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## Init Values

```
Spruce Beech Fir Dead_tree

categories = ["Spruce", "Beech", "Fir", "Dead Tree"];
accuracy_table = [ 70 1 3 6;
                   3 64 12 8;
                   1 9 19 8;
                   5 3 4 34];

sum_classification = sum(accuracy_table,2) % the rows
sum_test_areas = sum(accuracy_table) % the columns

sum_classification =

    80
    87
    37
    46

sum_test_areas =

    79    77    38    56
```

## Calculate basic values

```
TP = diag(accuracy_table);
TN = calc_TN(accuracy_table);
FP = sum_classification - diag(accuracy_table);
FN = sum_test_areas' - diag(accuracy_table);

FP_rate = FP./sum_classification;
TP_rate = TP./(FP+FN);

sum_pixels = sum(sum_classification)

failure_1 = sum_classification - TP;
failure_2 = sum_test_areas - TP';

overall_accuracy = sum(TP)/sum_pixels * 100;

temp_cross_product_sum = sum(sum_classification.*sum_test_areas');

kappa = (sum_pixels * sum(TP) - temp_cross_product_sum)/(sum_pixels^2
- temp_cross_product_sum);

recall = TP./(TP+FN); % completeness
precision = TP./(TP+FP); % correctness
```

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```

F1_score = calc_f1(accuracy_table);

commision = 1 - TP./(TP+FP);
ommision = 1 - TP./(TP+FN);

disp(['Overall accuracy: ' , num2str(overall_accuracy)]);
disp(['Kappa: ' , num2str(kappa*100)]);

for i = 1:size(recall,1)
    disp(categories(i))
    disp([' recall: ' , num2str(recall(i)*100), ' Precision: ',
num2str(precision(i) * 100)]);
    disp([' F1-Score: ' , num2str(F1_score(i)*100)]);
    disp([' Ommision: ' , num2str(ommision(i)*100), ' Commision: ',
num2str(commision(i) * 100)]);
end
disp('')
disp(['B: ', num2str(accuracy_table(2,1))])
disp('')
disp(['C: ', num2str(FN(3))])
disp('')
disp(['D: ', num2str(FN(4))])
disp('')
disp(['E: ', num2str(FP(2))])
disp('')
disp(['D: (for firs)'])
disp(['False positive rate: ', num2str(FP_rate(3)*100), ' True
positive rate: ', num2str(TP_rate(3)*100)]);

sum_pixels =

    250

Overall accuracy: 74.8
Kappa: 65.3839
Spruce
    recall: 88.6076 Precision: 87.5
    F1-Score: 88.0503
    Ommision: 11.3924 Commision: 12.5
Beech
    recall: 83.1169 Precision: 73.5632
    F1-Score: 78.0488
    Ommision: 16.8831 Commision: 26.4368
Fir
    recall: 50 Precision: 51.3514
    F1-Score: 50.6667
    Ommision: 50 Commision: 48.6486
Dead Tree
    recall: 60.7143 Precision: 73.913
    F1-Score: 66.6667
    Ommision: 39.2857 Commision: 26.087
B: 3
C: 19

```

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*D: 22*  
*E: 23*  
*D: (for firs)*  
*False positive rate: 48.6486 True positive rate: 51.3514*

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