 | F(1) =7 | T(1)=49 |

**1.Accuracy:**

What is the percentage of correct classification of both (0 and 1)to the total input of the test set?

Accuracy = T(0)+T(1)/ T(0)+T(1)+ F(0)+F(1)

=80+42/80+7+42+5

=122/134 =0.91%

**2.Recall:**

**i)** What is the percentage of correct classification of (0 ) to the total input of (0) in the test set?

Recall(0) = T(0)/T(0)+F(0) = 80/80+5 = 0.94%

ii) What is the percentage of correct classification of (1) to the total input of (1) in the test set?

Recall(1) = T(1)/T(1)+F(1) = 42/42+7 = 0.86%

**3.Precision:**

**i)** What is the percentage of correct classification of (0 ) to the sum of correctly classified as (0) & wrongly classified as (0) in the test set?

Precision(0) = T(0)/T(0)+F(1) = 80/80+7 = 0.92%

**ii)** What is the percentage of correct classification of (1 ) to the sum of correctly classified as (1) & wrongly classified as (1) in the test set?

Precision(1) = T(1)/T(1)+F(0) = 42/42+5 = 0.89%

**4.F1 Measurement:**

i)What is the overall performance of (0) = 2\*recall(0)\*precision(0)/recall(0)+precision(0)

= 2\*0.94\*0.92/0.94+0.92 = 0.93%

i)What is the overall performance of (1) = 2\*recall(1)\*precision(1)/recall(1)+precision(1)

= 2\*0.86\*0.89/0.86+0.89 = 0.88%

**5.Macro average:**

i) What is the average performance of correctly & wrongly classified classes

= precision of (0)+precision of (1)/2 = 0.92+0.89/2 = 0.91%

ii) What is the average performance of correctly classified of both classes

= recall of (0)+recall of (1)/2 = 0.94+0.86/2 = 0.90%

iii) What is the average overall performance of both classes

= f1 of (0) + f1 of (1 )/ 2 = 0.93+0.88/2 = 0.90%

**6.Weighted average:**

**i)What is the sum of precision of proportion rate (weight) of each class?**

**= precison of (0)\*(85/134)+ precison of (1)\*(49/134)**

**=(0.92\*0.63)+(0.89\*0.36) =0.91%**

**ii)What is the sum of recall of proportion rate (weight) of each class?**

**= recall of (0)\*(85/134)+ recall of (1)\*(49/134)**

**=(0.94\*0.63)+(0.86\*0.36) =0.91%**

**iii)What is the sum of f1 score of proportion rate (weight) of each class?**

**= f1 of (0)\*(85/134)+ f1 of (1)\*(49/134)**

**=(0.93\*0.63)+(0.88\*0.36) =0.91%**