

Kardiyoloji Test Sonuçları

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Tablonun Oluşturulması

- Excel'de hazırlanan tabloyu .csv olarak kaydettim.
- Daha sonra .csv dosyası TextEdit programı ile açarak “;” karakterlerini “,” ile değiştirdim.

No.	1: Gender	2: ChestPain	3: FastingBloodSugarLess120	4: RestingEcg	5: Angina	6: Slope	7: Thal	8: Diagnosis
	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal	Nominal
1	Male	Abnorma...	FALSE	Normal	FALSE	Up	Nor...	Healthy
2	Male	Angina	FALSE	Hyp	TRUE	Flat	Nor...	Healthy
3	Male	_Asmpt...	FALSE	Hyp	FALSE	Flat	Rev	Sick
4	Male	_Asmpt...	TRUE	Hyp	TRUE	Down	Rev	Sick
5	Male	Abnorma...	FALSE	Hyp	FALSE	Flat	Nor...	Sick
6	Male	Angina	TRUE	Hyp	FALSE	Down	Fix	Healthy
7	Male	_Asmpt...	FALSE	Hyp	TRUE	Flat	Nor...	Sick
8	Male	_Asmpt...	FALSE	Hyp	TRUE	Flat	Rev	Sick
9	Male	NoTang	FALSE	Normal	FALSE	Down	Nor...	Healthy
...	Female	Abnorma...	FALSE	Hyp	FALSE	Up	Nor...	Healthy
...	Female	_Asmpt...	FALSE	Hyp	FALSE	Down	Nor...	Sick
...	Female	_Asmpt...	FALSE	Normal	TRUE	Up	Nor...	Healthy
...	Female	Abnorma...	FALSE	Hyp	FALSE	Flat	Nor...	Healthy
...	Female	Angina	FALSE	Normal	FALSE	Down	Nor...	Healthy
...	Male	_Asmpt...	FALSE	Normal	FALSE	Up	Nor...	Healthy
...	Male	_Asmpt...	FALSE	Hyp	TRUE	Flat	Rev	Sick
...	Male	_Asmpt...	TRUE	Normal	TRUE	Up	Rev	Sick
...	Male	_Asmpt...	FALSE	Normal	FALSE	Flat	Rev	Healthy
...	Male	NoTang	FALSE	Normal	TRUE	Up	Nor...	Healthy
...	Male	_Asmpt...	FALSE	Normal	FALSE	Up	Nor...	Healthy
...	Male	_Asmpt...	FALSE	Hyp	TRUE	Flat	Rev	Sick
...	Female	_Asmpt...	FALSE	Hyp	FALSE	Flat	Rev	Sick
...	Female	Abnorma...	FALSE	Normal	FALSE	Up	Nor...	Healthy
...	Male	NoTang	TRUE	Normal	FALSE	Up	Nor...	Healthy
...	Female	_Asmpt...	FALSE	Hyp	FALSE	Up	Nor...	Sick
...	Male	NoTang	FALSE	Hyp	FALSE	Flat	Rev	Sick
...	Female	NoTang	TRUE	Hyp	FALSE	Up	Nor...	Healthy
...	Female	Abnorma...	FALSE	Normal	FALSE	Up	Nor...	Healthy
...	Male	_Asmpt...	FALSE	Normal	FALSE	Up	Rev	Healthy
...	Male	_Asmpt...	FALSE	Hyp	FALSE	Up	Nor...	Sick
...	Male	Abnorma...	FALSE	Hyp	FALSE	Up	Nor...	Healthy
...	Male	_Asmpt...	FALSE	Normal	TRUE	Up	Rev	Sick
...	Male	_Asmpt...	FALSE	Hyp	TRUE	Flat	Rev	Sick
...	Male	_Asmpt...	FALSE	Hyp	FALSE	Up	Rev	Sick
...	Female	_Asmpt...	FALSE	Normal	TRUE	Flat	Rev	Sick
...	Female	NoTang	FALSE	Hyp	TRUE	Down	Nor...	Healthy
...	Female	NoTang	TRUE	Normal	FALSE	Up	Nor...	Healthy
...	Male	_Asmpt...	FALSE	Hyp	TRUE	Flat	Rev	Sick
...	Male	NoTang	FALSE	Hyp	FALSE	Flat	Nor...	Sick
...	Male	NoTang	FALSE	Hyp	FALSE	Up	Rev	Healthy
...	Male	_Asmpt...	FALSE	Hyp	TRUE	Down	Rev	Sick
...	Female	NoTang	FALSE	Normal	FALSE	Up	Nor...	Healthy
...	Male	_Asmpt...	TRUE	Normal	FALSE	Flat	Rev	Sick
...	Male	_Asmpt...	FALSE	Normal	TRUE	Flat	Rev	Sick
...	Male	_Asmpt...	FALSE	Hyp	FALSE	Up	Fix	Sick
...	Male	_Asmpt...	FALSE	Hyp	FALSE	Up	Nor...	Sick
...	Female	NoTang	FALSE	Hyp	FALSE	Up	Nor...	Healthy
...	Male	_Asmpt...	FALSE	Hyp	FALSE	Up	Rev	Sick
...	Male	_Asmpt...	FALSE	Hyp	TRUE	Flat	Nor...	Healthy
...	Female	_Asmpt...	FALSE	Hyp	FALSE	Flat	Nor...	Healthy
...	Male	NoTang	TRUE	Hyp	TRUE	Flat	Rev	Sick
...	Male	Abnorma...	FALSE	Normal	FALSE	Up	Nor...	Healthy
...	Male	NoTang	FALSE	Hyp	FALSE	Up	Nor...	Healthy

Tablonun Weka'da açılması

Weka Explorer

Preprocess | Classify | Cluster | Associate | Select attributes | Visualize

Open file... | Open URL... | Open DB... | Generate... | Undo | Edit... | Save...

Filter: Choose None Apply

Current relation
Relation: cardiology_train
Instances: 212
Attributes: 8
Sum of weights: 212

Attributes
All | None | Invert | Pattern

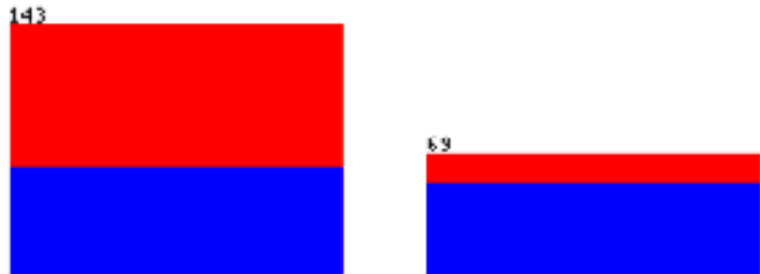
No.	Name
1	<input checked="" type="checkbox"/> Gender
2	<input type="checkbox"/> ChestPain
3	<input type="checkbox"/> FastingBloodSugarLess120
4	<input type="checkbox"/> RestingEcg
5	<input type="checkbox"/> Angina
6	<input type="checkbox"/> Slope
7	<input type="checkbox"/> Thal
8	<input type="checkbox"/> Diagnosis

Remove

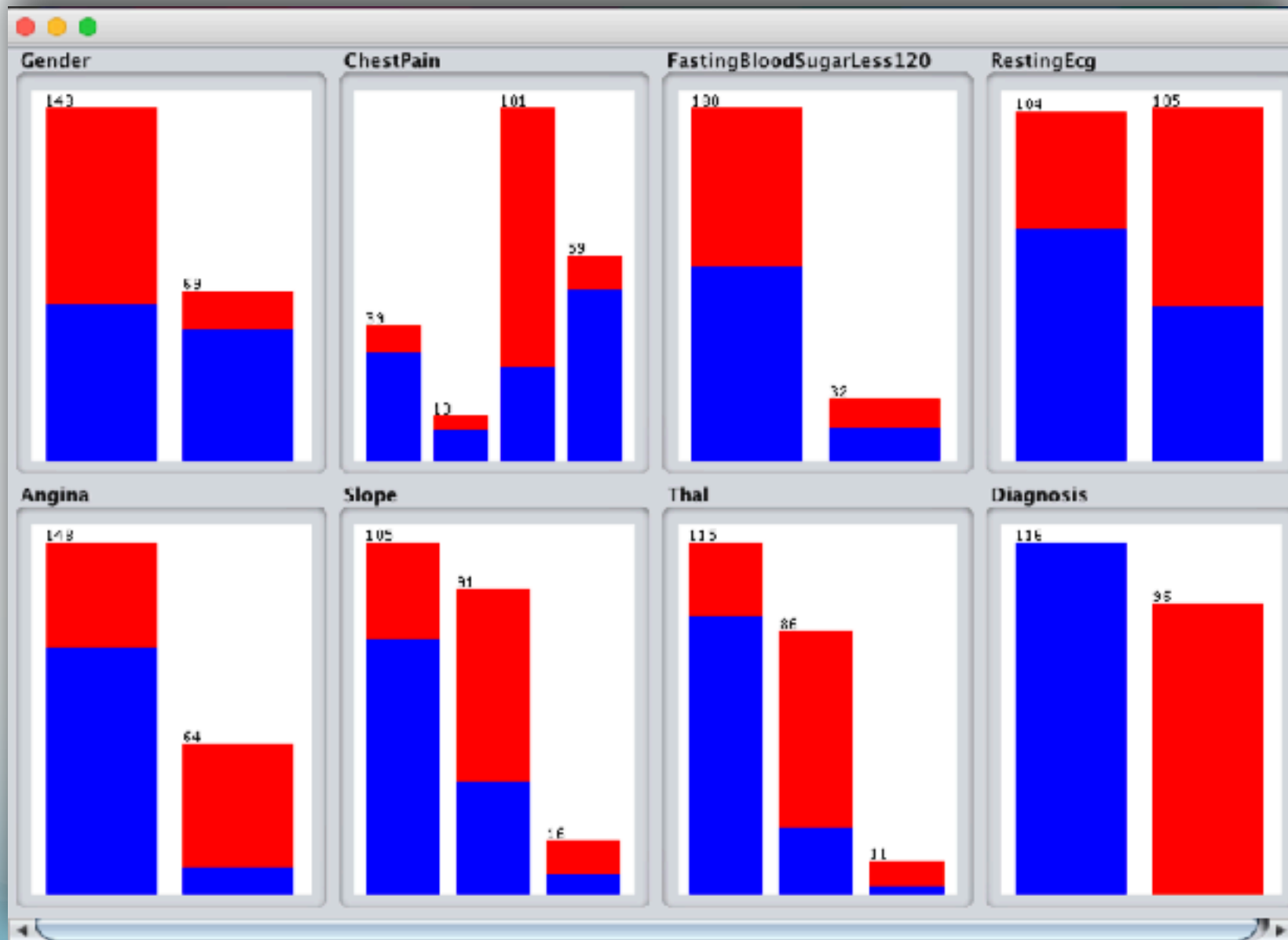
Selected attribute
Name: Gender
Missing: 0 (0%)
Distinct: 2
Type: Nominal
Unique: 0 (0%)

No.	Label	Count	Weight
1	Male	143	143.0
2	Female	69	69.0

Class: Diagnosis (Nom) Visualize All



Status: DK Log x 0



Sınıflandırma

Classifier output

```

Angina = FALSE
|  Thal = Normal: Healthy (99.0/15.0)
|  Thal = Rev
|  |  ChestPain = Abnormal_Angina: Healthy (6.0/3.0)
|  |  ChestPain = Angina: Healthy (3.0)
|  |  ChestPain = _Asymptomatic: Sick (20.0/4.0)
|  |  ChestPain = NoTang
|  |  |  Slope = Up: Healthy (4.0)
|  |  |  Slope = Flat: Sick (8.0/3.0)
|  |  |  Slope = Down: Healthy (1.0)
|  Thal = Fix
|  |  ChestPain = Abnormal_Angina: Healthy (1.0)
|  |  ChestPain = Angina: Healthy (2.0)
|  |  ChestPain = _Asymptomatic: Sick (3.0)
|  |  ChestPain = NoTang: Sick (1.0)

```

```

Angina = TRUE
|  ChestPain = Abnormal_Angina: Healthy (2.0/1.0)
|  ChestPain = Angina: Healthy (2.0/1.0)
|  ChestPain = _Asymptomatic: Sick (53.0/5.0)
|  ChestPain = NoTang: Healthy (7.0/2.0)

```

Number of leaves : 15

Size of the tree : 21

Time taken to build model: 0.01 seconds

--- Stratified cross-validation ---

=== Summary ===

Correctly Classified Instances	150	75.4717 %
Kappa statistic	0.4996	
Mean absolute error	0.3231	
Root mean squared error	0.4279	
Relative absolute error	65.1714 %	
Root relative squared error	85.9544 %	
Total Number of Instances	212	

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0,628	0,333	0,750	0,826	0,787	0,503	0,783	0,752	Healthy
	0,667	0,172	0,762	0,567	0,711	0,503	0,783	0,731	Sick
Weighted Avg.	0,755	0,260	0,755	0,755	0,753	0,503	0,783	0,743	

=== Confusion Matrix ===

```

a  b  <-- classified as
96 20 1  a = Healthy

```

Sınıflandırma

```
SwollenGlands
Congestion
Headache
Diagnosis
Test modes: 10-fold cross-validation

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

J48 pruned tree
-----

SwollenGlands = Yes: Streptthroat (3.0)
SwollenGlands = No
|  Fever = Yes: Cold (4.0)
|  Fever = No: Allergy (3.0)

Number of Leaves  :    3
Size of the tree  :    5

Time taken to build model: 0 seconds

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

Correctly Classified Instances      9          90      %
Kappa statistic                    0.8452
Mean absolute error                 0.0557
Root mean squared error            0.2382
Relative absolute error            13.9535 %
Root relative squared error        50.8381 %
Total Number of Instances         10

=== Detailed Accuracy By Class ===
```

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	AUC Area	Class
	0.557	0.000	1.000	0.667	0.800	0.754	0.833	0.767	Streptthroat
	1.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000	Allergy
	1.000	0.167	0.800	1.000	0.889	0.815	0.917	0.800	Cold
Weighted Avg.	0.888	0.067	0.920	0.800	0.896	0.855	0.917	0.850	

```

=== Confusion Matrix ===

 a b c  <-- classified as
2 0 1 | a = Streptthroat
0 3 0 | b = Allergy
0 0 4 | c = Cold
```

Karar Ağacı

- “Classify” sekmesine tıkladıktan sonra “Classifier” bölümünden “J48” karar ağacı algoritmasını seçtiğimizde ve Start butonuna bastığımızda “trees J48” sonuç listesine eklenmektedir, sağ tıklayıp “Visualize tree” seçeneğini seçtiğimizde karar ağacı karşımıza çıkacaktır.

