

PRILOGA B: Odločitvena drevesa

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Priloga 1: Rezultati

Dan_15

VARIANTA 1

=== Run information ===

```
Scheme:          weka.classifiers.trees.J48 -C 0.25 -M 925
Relation:        dan_15-weka.filters.unsupervised.attribute.Remove-R1-4,6-
weka.filters.unsupervised.attribute.Remove-R65,67-68
Instances:       8228
Attributes:      65
                 sezona
                 padavine
                 T_tal
                 površina_lokacija
                 površina_zaledje
                 z_avg
                 naklon_avg
                 nacin_kmet
                 gnojenje
                 Padavine_SWAT
                 Povrs_odt_SWAT
                 Sed_SWAT
                 N_SWAT
                 P_SWAT
                 SD
                 1
                 pesek_0_30
                 melj_grobi_0_30
                 melj_fini_0_30
                 melj_skupni_0_30
                 glina_0_30
                 TRZ_0_30
                 pH_v_CaCl2_0_30
                 Cskupni_0_30
                 karbonati_0_30
                 Corg_0_30
                 org_snov_0_30
                 N_0_30
                 Corg_N_0_30
                 P2O5_0_30
                 K2O_0_30
                 Ca_0_30
                 Mg_0_30
                 K_0_30
                 Na_0_30
                 baz_kationi_vsota_0_30
                 CEC_0_30
                 baz_kationi_zasicenost_0_30
                 Cskupni_0_15
                 karbonati_0_15
                 Corg_0_15
                 org_snov_0_15
                 N_0_15
                 Corg_N_0_15
                 Ca_0_15
                 Mg_0_15
```

```

K_0_15
Na_0_15
baz_kationi_vsota_0_15
CEC_0_15
baz_kationi_zasicenost_0_15
Cskupni_15_30
karbonati_15_30
Corg_15_30
org_snov_15_30
N_15_30
Corg_N_15_30
Ca_15_30
Mg_15_30
K_15_30
Na_15_30
baz_kationi_vsota_15_30
CEC_15_30
baz_kationi_zasicenost_15_30
vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

```

=== Classifier model (full training set) ===

J48 pruned tree

```

T_tal <= 13.774306
| K_0_15 <= 0.46: med (1075.06/526.16)
| K_0_15 > 0.46: high (2430.4/535.98)
T_tal > 13.774306
| K2O_0_30 <= 22.6: low (1664.79/268.03)
| K2O_0_30 > 22.6
| | nacin_kmet = K: low (1071.14/373.6)
| | nacin_kmet = T: med (1335.61/617.12)

```

Number of Leaves : 5

Size of the tree : 9

Time taken to build model: 0.15 seconds

=== Stratified cross-validation ===
=== Summary ===

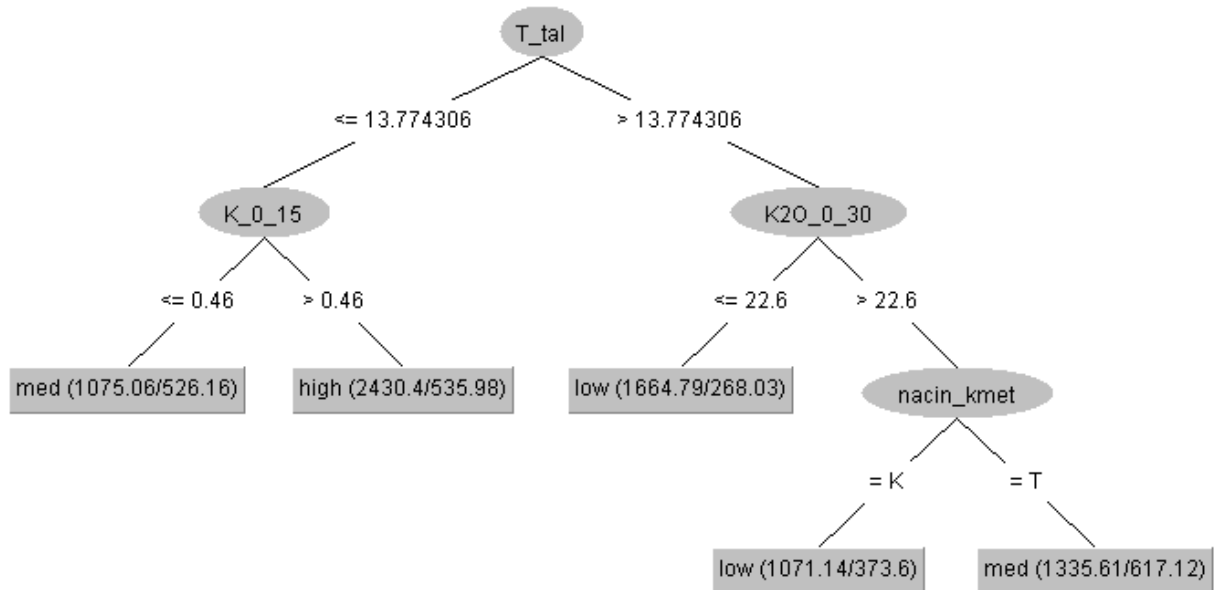
Correctly Classified Instances	5239	69.1435 %
Incorrectly Classified Instances	2338	30.8565 %
Kappa statistic	0.5355	
Mean absolute error	0.2884	
Root mean squared error	0.379	
Relative absolute error	65.2873 %	
Root relative squared error	80.6381 %	
Total Number of Instances	7577	
Ignored Class Unknown Instances	651	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,750	low	0,719	0,140	0,763	0,719	0,740	0,586	0,860
0,446	med	0,540	0,213	0,524	0,540	0,532	0,324	0,694
0,711	high	0,805	0,107	0,773	0,805	0,789	0,690	0,881
0,645	Weighted Avg.	0,691	0,152	0,693	0,691	0,692	0,539	0,816

=== Confusion Matrix ===

a	b	c	<-- classified as
2095	747	72	a = low
570	1240	488	b = med
82	379	1904	c = high



VARIANTA 2

=== Run information ===

Scheme: weka.classifiers.trees.J48 -C 0.25 -M 700
Relation: dan_15-weka.filters.unsupervised.attribute.Remove-R1-4,6-
weka.filters.unsupervised.attribute.Remove-R65,67-68-
weka.filters.unsupervised.attribute.Remove-R39-64
Instances: 8228
Attributes: 39
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
Padavine_SWAT
Povrs_odt_SWAT
Sed_SWAT
N_SWAT
P_SWAT
SD
l
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30

```

N_0_30
Corg_N_0_30
P2O5_0_30
K2O_0_30
Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

```

=== Classifier model (full training set) ===

J48 pruned tree

```

T_tal <= 13.774306
| K_0_30 <= 0.38: med (842.66/443.24)
| K_0_30 > 0.38: high (2662.8/720.46)
T_tal > 13.774306
| K2O_0_30 <= 22.6: low (1664.79/268.03)
| K2O_0_30 > 22.6
| | nacin_kmet = K: low (1071.14/373.6)
| | nacin_kmet = T: med (1335.61/617.12)

```

Number of Leaves : 5

Size of the tree : 9

Time taken to build model: 0.04 seconds

=== Stratified cross-validation ===
=== Summary ===

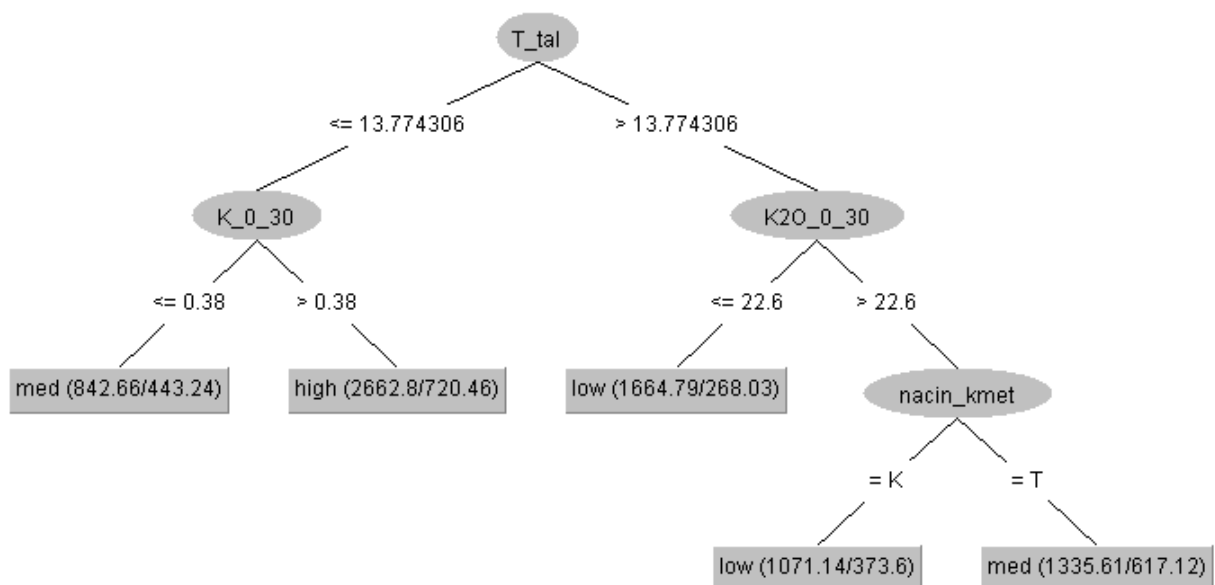
Correctly Classified Instances	5128	67.6785 %
Incorrectly Classified Instances	2449	32.3215 %
Kappa statistic	0.5132	
Mean absolute error	0.2968	
Root mean squared error	0.3845	
Relative absolute error	67.1794 %	
Root relative squared error	81.8156 %	
Total Number of Instances	7577	
Ignored Class Unknown Instances	651	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,754	low	0,719	0,143	0,758	0,719	0,738	0,582	0,864
0,429	med	0,471	0,197	0,510	0,471	0,490	0,280	0,672
0,672	high	0,824	0,142	0,725	0,824	0,771	0,661	0,871
Weighted Avg.		0,677	0,159	0,673	0,677	0,673	0,515	0,808
0,630								

=== Confusion Matrix ===

a	b	c	<-- classified as
2096	712	106	a = low
582	1083	633	b = med
86	330	1949	c = high



VARIANTA 3

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 900
Relation:    dan_15-weka.filters.unsupervised.attribute.Remove-R1-4,6-
weka.filters.unsupervised.attribute.Remove-R65,67-68-
weka.filters.unsupervised.attribute.Remove-R39-64-
weka.filters.unsupervised.attribute.Remove-R10-14,23-38-
weka.filters.unsupervised.attribute.Remove-R10-11
Instances:   8228
Attributes:  16
             sezona
             padavine
             T_tal
             površina_lokacija
             površina_zaledje
             z_avg
             naklon_avg
             nacin_kmet
             gnojenje
             pesek_0_30
             melj_grobi_0_30
             melj_fini_0_30
             melj_skupni_0_30
             glina_0_30
             TRZ_0_30
             vsebnost_vode_CLASS
Test mode:   10-fold cross-validation
  
```

=== Classifier model (full training set) ===

J48 pruned tree

```

T_tal <= 13.774306
|  glina_0_30 <= 29.1: med (1316.46/743.86)
|  glina_0_30 > 29.1: high (2189.0/506.28)
T_tal > 13.774306
  
```

```

|   pesek_0_30 <= 13.6
|   |   nacin_kmet = K: low (1581.58/481.28)
|   |   nacin_kmet = T: med (1578.76/811.66)
|   pesek_0_30 > 13.6: low (911.2/105.2)

```

Number of Leaves : 5

Size of the tree : 9

Time taken to build model: 0.02 seconds

=== Stratified cross-validation ===
 === Summary ===

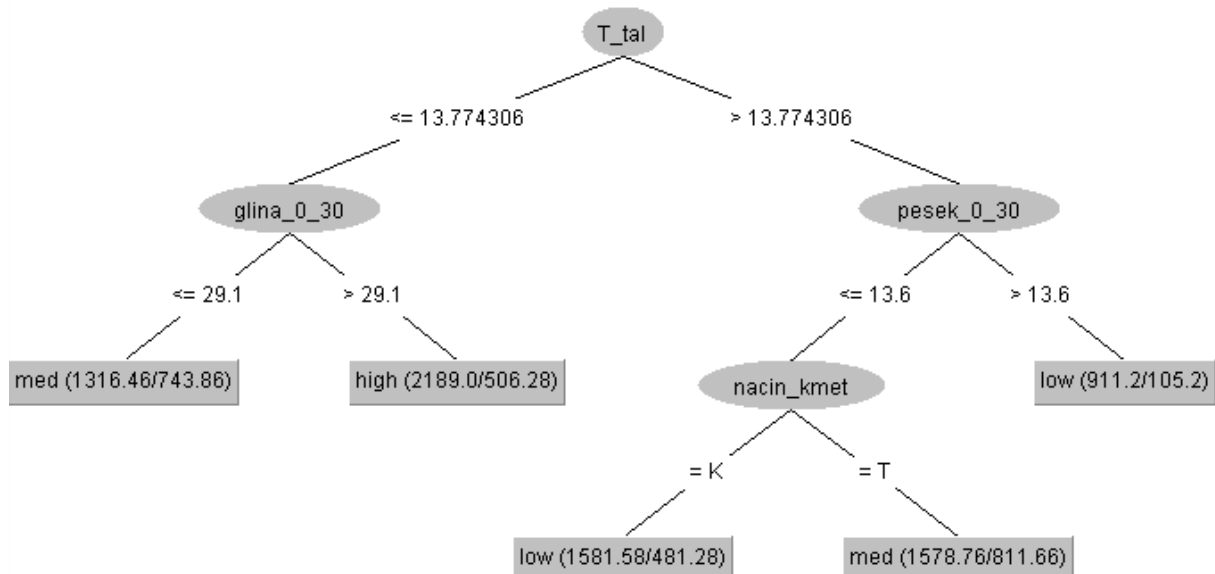
Correctly Classified Instances	4947	65.2897 %
Incorrectly Classified Instances	2630	34.7103 %
Kappa statistic	0.4774	
Mean absolute error	0.3126	
Root mean squared error	0.3947	
Relative absolute error	70.7478 %	
Root relative squared error	83.9853 %	
Total Number of Instances	7577	
Ignored Class Unknown Instances	651	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,714	low	0,696	0,164	0,726	0,696	0,711	0,537	0,833
0,427	med	0,533	0,253	0,478	0,533	0,504	0,272	0,675
0,673	high	0,716	0,102	0,761	0,716	0,738	0,625	0,848
0,614	Weighted Avg.	0,653	0,172	0,662	0,653	0,657	0,484	0,790

=== Confusion Matrix ===

a	b	c	<-- classified as
2029	817	68	a = low
610	1224	464	b = med
154	517	1694	c = high



Dan_30

VARIANTA 1

=== Run information ===

```
Scheme:          weka.classifiers.trees.J48 -C 0.25 -M 750
Relation:        dan_30-weka.filters.unsupervised.attribute.Remove-R1-4,6,70,72-73
Instances:       8228
Attributes:      65
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
Padavine_SWAT
Povrs_odt_SWAT
Sed_SWAT
N_SWAT
P_SWAT
SD
1
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P2O5_0_30
K2O_0_30
Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
Cskupni_0_15
karbonati_0_15
Corg_0_15
org_snov_0_15
N_0_15
Corg_N_0_15
Ca_0_15
Mg_0_15
K_0_15
Na_0_15
baz_kationi_vsota_0_15
CEC_0_15
baz_kationi_zasicenost_0_15
```

```

Cskupni_15_30
karbonati_15_30
Corg_15_30
org_snov_15_30
N_15_30
Corg_N_15_30
Ca_15_30
Mg_15_30
K_15_30
Na_15_30
baz_kationi_vsota_15_30
CEC_15_30
baz_kationi_zasicenost_15_30
vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

```

=== Classifier model (full training set) ===

J48 pruned tree

```

T_tal <= 14.11
| K_0_15 <= 0.46: med (1177.24/448.46)
| K_0_15 > 0.46
| | Corg_N_0_30 <= 7.6: med (869.0/310.0)
| | Corg_N_0_30 > 7.6: high (1817.46/320.84)
T_tal > 14.11
| K_0_15 <= 0.52: low (1591.84/243.31)
| K_0_15 > 0.52
| | naklon_avg <= 6: med (948.29/472.29)
| | naklon_avg > 6: low (1486.16/730.16)

```

Number of Leaves : 6

Size of the tree : 11

Time taken to build model: 0.08 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances	5357	67.8961 %
Incorrectly Classified Instances	2533	32.1039 %
Kappa statistic	0.5153	
Mean absolute error	0.2918	
Root mean squared error	0.3818	
Relative absolute error	65.78 %	
Root relative squared error	81.0639 %	
Total Number of Instances	7890	
Ignored Class Unknown Instances	338	

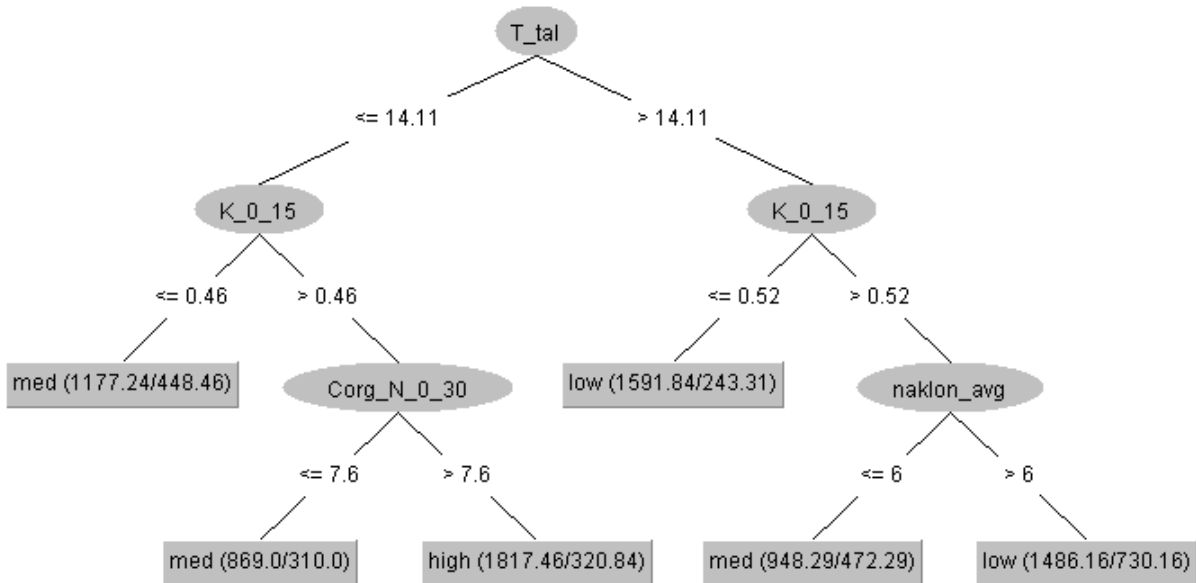
=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,755	low	0,800	0,193	0,678	0,800	0,734	0,586	0,884
0,533	med	0,621	0,240	0,590	0,621	0,605	0,377	0,731
0,725	high	0,613	0,056	0,828	0,613	0,705	0,614	0,861
0,667	Weighted Avg.	0,679	0,168	0,693	0,679	0,679	0,520	0,822

=== Confusion Matrix ===

a b c <-- classified as

2128	502	31		a = low
792	1751	275		b = med
217	716	1478		c = high



VARIANTA 2

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 950
Relation:    dan_30-weka.filters.unsupervised.attribute.Remove-R1-4,6,70,72-73
Instances:   8228
Attributes:  65
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
Padavine_SWAT
Povrs_odt_SWAT
Sed_SWAT
N_SWAT
P_SWAT
SD
l
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P2O5_0_30
K2O_0_30
  
```

```

Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
Cskupni_0_15
karbonati_0_15
Corg_0_15
org_snov_0_15
N_0_15
Corg_N_0_15
Ca_0_15
Mg_0_15
K_0_15
Na_0_15
baz_kationi_vsota_0_15
CEC_0_15
baz_kationi_zasicenost_0_15
Cskupni_15_30
karbonati_15_30
Corg_15_30
org_snov_15_30
N_15_30
Corg_N_15_30
Ca_15_30
Mg_15_30
K_15_30
Na_15_30
baz_kationi_vsota_15_30
CEC_15_30
baz_kationi_zasicenost_15_30
vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

```

=== Classifier model (full training set) ===

J48 pruned tree

```

T_tal <= 14.11
| K_0_15 <= 0.46: med (1177.24/448.46)
| K_0_15 > 0.46
| | Corg_N_0_15 <= 9.5: med (1069.96/432.0)
| | Corg_N_0_15 > 9.5: high (1616.51/228.88)
T_tal > 14.11
| K_0_15 <= 0.52: low (1591.84/243.31)
| K_0_15 > 0.52
| | nacin_kmet = K: low (1099.16/507.16)
| | nacin_kmet = T: med (1335.29/720.29)

```

Number of Leaves : 6

Size of the tree : 11

Time taken to build model: 0.06 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances	5251	66.5526 %
Incorrectly Classified Instances	2639	33.4474 %
Kappa statistic	0.493	
Mean absolute error	0.295	
Root mean squared error	0.3838	
Relative absolute error	66.5114 %	

Root relative squared error 81.5045 %
 Total Number of Instances 7890
 Ignored Class Unknown Instances 338

=== Detailed Accuracy By Class ===

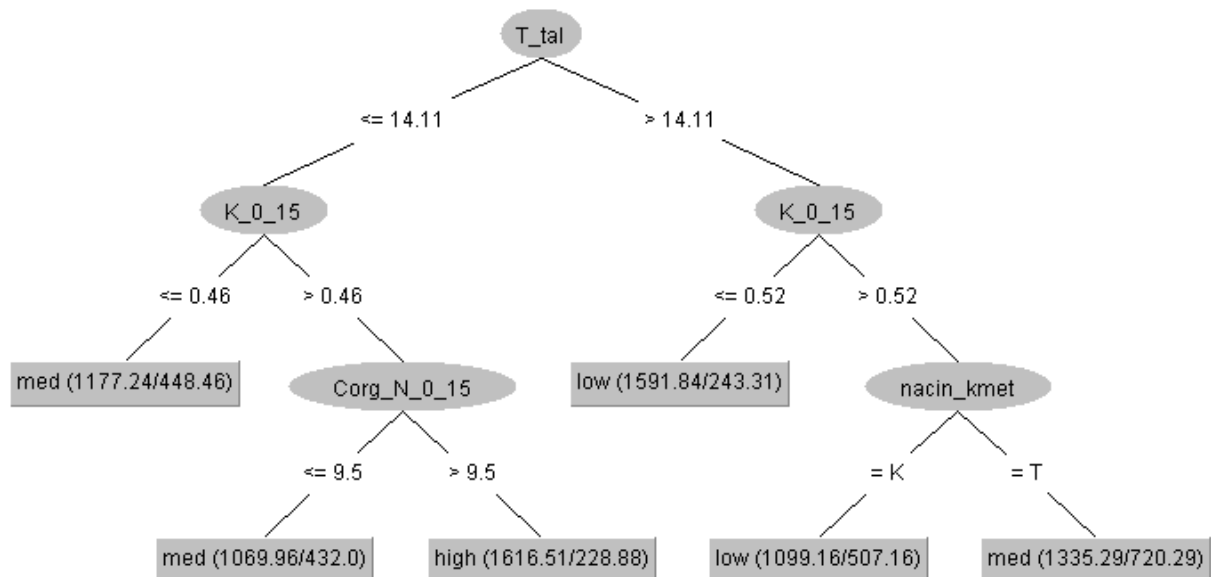
PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,746	low	0,722	0,145	0,717	0,722	0,719	0,576	0,872
0,544	med	0,709	0,327	0,547	0,709	0,617	0,367	0,734
0,724	high	0,553	0,041	0,856	0,553	0,672	0,593	0,860
0,667	Weighted Avg.	0,666	0,178	0,699	0,666	0,668	0,506	0,819

=== Confusion Matrix ===

```

  a   b   c  <-- classified as
1920 717  24 |   a = low
  620 1998 200 |   b = med
  138  940 1333 |   c = high

```



VARIANTA 3

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 625
Relation:    dan_30-weka.filters.unsupervised.attribute.Remove-R1-4,6,70,72-73-
weka.filters.unsupervised.attribute.Remove-R39-64
Instances:   8228
Attributes:  39
             sezona
             padavine
             T_tal
             povrsina_lokacija
             povrsina_zaledje
             z_avg
             naklon_avg
             nacin_kmet
             gnojenje

```

```

Padavine_SWAT
Povrs_odt_SWAT
Sed_SWAT
N_SWAT
P_SWAT
SD
l
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P2O5_0_30
K2O_0_30
Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
vsebnost_vode_CLASS
Test mode:    10-fold cross-validation

=== Classifier model (full training set) ===

J48 pruned tree
-----

T_tal <= 14.11
| N_0_30 <= 0.12: med (710.28/308.51)
| N_0_30 > 0.12
| | N_0_30 <= 0.26: high (2421.46/638.84)
| | N_0_30 > 0.26: med (731.96/161.96)
T_tal > 14.11
| K2O_0_30 <= 22.6: low (1595.72/261.19)
| K2O_0_30 > 22.6
| | naklon_avg <= 6: med (706.25/293.25)
| | naklon_avg > 6: low (1724.33/796.33)

Number of Leaves :    6

Size of the tree : 11

Time taken to build model: 0.05 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances      5427           68.7833 %
Incorrectly Classified Instances    2463           31.2167 %
Kappa statistic                    0.5294
Mean absolute error                 0.285
Root mean squared error             0.377
Relative absolute error             64.2461 %
Root relative squared error         80.057 %
Total Number of Instances          7890
Ignored Class Unknown Instances     338

```

=== Detailed Accuracy By Class ===

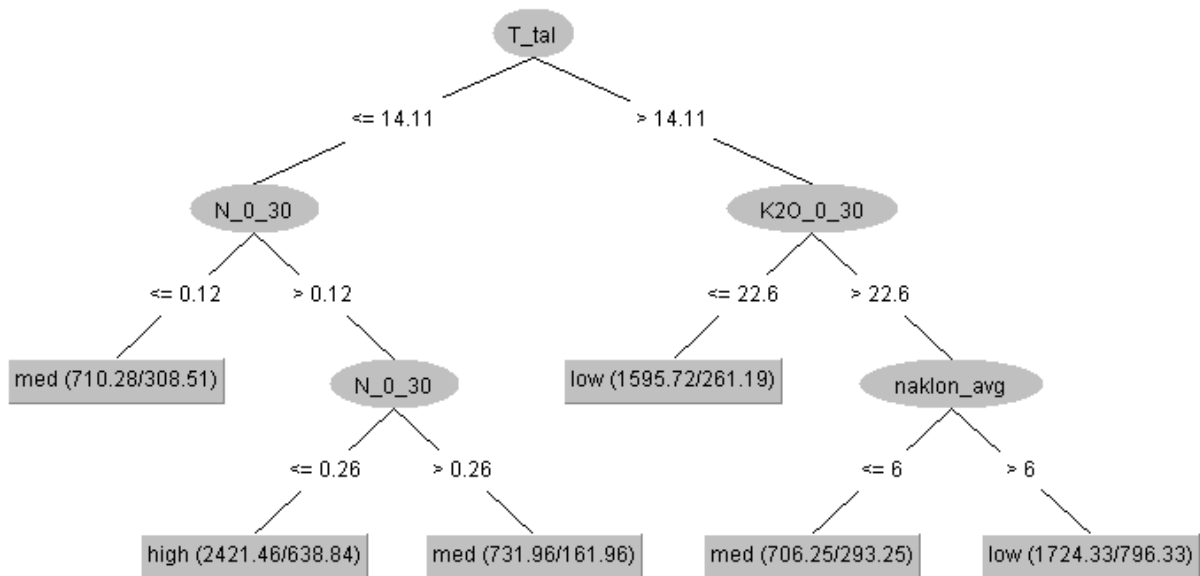
PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,767	low	0,751	0,128	0,749	0,751	0,750	0,622	0,901
0,588	med	0,644	0,257	0,582	0,644	0,611	0,379	0,739
0,716	high	0,669	0,089	0,768	0,669	0,715	0,605	0,866
0,687	Weighted Avg.	0,688	0,162	0,695	0,688	0,690	0,530	0,832

=== Confusion Matrix ===

```

a   b   c   <-- classified as
1999 629  33 |   a = low
 550 1815 453 |   b = med
 121  677 1613 |   c = high

```



VARIANTA 4

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 800
Relation:    dan_30-weka.filters.unsupervised.attribute.Remove-R1-4,6,70,72-73-
weka.filters.unsupervised.attribute.Remove-R39-64
Instances:   8228
Attributes:  39
             sezona
             padavine
             T_tal
             površina_lokacija
             površina_zaledje
             z_avg
             naklon_avg
             nacin_kmet
             gnojenje
             Padavine_SWAT
             Povrs_odt_SWAT
             Sed_SWAT
             N_SWAT
             P_SWAT

```

```

SD
1
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P2O5_0_30
K2O_0_30
Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

```

=== Classifier model (full training set) ===

J48 pruned tree

```

T_tal <= 14.11
| K_0_30 <= 0.38: med (944.4/439.46)
| K_0_30 > 0.38
| | naklon_avg <= 14: high (1647.46/288.84)
| | naklon_avg > 14: med (1271.84/459.0)
T_tal > 14.11
| K2O_0_30 <= 22.6: low (1595.72/261.19)
| K2O_0_30 > 22.6
| | naklon_avg <= 14: med (1178.41/545.29)
| | naklon_avg > 14: low (1252.16/521.16)

```

Number of Leaves : 6

Size of the tree : 11

Time taken to build model: 0.04 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances	5387	68.2763 %
Incorrectly Classified Instances	2503	31.7237 %
Kappa statistic	0.52	
Mean absolute error	0.295	
Root mean squared error	0.3836	
Relative absolute error	66.5017 %	
Root relative squared error	81.4627 %	
Total Number of Instances	7890	
Ignored Class Unknown Instances	338	

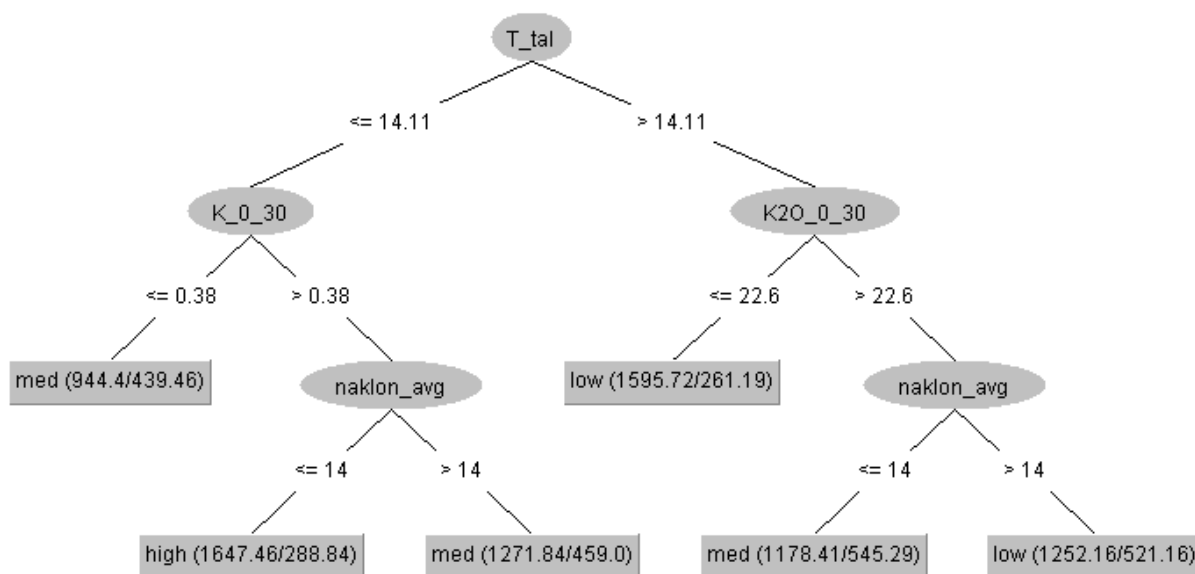
=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
----------	-------	---------	---------	-----------	--------	-----------	-----	----------

0,757	low	0,785	0,155	0,721	0,785	0,752	0,618	0,892
0,523	med	0,688	0,278	0,579	0,688	0,629	0,398	0,721
0,694	high	0,564	0,052	0,826	0,564	0,670	0,580	0,842
Weighted Avg.		0,683	0,167	0,702	0,683	0,683	0,528	0,816
0,654								

=== Confusion Matrix ===

a	b	c	<-- classified as
2089	541	31	a = low
624	1939	255	b = med
184	868	1359	c = high



VARIANTA 5

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 550
Relation:    dan_30-weka.filters.unsupervised.attribute.Remove-R1-4,6,70,72-73-
weka.filters.unsupervised.attribute.Remove-R39-64-
weka.filters.unsupervised.attribute.Remove-R23-38-
weka.filters.unsupervised.attribute.Remove-R10-16
Instances:   8228
Attributes:  16
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
vsebnost_vode_CLASS
  
```

Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===

J48 pruned tree

```
T_tal <= 14.11
| glina_0_30 <= 25.4: med (710.28/308.51)
| glina_0_30 > 25.4
| | z_avg <= 62.049: high (772.84/65.0)
| | z_avg > 62.049
| | | melj_fini_0_30 <= 36.2: high (843.67/163.88)
| | | melj_fini_0_30 > 36.2: med (1536.92/571.96)
T_tal > 14.11
| glina_0_30 <= 25.4: low (696.72/83.23)
| glina_0_30 > 25.4
| | nacin_kmet = K: low (1790.29/625.25)
| | nacin_kmet = T
| | | povrsina_zaledje <= 80300: med (912.25/459.25)
| | | povrsina_zaledje > 80300: low (627.04/230.04)
```

Number of Leaves : 8

Size of the tree : 15

Time taken to build model: 0.03 seconds

=== Stratified cross-validation ===

=== Summary ===

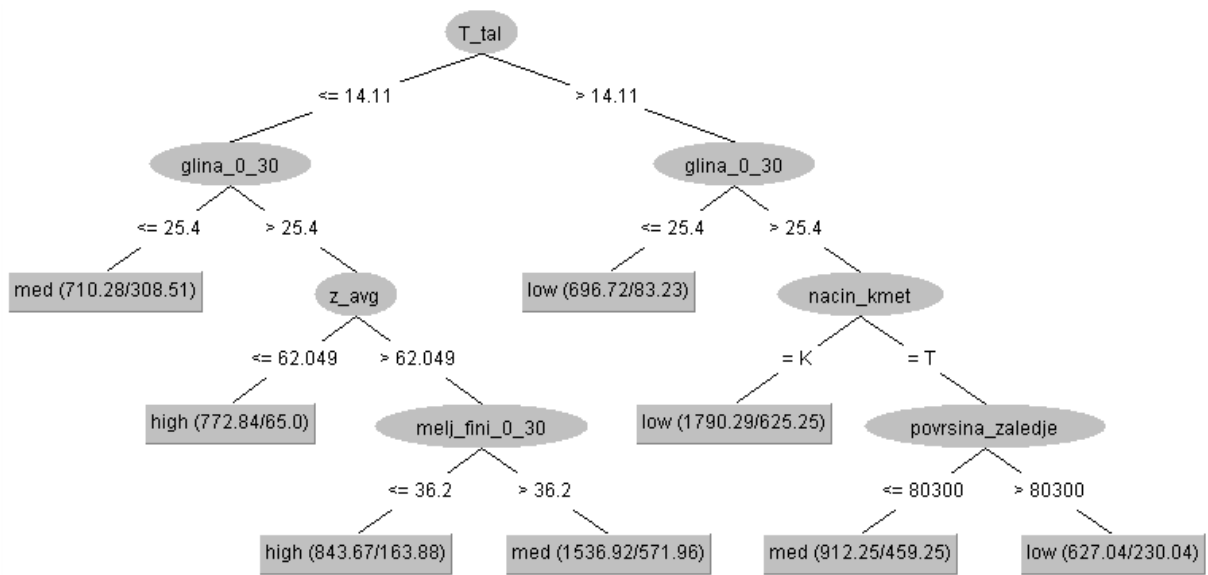
Correctly Classified Instances	5391	68.327 %
Incorrectly Classified Instances	2499	31.673 %
Kappa statistic	0.5211	
Mean absolute error	0.2878	
Root mean squared error	0.379	
Relative absolute error	64.8978 %	
Root relative squared error	80.4877 %	
Total Number of Instances	7890	
Ignored Class Unknown Instances	338	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,742	low	0,825	0,184	0,696	0,825	0,755	0,619	0,884
0,527	med	0,639	0,258	0,579	0,639	0,607	0,373	0,729
0,757	high	0,579	0,042	0,860	0,579	0,692	0,612	0,873
0,670	Weighted Avg.	0,683	0,167	0,704	0,683	0,683	0,529	0,825

=== Confusion Matrix ===

```
  a   b   c  <-- classified as
2195 446  20 |   a = low
  810 1800 208 |   b = med
  150  865 1396 |   c = high
```

Dan_50

VARIANTA 1

=== Run information ===

```
Scheme:          weka.classifiers.trees.J48 -C 0.25 -M 800
Relation:        dan_50-weka.filters.unsupervised.attribute.Remove-R1-4,6-
weka.filters.unsupervised.attribute.Remove-R65,67-68
Instances:       8228
Attributes:      65
                 sezona
                 padavine
                 T_tal
                 površina_lokacija
                 površina_zaledje
                 z_avg
                 naklon_avg
                 nacin_kmet
                 gnojenje
                 Padavine_SWAT
                 Povrs_odt_SWAT
                 Sed_SWAT
                 N_SWAT
                 P_SWAT
                 SD
                 l
                 pesek_0_30
                 melj_grobi_0_30
                 melj_fini_0_30
                 melj_skupni_0_30
                 glina_0_30
                 TRZ_0_30
                 pH_v_CaCl2_0_30
                 Cskupni_0_30
                 karbonati_0_30
                 Corg_0_30
                 org_snov_0_30
                 N_0_30
                 Corg_N_0_30
                 P2O5_0_30
                 K2O_0_30
                 Ca_0_30
                 Mg_0_30
                 K_0_30
                 Na_0_30
                 baz_kationi_vsota_0_30
                 CEC_0_30
                 baz_kationi_zasicenost_0_30
                 Cskupni_0_15
                 karbonati_0_15
                 Corg_0_15
                 org_snov_0_15
                 N_0_15
                 Corg_N_0_15
                 Ca_0_15
                 Mg_0_15
                 K_0_15
                 Na_0_15
                 baz_kationi_vsota_0_15
                 CEC_0_15
                 baz_kationi_zasicenost_0_15
                 Cskupni_15_30
                 karbonati_15_30
                 Corg_15_30
                 org_snov_15_30
                 N_15_30
```

```

Corg_N_15_30
Ca_15_30
Mg_15_30
K_15_30
Na_15_30
baz_kationi_vsota_15_30
CEC_15_30
baz_kationi_zasicenost_15_30
vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

```

=== Classifier model (full training set) ===

J48 pruned tree

```

K_0_30 <= 0.32: low (928.0/203.0)
K_0_30 > 0.32
| T_tal <= 13.244444
| | z_avg <= 263.846: high (1869.79/227.64)
| | z_avg > 263.846: med (1312.83/509.28)
| T_tal > 13.244444
| | melj_fini_0_30 <= 36.2: med (1180.17/595.44)
| | melj_fini_0_30 > 36.2: low (2634.21/1315.21)

```

Number of Leaves : 5

Size of the tree : 9

Time taken to build model: 0.08 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances	5163	65.1483 %
Incorrectly Classified Instances	2762	34.8517 %
Kappa statistic	0.4816	
Mean absolute error	0.3063	
Root mean squared error	0.3901	
Relative absolute error	69.4465 %	
Root relative squared error	83.0689 %	
Total Number of Instances	7925	
Ignored Class Unknown Instances	303	

=== Detailed Accuracy By Class ===

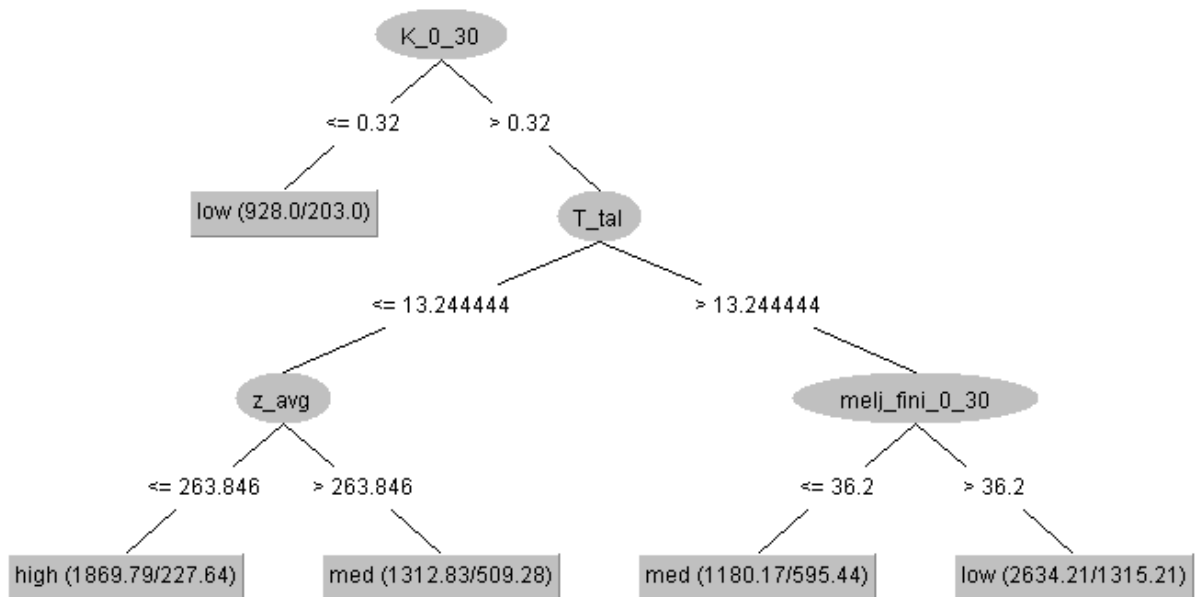
PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,517	med	0,597	0,273	0,527	0,597	0,560	0,315	0,720
0,677	low	0,817	0,192	0,625	0,817	0,708	0,583	0,886
0,742	high	0,577	0,047	0,882	0,577	0,698	0,595	0,840
0,648	Weighted Avg.	0,651	0,164	0,690	0,651	0,654	0,497	0,812

=== Confusion Matrix ===

```

      a    b    c  <-- classified as
1599  863  215 |   a = med
 390 1823   17 |   b = low
1044  233 1741 |   c = high

```



VARIANTA 2

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 1075
Relation:    dan_50-weka.filters.unsupervised.attribute.Remove-R1-4,6-
weka.filters.unsupervised.attribute.Remove-R65,67-68
Instances:   8228
Attributes:  65
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
Padavine_SWAT
Povrs_odt_SWAT
Sed_SWAT
N_SWAT
P_SWAT
SD
l
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P205_0_30
K2O_0_30
Ca_0_30
Mg_0_30
  
```

```

K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
Cskupni_0_15
karbonati_0_15
Corg_0_15
org_snov_0_15
N_0_15
Corg_N_0_15
Ca_0_15
Mg_0_15
K_0_15
Na_0_15
baz_kationi_vsota_0_15
CEC_0_15
baz_kationi_zasicenost_0_15
Cskupni_15_30
karbonati_15_30
Corg_15_30
org_snov_15_30
N_15_30
Corg_N_15_30
Ca_15_30
Mg_15_30
K_15_30
Na_15_30
baz_kationi_vsota_15_30
CEC_15_30
baz_kationi_zasicenost_15_30
vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

```

=== Classifier model (full training set) ===

J48 pruned tree

```

-----
T_tal <= 13.244444
| K_0_15 <= 0.46: med (1098.74/514.13)
| K_0_15 > 0.46: high (2519.42/625.65)
T_tal > 13.244444
| K_0_15 <= 0.46: low (1211.26/286.39)
| K_0_15 > 0.46
| | Ca_0_30 <= 30.15: med (1128.74/574.56)
| | Ca_0_30 > 30.15: low (1966.84/1033.84)

```

Number of Leaves : 5

Size of the tree : 9

Time taken to build model: 0.07 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances	4953	62.4984 %
Incorrectly Classified Instances	2972	37.5016 %
Kappa statistic	0.4416	
Mean absolute error	0.33	
Root mean squared error	0.406	
Relative absolute error	74.8085 %	
Root relative squared error	86.4415 %	
Total Number of Instances	7925	
Ignored Class Unknown Instances	303	

=== Detailed Accuracy By Class ===

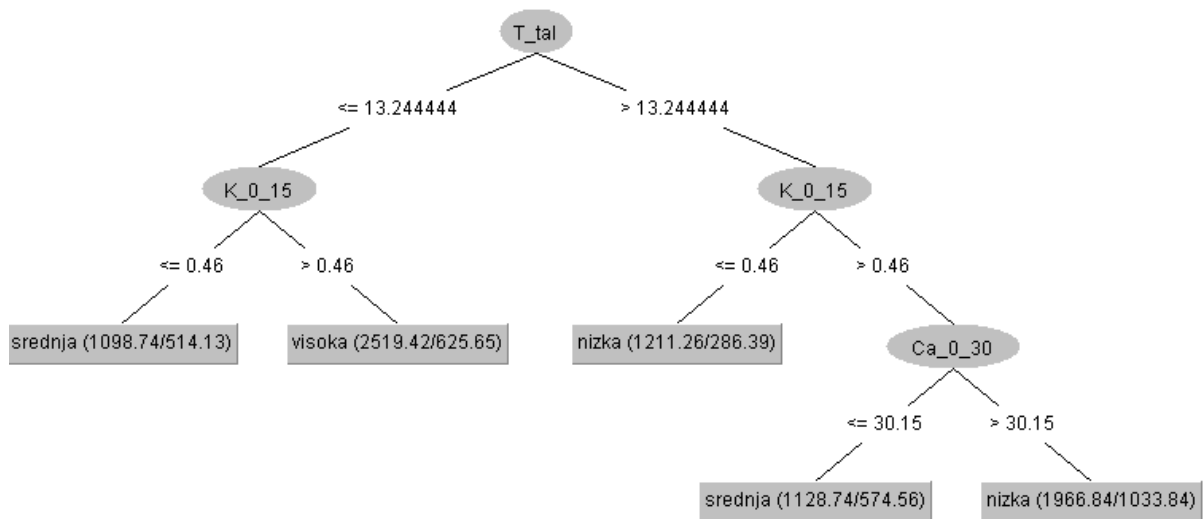
PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,485	med	0,569	0,280	0,509	0,569	0,537	0,282	0,686
0,645	low	0,777	0,202	0,601	0,777	0,678	0,537	0,851
0,714	high	0,563	0,072	0,827	0,563	0,670	0,544	0,808
0,617	Weighted Avg.	0,625	0,179	0,656	0,625	0,627	0,454	0,779

=== Confusion Matrix ===

```

a   b   c   <-- classified as
1523 848 306 |   a = med
 450 1732 48 |   b = low
1019 301 1698 |   c = high

```



VARIANTA 3

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 675
Relation:    dan_50-weka.filters.unsupervised.attribute.Remove-R1-4,6-
weka.filters.unsupervised.attribute.Remove-R65,67-68-
weka.filters.unsupervised.attribute.Remove-R23-64-
weka.filters.unsupervised.attribute.Remove-R10-12,14-16-
weka.filters.unsupervised.attribute.Remove-R10
Instances:   8228
Attributes:  16
             sezona
             padavine
             T_tal
             površina_lokacija
             površina_zaledje
             z_avg
             naklon_avg
             nacin_kmet
             gnojenje
             pesek_0_30
             melj_grobi_0_30
             melj_fini_0_30

```

```

        melj_skupni_0_30
        glina_0_30
        TRZ_0_30
        vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

```

=== Classifier model (full training set) ===

J48 pruned tree

```

T_tal <= 13.244444
| povrsina_lokacija <= 7350.9416: med (844.44/437.13)
| povrsina_lokacija > 7350.9416
| | z_avg <= 263.846: high (1684.11/187.65)
| | z_avg > 263.846: med (1089.61/476.3)
T_tal > 13.244444
| glina_0_30 <= 25.4: low (747.09/199.39)
| glina_0_30 > 25.4
| | melj_fini_0_30 <= 36.2: med (938.39/490.39)
| | melj_fini_0_30 > 36.2: low (2621.36/1278.19)

```

Number of Leaves : 6

Size of the tree : 11

Time taken to build model: 0.02 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances	5018	63.3186 %
Incorrectly Classified Instances	2907	36.6814 %
Kappa statistic	0.4536	
Mean absolute error	0.3196	
Root mean squared error	0.3982	
Relative absolute error	72.4514 %	
Root relative squared error	84.7816 %	
Total Number of Instances	7925	
Ignored Class Unknown Instances	303	

=== Detailed Accuracy By Class ===

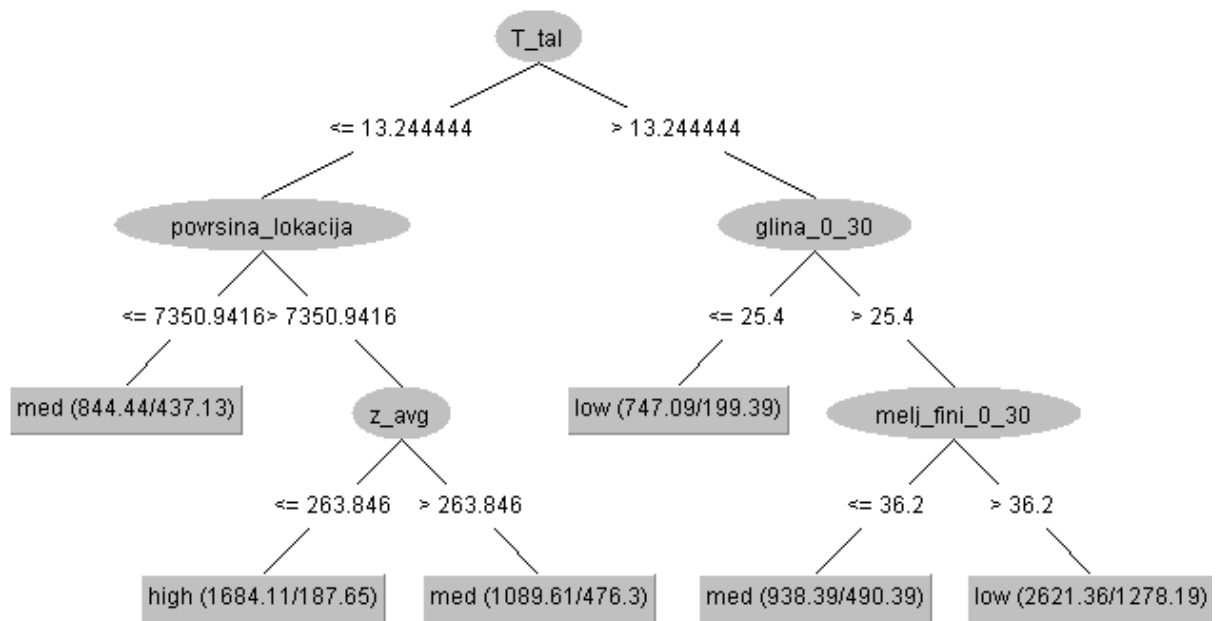
PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,493	med	0,662	0,325	0,510	0,662	0,576	0,321	0,715
0,641	low	0,739	0,176	0,621	0,739	0,675	0,536	0,866
0,740	high	0,529	0,040	0,890	0,529	0,664	0,567	0,821
0,629	Weighted Avg.	0,633	0,175	0,686	0,633	0,637	0,476	0,798

=== Confusion Matrix ===

```

  a   b   c  <-- classified as
1772 727 178 |   a = med
 562 1649 19 |   b = low
1143 278 1597 |   c = high

```



Mesec_15

VARIANTA 1

=== Run information ===

```
Scheme:          weka.classifiers.trees.J48 -C 0.25 -M 30
Relation:        mesec_15-weka.filters.unsupervised.attribute.Remove-R1-2,4,61
Instances:       267
Attributes:      58
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P2O5_0_30
K2O_0_30
Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
Cskupni_0_15
karbonati_0_15
Corg_0_15
org_snov_0_15
N_0_15
Corg_N_0_15
Ca_0_15
Mg_0_15
K_0_15
Na_0_15
baz_kationi_vsota_0_15
CEC_0_15
baz_kationi_zasicenost_0_15
Cskupni_15_30
karbonati_15_30
Corg_15_30
org_snov_15_30
N_15_30
Corg_N_15_30
Ca_15_30
Mg_15_30
K_15_30
Na_15_30
baz_kationi_vsota_15_30
CEC_15_30
baz_kationi_zasicenost_15_30
```

vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===

J48 pruned tree

```
T_tal <= 13.558065
| K_0_15 <= 0.46: low (35.36/18.36)
| K_0_15 > 0.46: high (85.91/16.45)
T_tal > 13.558065
| Na_15_30 <= 0.08
| | glina_0_30 <= 35.2: low (49.09/6.09)
| | glina_0_30 > 35.2
| | | povrsina_zaledje <= 49600: low (33.0/8.0)
| | | povrsina_zaledje > 49600: med (31.55/15.0)
| Na_15_30 > 0.08: med (32.09/11.55)
```

Number of Leaves : 6

Size of the tree : 11

Time taken to build model: 0 seconds

=== Stratified cross-validation ===
=== Summary ===

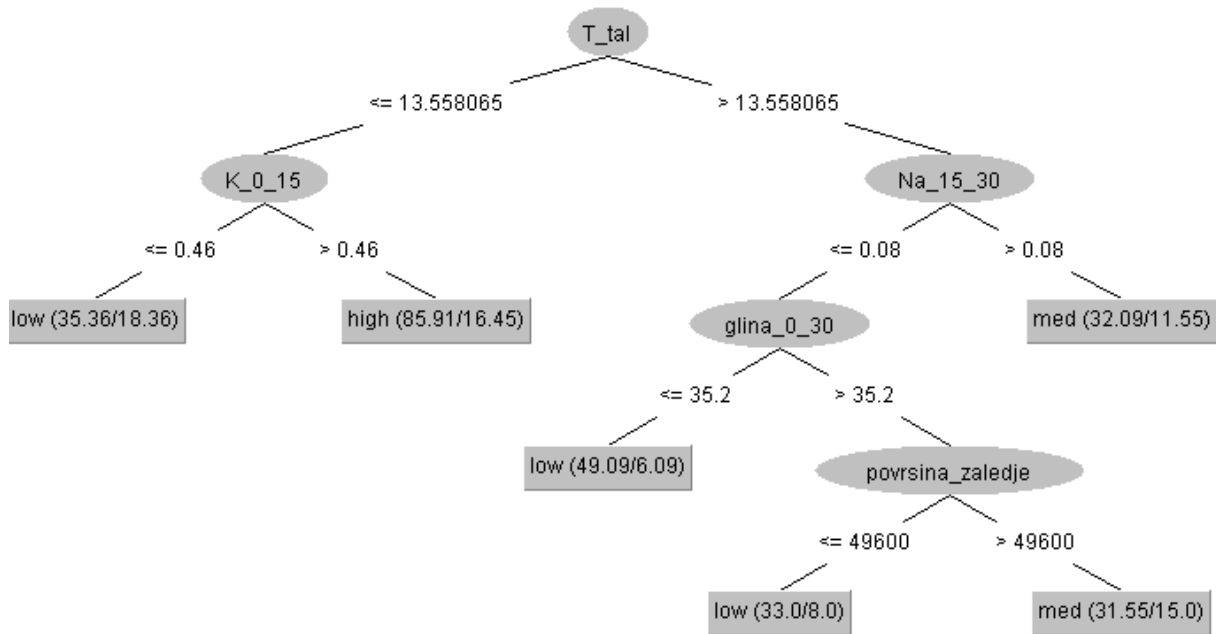
Correctly Classified Instances	183	68.5393 %
Incorrectly Classified Instances	84	31.4607 %
Kappa statistic	0.5157	
Mean absolute error	0.292	
Root mean squared error	0.3887	
Relative absolute error	66.2832 %	
Root relative squared error	82.8201 %	
Total Number of Instances	267	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,714	low	0,858	0,280	0,669	0,858	0,752	0,567	0,850
0,704	high	0,790	0,091	0,790	0,790	0,790	0,699	0,886
0,411	med	0,350	0,118	0,560	0,350	0,431	0,273	0,616
Weighted Avg. 0,620		0,685	0,174	0,673	0,685	0,667	0,519	0,791

=== Confusion Matrix ===

```
 a  b  c  <-- classified as
91  1 14 | a = low
 9 64  8 | b = high
36 16 28 | c = med
```



VARIANTA 2

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 27
Relation:    mesec_15-weka.filters.unsupervised.attribute.Remove-R1-2,4,61-
weka.filters.unsupervised.attribute.Remove-R32-57
Instances:   267
Attributes:  32
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P2O5_0_30
K2O_0_30
Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
vsebnost_vode_CLASS
Test mode:  10-fold cross-validation
  
```

=== Classifier model (full training set) ===

J48 pruned tree

```
T_tal <= 13.558065
|   K_0_30 <= 0.38: low (27.91/12.91)
|   K_0_30 > 0.38: high (93.36/21.91)
T_tal > 13.558065
|   K20_0_30 <= 22.6: low (58.09/10.09)
|   K20_0_30 > 22.6
|   |   nacin_kmet = K: low (40.55/12.55)
|   |   nacin_kmet = T: med (47.09/17.55)
```

Number of Leaves : 5

Size of the tree : 9

Time taken to build model: 0 seconds

=== Stratified cross-validation ===

=== Summary ===

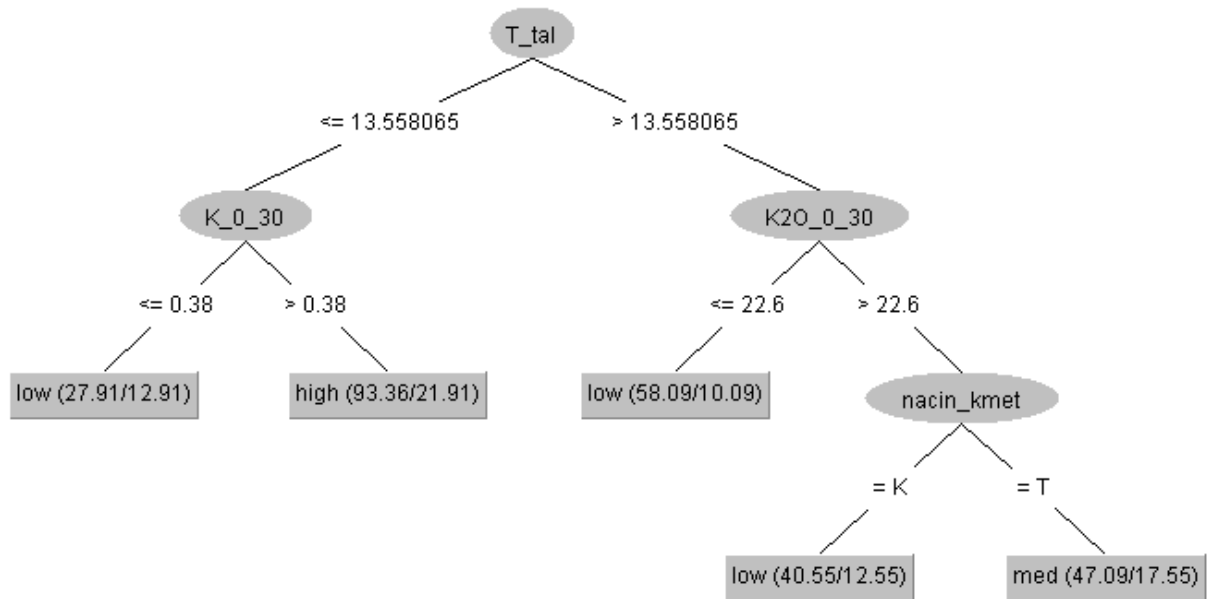
Correctly Classified Instances	185	69.2884 %
Incorrectly Classified Instances	82	30.7116 %
Kappa statistic	0.5265	
Mean absolute error	0.293	
Root mean squared error	0.3874	
Relative absolute error	66.5138 %	
Root relative squared error	82.5481 %	
Total Number of Instances	267	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,738	low	0,877	0,286	0,669	0,877	0,759	0,579	0,856
0,678	high	0,753	0,086	0,792	0,753	0,772	0,677	0,873
0,439	med	0,388	0,107	0,608	0,388	0,473	0,327	0,644
Weighted Avg. 0,630		0,693	0,172	0,688	0,693	0,677	0,533	0,798

=== Confusion Matrix ===

```
 a  b  c  <-- classified as
93  1 12 | a = low
12 61  8 | b = high
34 15 31 | c = med
```



VARIANTA 3

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 19
Relation:    mesec_15-weka.filters.unsupervised.attribute.Remove-R1-2,4,61-
weka.filters.unsupervised.attribute.Remove-R32-57-
weka.filters.unsupervised.attribute.Remove-R16-31
Instances:   267
Attributes:  16
             sezona
             padavine
             T_tal
             površina_lokacija
             površina_zaledje
             z_avg
             naklon_avg
             nacin_kmet
             gnojenje
             pesek_0_30
             melj_grobi_0_30
             melj_fini_0_30
             melj_skupni_0_30
             glina_0_30
             TRZ_0_30
             vsebnost_vode_CLASS
Test mode:   10-fold cross-validation
  
```

=== Classifier model (full training set) ===

J48 pruned tree

```

T_tal <= 13.558065
|  glina_0_30 <= 29.1
|  |  površina_lokacija <= 7350.9416: low (20.91/7.91)
|  |  površina_lokacija > 7350.9416: high (21.91/12.45)
|  glina_0_30 > 29.1: high (78.45/15.45)
T_tal > 13.558065
|  glina_0_30 <= 42
|  |  melj_grobi_0_30 <= 19.3: low (98.64/25.64)
|  |  melj_grobi_0_30 > 19.3: med (25.09/12.55)
  
```

| glina_0_30 > 42: med (22.0/7.0)

Number of Leaves : 6

Size of the tree : 11

Time taken to build model: 0 seconds

=== Stratified cross-validation ===
=== Summary ===

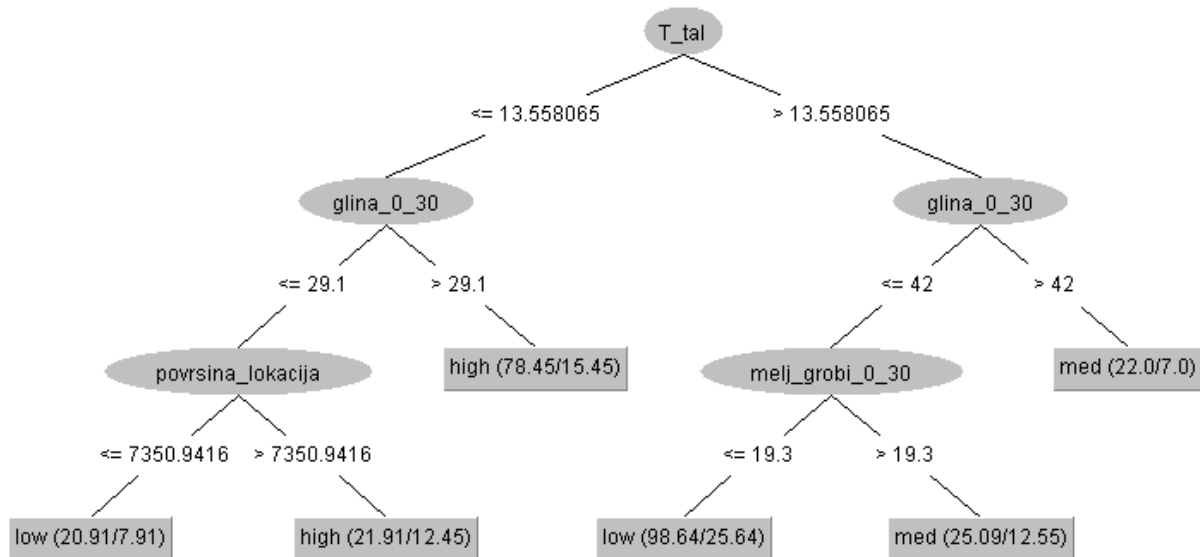
Correctly Classified Instances	172	64.4195 %
Incorrectly Classified Instances	95	35.5805 %
Kappa statistic	0.4523	
Mean absolute error	0.2992	
Root mean squared error	0.3953	
Relative absolute error	67.9175 %	
Root relative squared error	84.2378 %	
Total Number of Instances	267	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,732	low	0,830	0,298	0,647	0,830	0,727	0,521	0,847
0,683	high	0,753	0,113	0,744	0,753	0,748	0,638	0,884
0,406	med	0,288	0,139	0,469	0,288	0,357	0,176	0,615
Weighted Avg.		0,644	0,194	0,623	0,644	0,623	0,453	0,789
0,619								

=== Confusion Matrix ===

a	b	c	<-- classified as
88	1	17	a = low
11	61	9	b = high
37	20	23	c = med



Mesec_30

VARIANTA 1

=== Run information ===

```
Scheme:          weka.classifiers.trees.J48 -C 0.25 -M 27
Relation:        mesec_30-weka.filters.unsupervised.attribute.Remove-R1-2,4,61
Instances:       271
Attributes:      58
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P2O5_0_30
K2O_0_30
Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
Cskupni_0_15
karbonati_0_15
Corg_0_15
org_snov_0_15
N_0_15
Corg_N_0_15
Ca_0_15
Mg_0_15
K_0_15
Na_0_15
baz_kationi_vsota_0_15
CEC_0_15
baz_kationi_zasicenost_0_15
Cskupni_15_30
karbonati_15_30
Corg_15_30
org_snov_15_30
N_15_30
Corg_N_15_30
Ca_15_30
Mg_15_30
K_15_30
Na_15_30
baz_kationi_vsota_15_30
CEC_15_30
baz_kationi_zasicenost_15_30
```

```

vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===

```

```

J48 pruned tree
-----

```

```

T_tal <= 13.406129
| K_0_15 <= 0.46: med (37.38/10.92)
| K_0_15 > 0.46
| | Corg_N_0_15 <= 9.5: med (33.0/13.0)
| | Corg_N_0_15 > 9.5: high (53.92/5.46)
T_tal > 13.406129
| K_0_15 <= 0.52: low (57.62/7.54)
| K_0_15 > 0.52
| | nacin_kmet = K: low (40.54/17.54)
| | nacin_kmet = T: med (48.54/24.54)

```

```

Number of Leaves : 6

```

```

Size of the tree : 11

```

```

Time taken to build model: 0 seconds

```

```

=== Stratified cross-validation ===
=== Summary ===

```

```

Correctly Classified Instances      182      67.1587 %
Incorrectly Classified Instances    89      32.8413 %
Kappa statistic                     0.5011
Mean absolute error                 0.2839
Root mean squared error             0.3859
Relative absolute error             64.0551 %
Root relative squared error         81.9841 %
Total Number of Instances          271

```

```

=== Detailed Accuracy By Class ===

```

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,679	low	0,696	0,151	0,703	0,696	0,699	0,546	0,860
0,559	med	0,714	0,324	0,556	0,714	0,625	0,376	0,722
0,740	high	0,593	0,032	0,889	0,593	0,711	0,643	0,863
Weighted Avg.		0,672	0,178	0,705	0,672	0,676	0,514	0,811

```

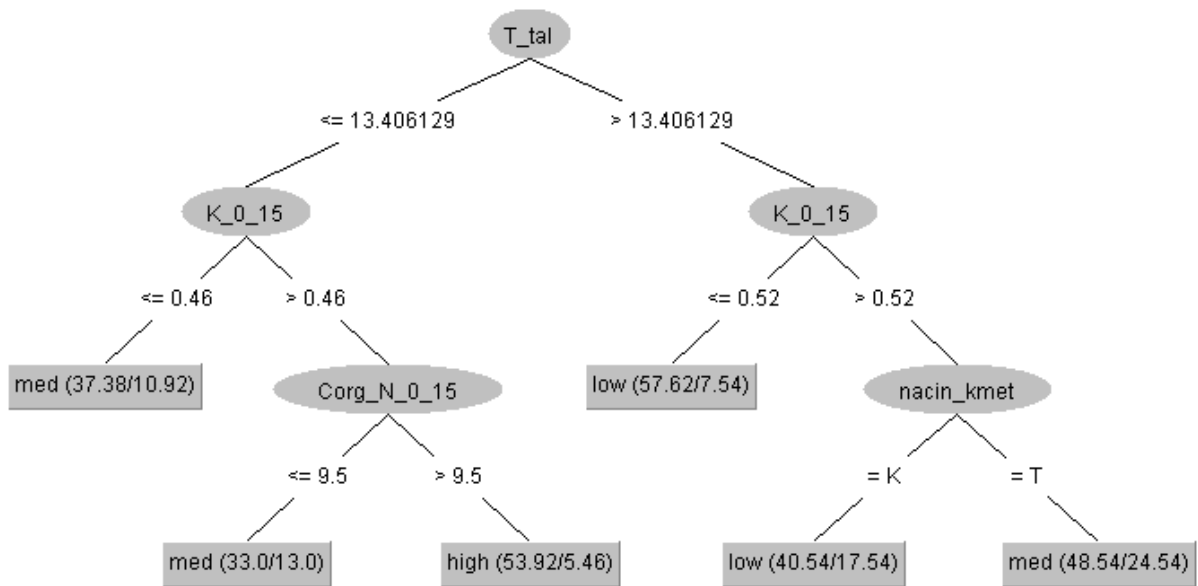
=== Confusion Matrix ===

```

```

  a  b  c  <-- classified as
64 28  0 | a = low
22 70  6 | b = med
 5 28 48 | c = high

```

VARIANTA 2

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 20
Relation:    mesec_30-weka.filters.unsupervised.attribute.Remove-R1-2,4,61-
weka.filters.unsupervised.attribute.Remove-R32-57
Instances:   271
Attributes:  32
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P2O5_0_30
K2O_0_30
Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
vsebnost_vode_CLASS
Test mode:  10-fold cross-validation
  
```

=== Classifier model (full training set) ===

J48 pruned tree

```
T_tal <= 13.406129
| N_0_30 <= 0.12: med (22.38/6.92)
| N_0_30 > 0.12
| | N_0_30 <= 0.26: high (78.92/17.46)
| | N_0_30 > 0.26: med (23.0/4.0)
T_tal > 13.406129
| K20_0_30 <= 22.6: low (58.08/8.0)
| K20_0_30 > 22.6
| | naklon_avg <= 6: med (24.54/9.54)
| | naklon_avg > 6: low (64.08/29.08)
```

Number of Leaves : 6

Size of the tree : 11

Time taken to build model: 0 seconds

=== Stratified cross-validation ===

=== Summary ===

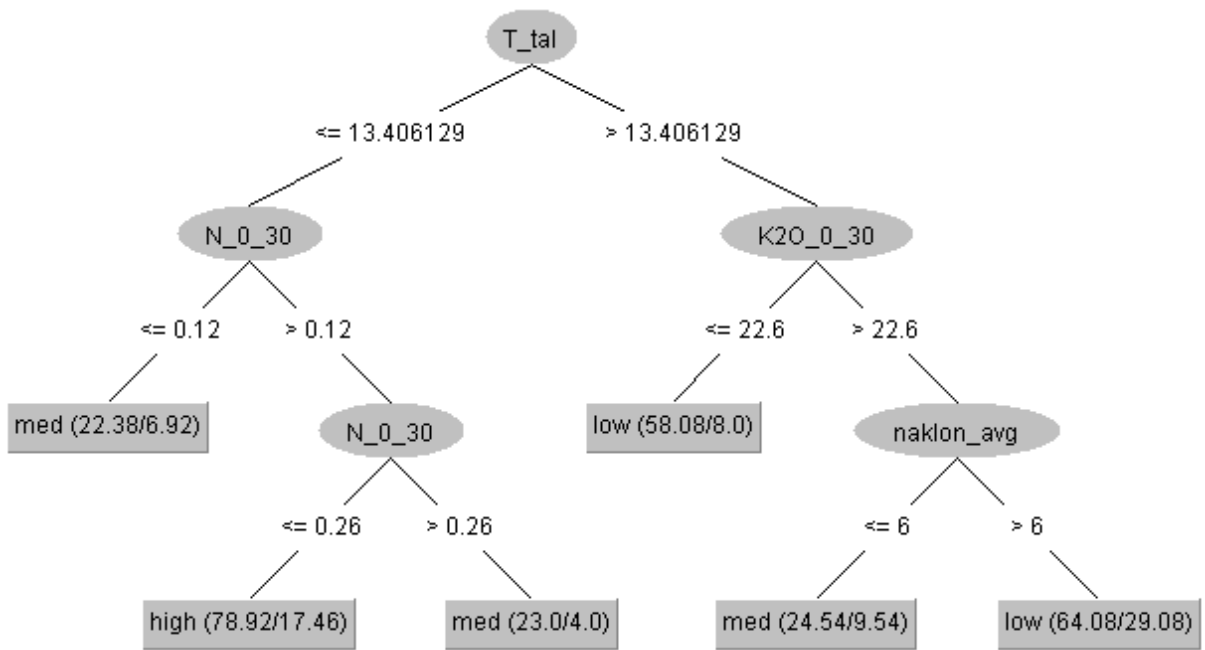
Correctly Classified Instances	180	66.4207 %
Incorrectly Classified Instances	91	33.5793 %
Kappa statistic	0.4919	
Mean absolute error	0.284	
Root mean squared error	0.3926	
Relative absolute error	64.0849 %	
Root relative squared error	83.4102 %	
Total Number of Instances	271	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,754	low	0,848	0,184	0,703	0,848	0,768	0,639	0,893
0,544	med	0,582	0,260	0,559	0,582	0,570	0,319	0,695
0,695	high	0,556	0,068	0,776	0,556	0,647	0,544	0,860
Weighted Avg.		0,664	0,177	0,673	0,664	0,661	0,495	0,812
0,660								

=== Confusion Matrix ===

```
 a  b  c  <-- classified as
78 14  0 | a = low
28 57 13 | b = med
 5 31 45 | c = high
```



Mesec_50

VARIANTA 1

=== Run information ===

```
Scheme:          weka.classifiers.trees.J48 -C 0.25 -M 32
Relation:        mesec_50-weka.filters.unsupervised.attribute.Remove-R1-2,4,61
Instances:       272
Attributes:      58
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P2O5_0_30
K2O_0_30
Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
Cskupni_0_15
karbonati_0_15
Corg_0_15
org_snov_0_15
N_0_15
Corg_N_0_15
Ca_0_15
Mg_0_15
K_0_15
Na_0_15
baz_kationi_vsota_0_15
CEC_0_15
baz_kationi_zasicenost_0_15
Cskupni_15_30
karbonati_15_30
Corg_15_30
org_snov_15_30
N_15_30
Corg_N_15_30
Ca_15_30
Mg_15_30
K_15_30
Na_15_30
baz_kationi_vsota_15_30
CEC_15_30
baz_kationi_zasicenost_15_30
```

vsebnost_vode_CLASS
Test mode: 10-fold cross-validation

=== Classifier model (full training set) ===

J48 pruned tree

```
sezona = rastna_sezona
| K_0_15 <= 0.46: low (45.0/12.0)
| K_0_15 > 0.46
| | baz_kationi_zasicenost_15_30 <= 70: high (36.0/17.0)
| | baz_kationi_zasicenost_15_30 > 70
| | | padavine <= 66: low (37.0/16.0)
| | | padavine > 66: med (44.0/21.0)
sezona = zimska_sezona
| K_0_15 <= 0.46: med (33.0/16.0)
| K_0_15 > 0.46: high (77.0/16.0)
```

Number of Leaves : 6

Size of the tree : 11

Time taken to build model: 0 seconds

=== Stratified cross-validation ===
=== Summary ===

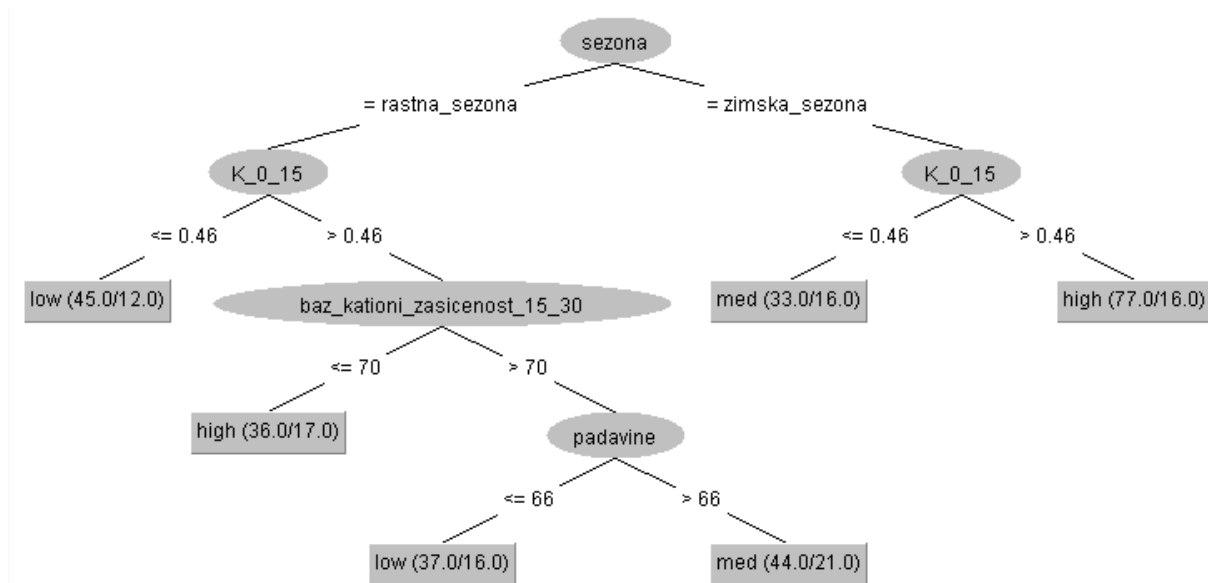
Correctly Classified Instances	142	52.2059 %
Incorrectly Classified Instances	130	47.7941 %
Kappa statistic	0.2818	
Mean absolute error	0.3486	
Root mean squared error	0.4345	
Relative absolute error	79.4836 %	
Root relative squared error	92.7914 %	
Total Number of Instances	272	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,588	low	0,690	0,194	0,557	0,690	0,616	0,466	0,822
0,379	med	0,351	0,326	0,363	0,351	0,357	0,025	0,538
0,675	high	0,561	0,200	0,645	0,561	0,600	0,372	0,794
Weighted Avg.		0,522	0,242	0,524	0,522	0,520	0,277	0,713
0,550								

=== Confusion Matrix ===

```
 a  b  c  <-- classified as
49 20  2 | a = low
30 33 31 | b = med
 9 38 60 | c = high
```



VARIANTA 2

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 20
Relation:    mesec_50-weka.filters.unsupervised.attribute.Remove-R1-2,4,61-
weka.filters.unsupervised.attribute.Remove-R32-57
Instances:   272
Attributes:  32
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
pH_v_CaCl2_0_30
Cskupni_0_30
karbonati_0_30
Corg_0_30
org_snov_0_30
N_0_30
Corg_N_0_30
P205_0_30
K2O_0_30
Ca_0_30
Mg_0_30
K_0_30
Na_0_30
baz_kationi_vsota_0_30
CEC_0_30
baz_kationi_zasicenost_0_30
vsebnost_vode_CLASS
Test mode:  10-fold cross-validation
  
```

=== Classifier model (full training set) ===

J48 pruned tree

```
K_0_30 <= 0.32: low (31.0/7.0)
K_0_30 > 0.32
|   sezona = rastna_sezona
|   |   T_tal <= 15.538819: med (38.27/18.27)
|   |   T_tal > 15.538819
|   |   |   P2O5_0_30 <= 10.5
|   |   |   |   Mg_0_30 <= 2.68
|   |   |   |   |   N_0_30 <= 0.17: low (21.0/7.0)
|   |   |   |   |   N_0_30 > 0.17: med (34.73/16.73)
|   |   |   |   |   Mg_0_30 > 2.68: med (26.0/13.0)
|   |   |   |   |   P2O5_0_30 > 10.5: low (24.0/5.0)
|   |   sezona = zimska_sezona
|   |   |   z_avg <= 263.846: high (58.0/6.0)
|   |   |   z_avg > 263.846: med (39.0/18.0)
```

Number of Leaves : 8

Size of the tree : 15

Time taken to build model: 0 seconds

=== Stratified cross-validation ===

=== Summary ===

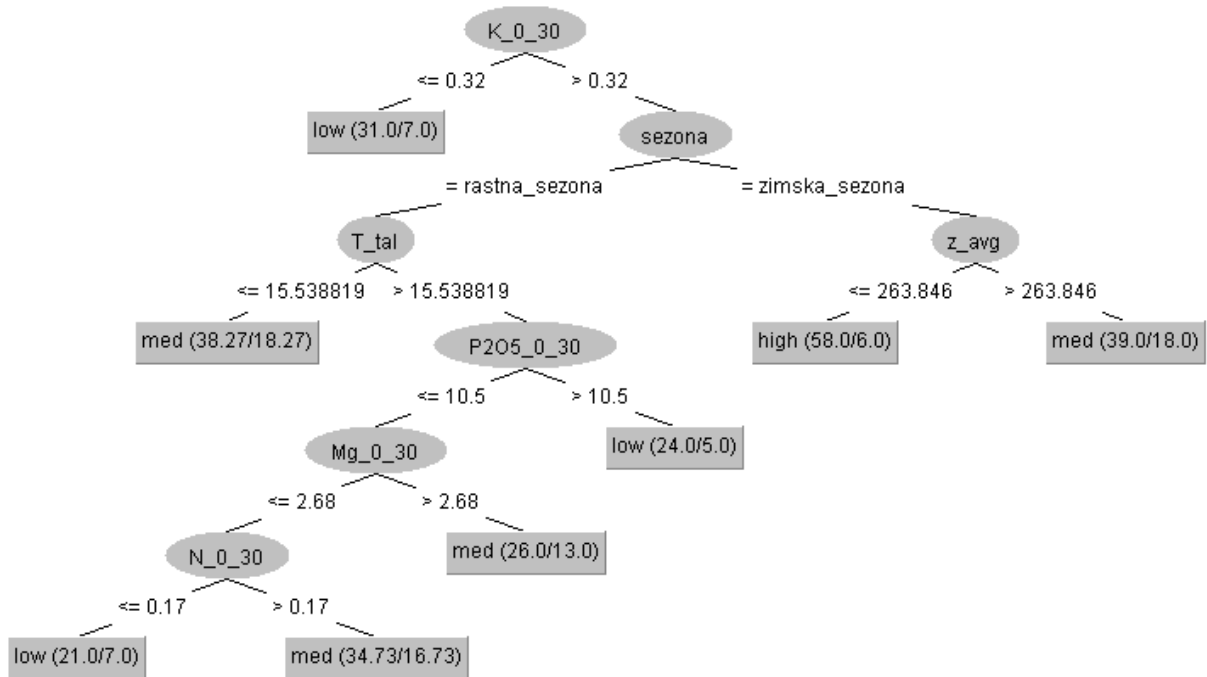
Correctly Classified Instances	154	56.6176 %
Incorrectly Classified Instances	118	43.3824 %
Kappa statistic	0.3481	
Mean absolute error	0.3222	
Root mean squared error	0.4173	
Relative absolute error	73.4679 %	
Root relative squared error	89.1177 %	
Total Number of Instances	272	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,618	low	0,648	0,154	0,597	0,648	0,622	0,481	0,862
0,440	med	0,574	0,382	0,443	0,574	0,500	0,184	0,628
0,703	high	0,505	0,115	0,740	0,505	0,600	0,429	0,814
Weighted Avg. 0,590		0,566	0,218	0,600	0,566	0,571	0,358	0,762

=== Confusion Matrix ===

```
 a  b  c  <-- classified as
46 24  1 | a = low
22 54 18 | b = med
 9 44 54 | c = high
```



VARIANTA 3

=== Run information ===

```

Scheme:      weka.classifiers.trees.J48 -C 0.25 -M 21
Relation:    mesec_50-weka.filters.unsupervised.attribute.Remove-R1-2,4,61-
weka.filters.unsupervised.attribute.Remove-R32-57-
weka.filters.unsupervised.attribute.Remove-R16-31
Instances:   272
Attributes:  16
sezona
padavine
T_tal
povrsina_lokacija
povrsina_zaledje
z_avg
naklon_avg
nacin_kmet
gnojenje
pesek_0_30
melj_grobi_0_30
melj_fini_0_30
melj_skupni_0_30
glina_0_30
TRZ_0_30
vsebnost_vode_CLASS
Test mode:  10-fold cross-validation

```

=== Classifier model (full training set) ===

J48 pruned tree

```

sezona = rastna_sezona
| glina_0_30 <= 25.4: low (27.0/7.0)
| glina_0_30 > 25.4
| | melj_fini_0_30 <= 36.2: high (36.0/17.0)
| | melj_fini_0_30 > 36.2
| | | T_tal <= 15.538819: med (25.26/11.26)
| | | T_tal > 15.538819

```



```

| | | | pesek_0_30 <= 0: med (35.74/17.74)
| | | | pesek_0_30 > 0: low (38.0/9.0)
sezona = zimska_sezona
| naklon_avg <= 15
| | naklon_avg <= 9: high (55.0/12.0)
| | naklon_avg > 9: med (32.0/11.0)
| naklon_avg > 15: high (23.0/7.0)

```

Number of Leaves : 8

Size of the tree : 15

Time taken to build model: 0 seconds

=== Stratified cross-validation ===
=== Summary ===

Correctly Classified Instances	157	57.7206 %
Incorrectly Classified Instances	115	42.2794 %
Kappa statistic	0.3574	
Mean absolute error	0.3273	
Root mean squared error	0.4234	
Relative absolute error	74.621 %	
Root relative squared error	90.4152 %	
Total Number of Instances	272	

=== Detailed Accuracy By Class ===

PRC Area	Class	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area
0,611	low	0,634	0,139	0,616	0,634	0,625	0,490	0,846
0,470	med	0,447	0,270	0,467	0,447	0,457	0,179	0,636
0,716	high	0,654	0,236	0,642	0,654	0,648	0,417	0,798
0,604	Weighted Avg.	0,577	0,223	0,575	0,577	0,576	0,354	0,754

=== Confusion Matrix ===

```

a b c <-- classified as
45 17 9 | a = low
22 42 30 | b = med
6 31 70 | c = high

```

