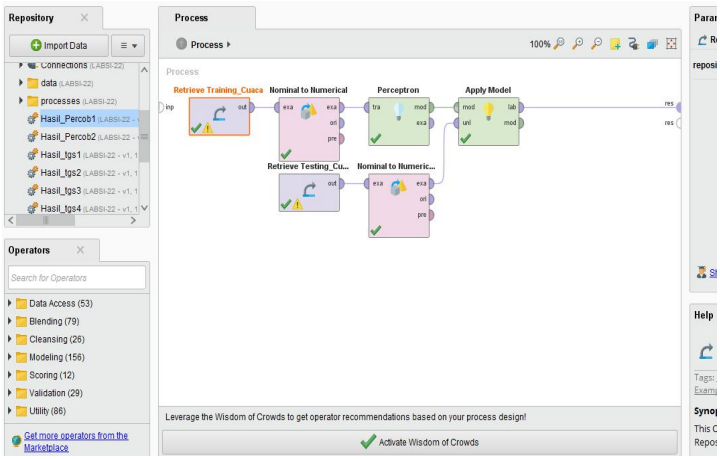
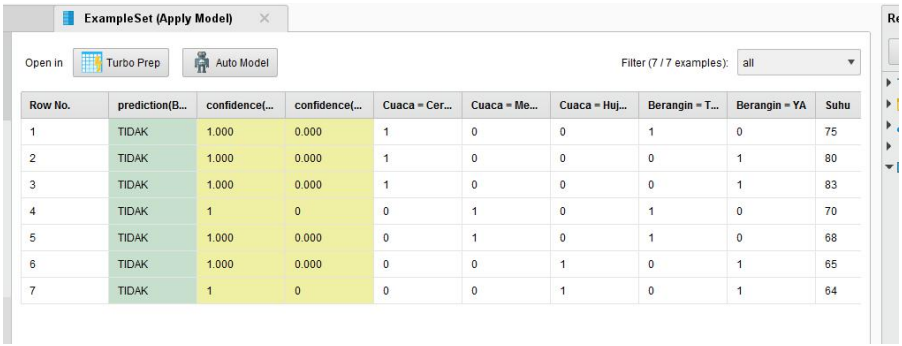
NAMA : Prihadina Ayunia W
NIM : L200170007
KELAS : A

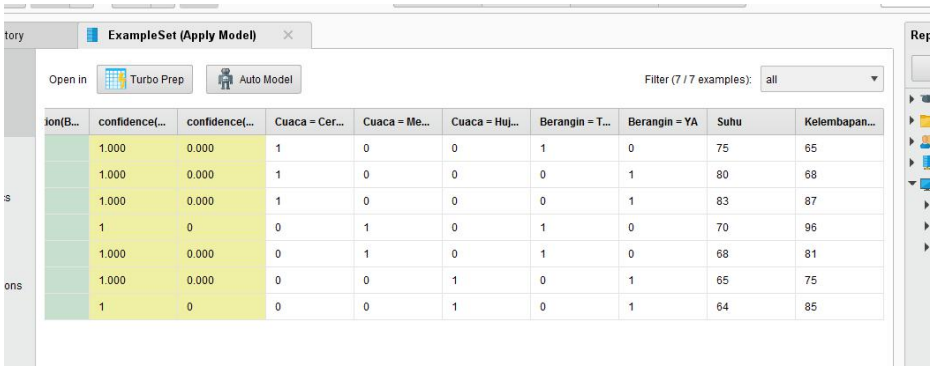
MODUL 13

1. Prediksi Nilai Kelas Atribut dengan Neuron Perceptron



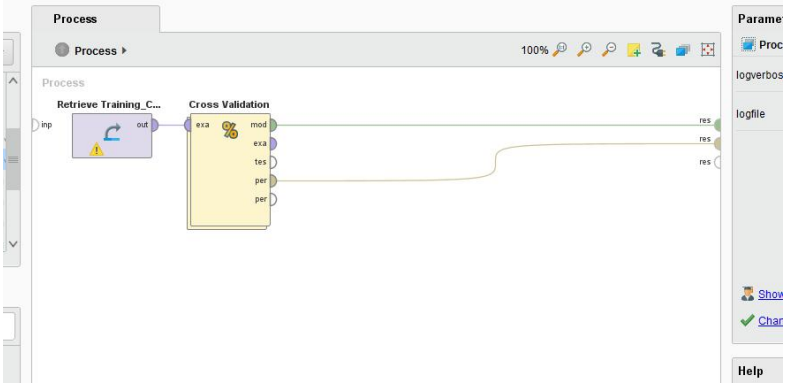


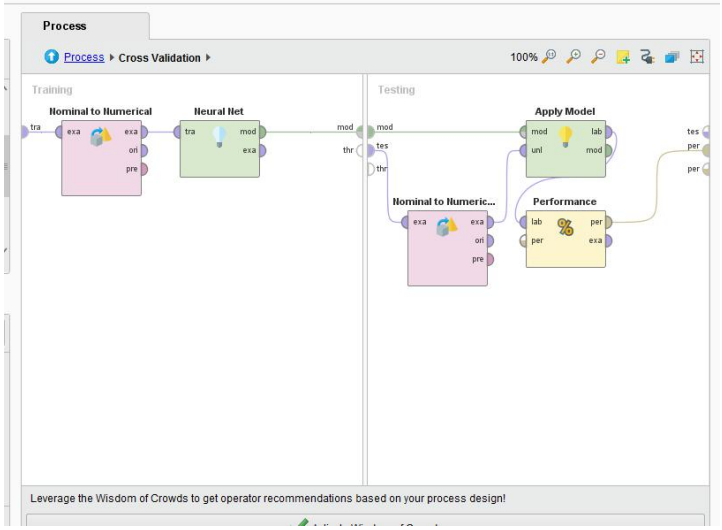
Row No.	prediction(B...	confidence(...	confidence(...	Cuaca = Cer...	Cuaca = Me...	Cuaca = Huj...	Berangin = T...	Berangin = YA	Suhu
1	TIDAK	1.000	0.000	1	0	0	1	0	75
2	TIDAK	1.000	0.000	1	0	0	0	1	80
3	TIDAK	1.000	0.000	1	0	0	0	1	83
4	TIDAK	1	0	0	1	0	1	0	70
5	TIDAK	1.000	0.000	0	1	0	1	0	68
6	TIDAK	1.000	0.000	0	0	1	0	1	65
7	TIDAK	1	0	0	0	1	0	1	64

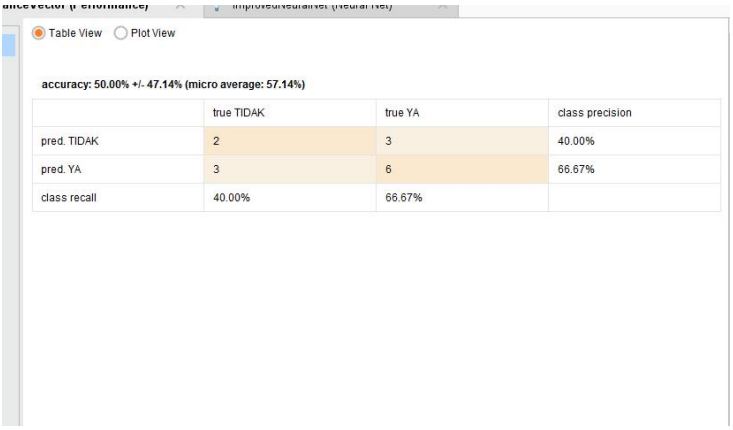


ion(B...	confidence(...	confidence(...	Cuaca = Cer...	Cuaca = Me...	Cuaca = Huj...	Berangin = T...	Berangin = YA	Suhu	Kelembapan...
	1.000	0.000	1	0	0	1	0	75	65
	1.000	0.000	1	0	0	0	1	80	68
	1.000	0.000	1	0	0	0	1	83	87
	1	0	0	1	0	1	0	70	96
	1.000	0.000	0	1	0	1	0	68	81
	1.000	0.000	0	0	1	0	1	65	75
	1	0	0	0	1	0	1	64	85

2. Mengetahui Nilai Performance Vector pada Jaringan Saraf Tiruan



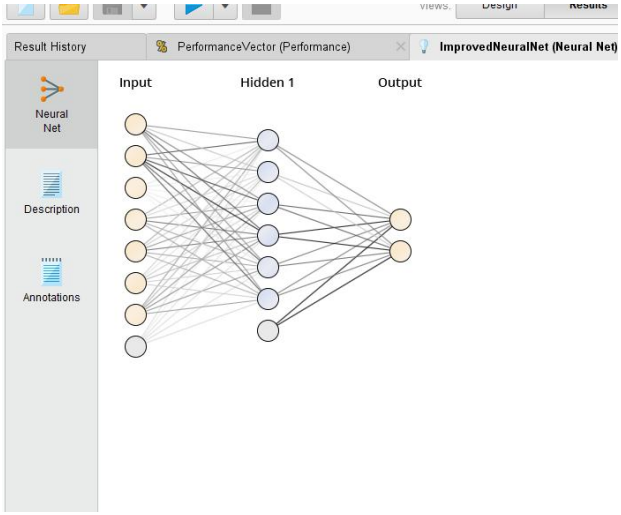


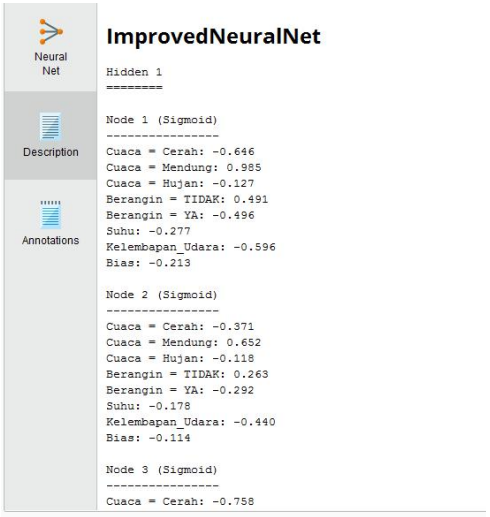


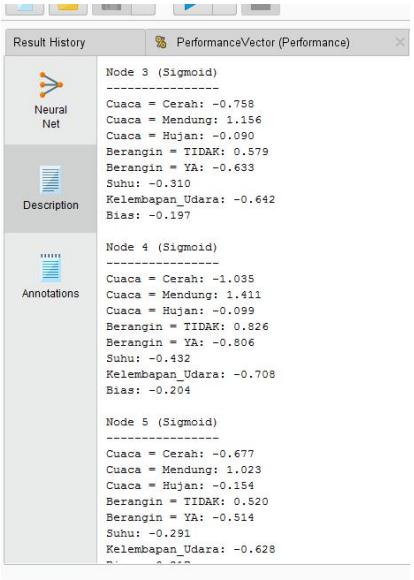
	true TIDAK	true YA	class precision
pred. TIDAK	2	3	40.00%
pred. YA	3	6	66.67%
class recall	40.00%	66.67%	

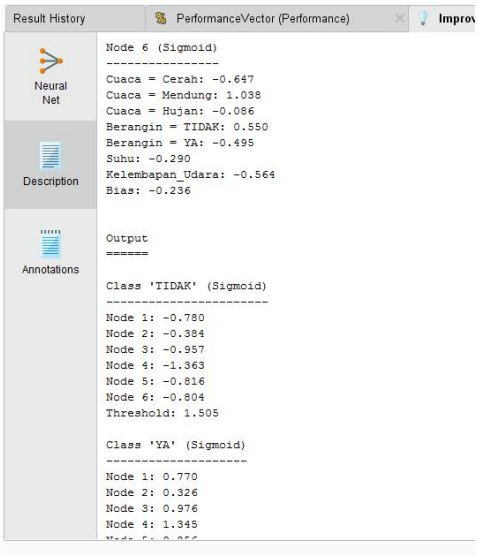
Tab ImprovedNeuralNet (Neural Net), memperlihatkan arsitektur syaraf.

a) Neural Net, digunakan untuk melihat bentuk arsitektur JST



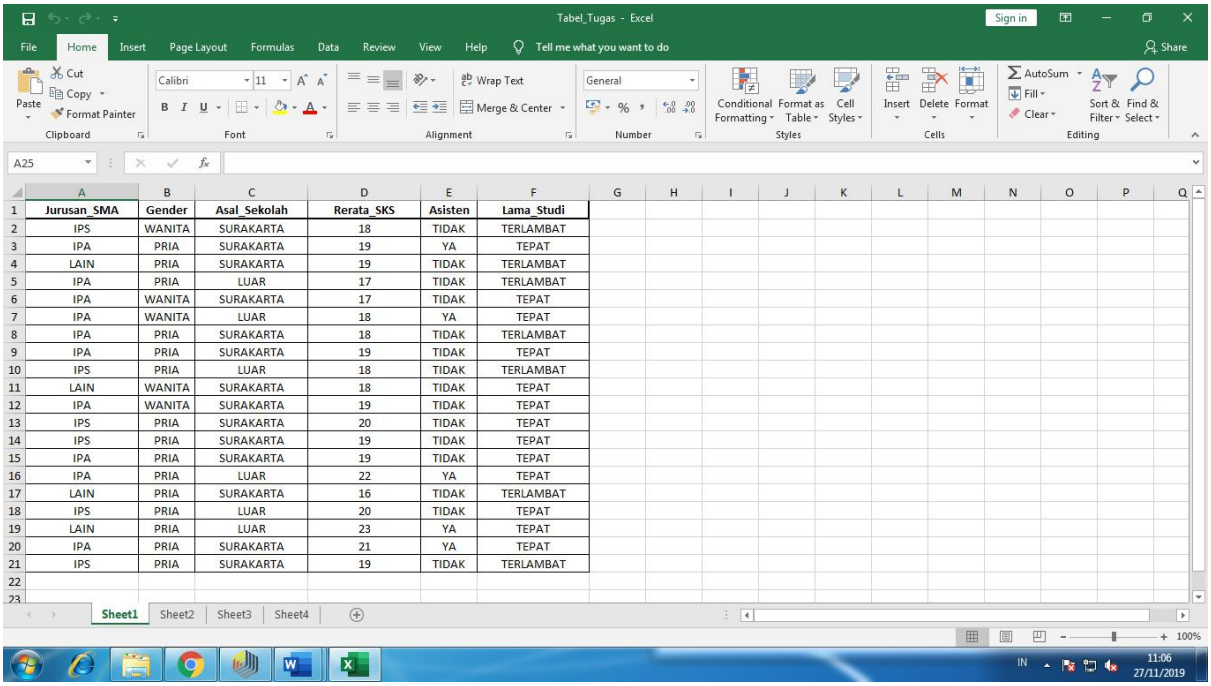




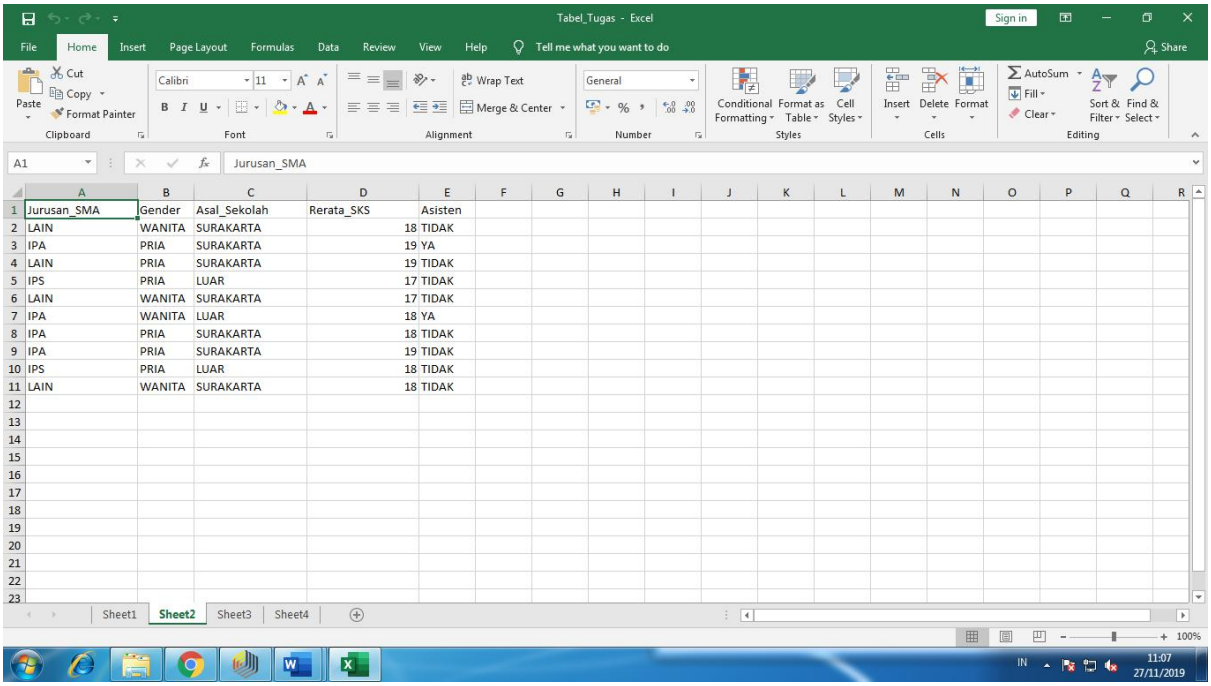


TUGAS

1. File excel sebagai data training dan data testing

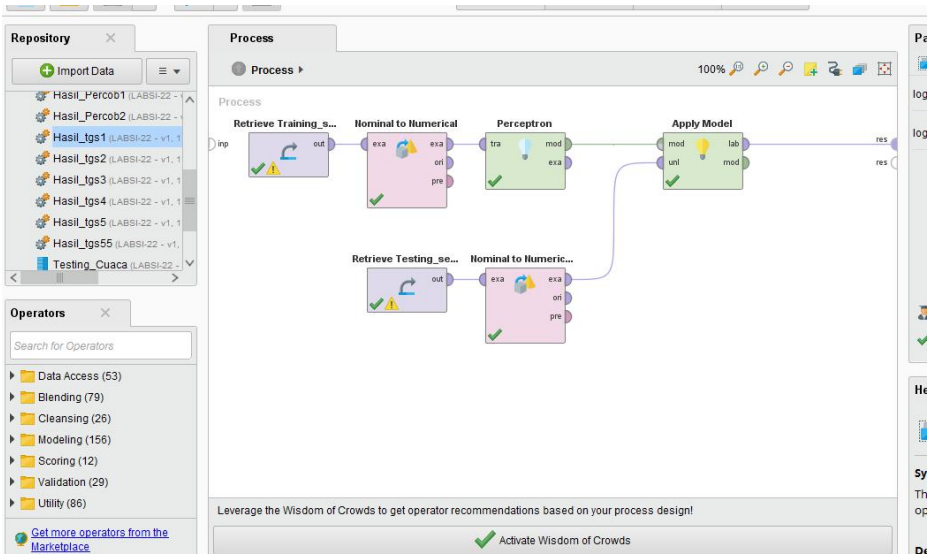


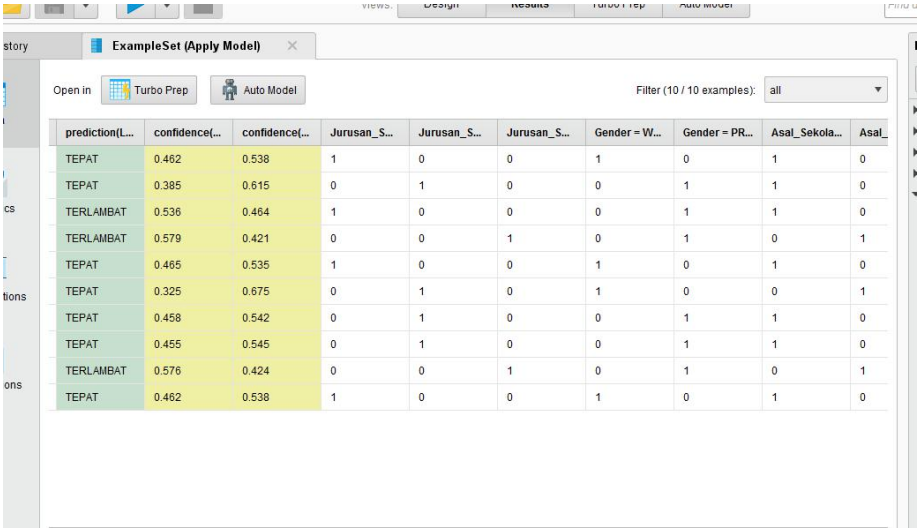
Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten	Lama_Studi
IPS	WANITA	SURAKARTA	18	TIDAK	TERLAMBAT
IPA	PRIA	SURAKARTA	19	YA	TEPAT
LAIN	PRIA	SURAKARTA	19	TIDAK	TERLAMBAT
IPA	PRIA	LUAR	17	TIDAK	TERLAMBAT
IPA	WANITA	SURAKARTA	17	TIDAK	TEPAT
IPA	WANITA	LUAR	18	YA	TEPAT
IPA	PRIA	SURAKARTA	18	TIDAK	TERLAMBAT
IPA	PRIA	SURAKARTA	19	TIDAK	TEPAT
IPS	PRIA	LUAR	18	TIDAK	TERLAMBAT
LAIN	WANITA	SURAKARTA	18	TIDAK	TEPAT
IPA	WANITA	SURAKARTA	19	TIDAK	TEPAT
IPS	PRIA	SURAKARTA	20	TIDAK	TEPAT
IPS	PRIA	SURAKARTA	19	TIDAK	TEPAT
IPA	PRIA	SURAKARTA	19	TIDAK	TEPAT
IPA	PRIA	LUAR	22	YA	TEPAT
LAIN	PRIA	SURAKARTA	16	TIDAK	TERLAMBAT
IPS	PRIA	LUAR	20	TIDAK	TEPAT
LAIN	PRIA	LUAR	23	YA	TEPAT
IPA	PRIA	SURAKARTA	21	YA	TEPAT
IPS	PRIA	SURAKARTA	19	TIDAK	TERLAMBAT



Jurusan_SMA	Gender	Asal_Sekolah	Rerata_SKS	Asisten
LAIN	WANITA	SURAKARTA	18	TIDAK
IPA	PRIA	SURAKARTA	19	YA
LAIN	PRIA	SURAKARTA	19	TIDAK
IPS	PRIA	LUAR	17	TIDAK
LAIN	WANITA	SURAKARTA	17	TIDAK
IPA	WANITA	LUAR	18	YA
IPA	PRIA	SURAKARTA	18	TIDAK
IPA	PRIA	SURAKARTA	19	TIDAK
IPS	PRIA	LUAR	18	TIDAK
LAIN	WANITA	SURAKARTA	18	TIDAK

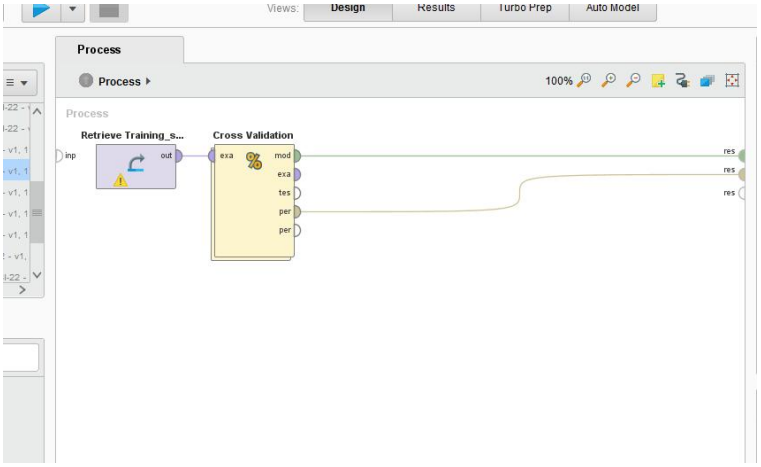
2. Hasil prediksi terhadap data testing lama studi mahasiswa dengan menggunakan model Perception





prediction(L...	confidence(...	confidence(...	Jurusan_S...	Jurusan_S...	Jurusan_S...	Gender = W...	Gender = PR...	Asal_Sekola...	Asal_
TEPAT	0.462	0.538	1	0	0	1	0	1	0
TEPAT	0.385	0.615	0	1	0	0	1	1	0
TERLAMBAT	0.536	0.464	1	0	0	0	1	1	0
TERLAMBAT	0.579	0.421	0	0	1	0	1	0	1
TEPAT	0.465	0.535	1	0	0	1	0	1	0
TEPAT	0.325	0.675	0	1	0	1	0	0	1
TEPAT	0.458	0.542	0	1	0	0	1	1	0
TEPAT	0.455	0.545	0	1	0	0	1	1	0
TERLAMBAT	0.576	0.424	0	0	1	0	1	0	1
TEPAT	0.462	0.538	1	0	0	1	0	1	0

3. Nilai tingkat akurasi, presisi, dan recall dengan menggunakan Performance Vector



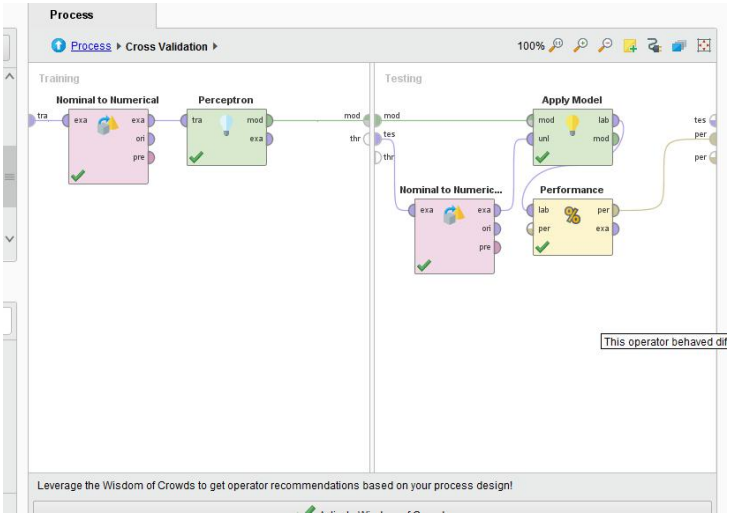


Table View Plot View

accuracy: 40.00% +/- 31.62% (micro average: 40.00%)

	true TERLAMBAT	true TEPAT	class precision
pred. TERLAMBAT	4	9	30.77%
pred. TEPAT	3	4	57.14%
class recall	57.14%	30.77%	

Result History | PerformanceVector (Performance) | Hyperplane (Perceptron)

Performance

Description

Annotations

PerformanceVector

```
PerformanceVector:
accuracy: 40.00% +/- 31.62% (micro average: 40.00%)
ConfusionMatrix:
True:   TERLAMBAT       TEPAT
TERLAMBAT:      4       9
TEPAT:  3       4
```

Hyperplane

```
Hyperplane seperating TEPAT and TERLAMBAT.
Intercept: -0.011019882381776685
Coefficients:
w(Jurusan_SMA = IPS) = -0.189
w(Jurusan_SMA = IPA) = 0.251
w(Jurusan_SMA = LAIN) = -0.073
w(Gender = WANITA) = 0.150
w(Gender = PRIA) = -0.161
w(Asal_Sekolah = SURAKARTA) = 0.012
w(Asal_Sekolah = LUAR) = -0.023
w(Asisten = TIDAK) = -0.150
w(Asisten = YA) = 0.139
w(Rerata_SKS) = 0.013
```

Result History | PerformanceVector (Performance)

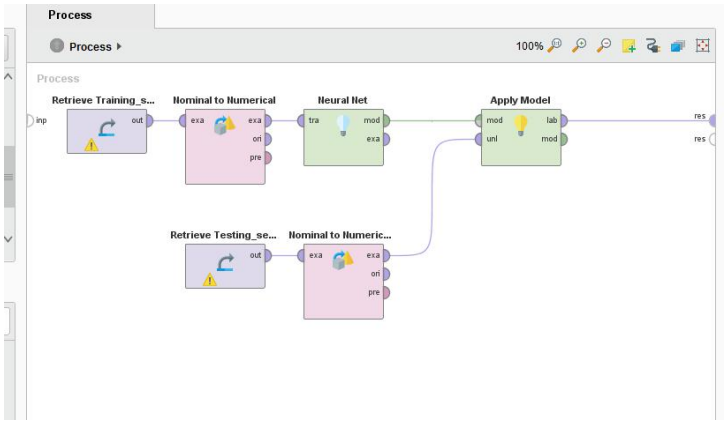
Description

Data

Annotations

Attribute	Weight
Jurusan...	-0.189
Jurusan...	0.251
Jurusan...	-0.073
Gender ...	0.150
Gender ...	-0.161
Asal_Se...	0.012
Asal_Se...	-0.023
Asisten ...	-0.150
Asisten ...	0.139
Rerata_...	0.013

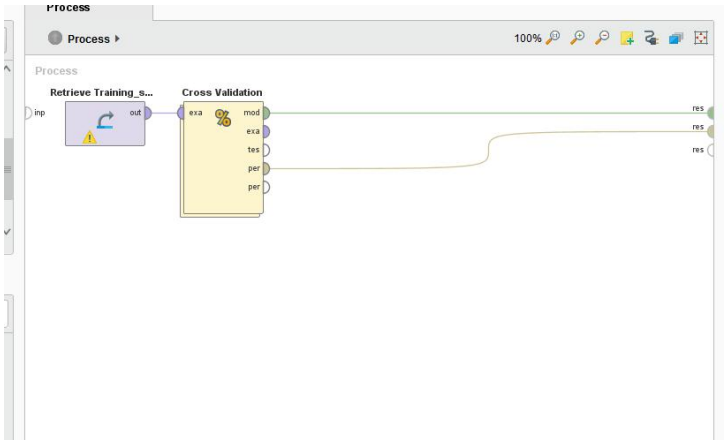
4. Ganti operator Perception menjadi Natural Net

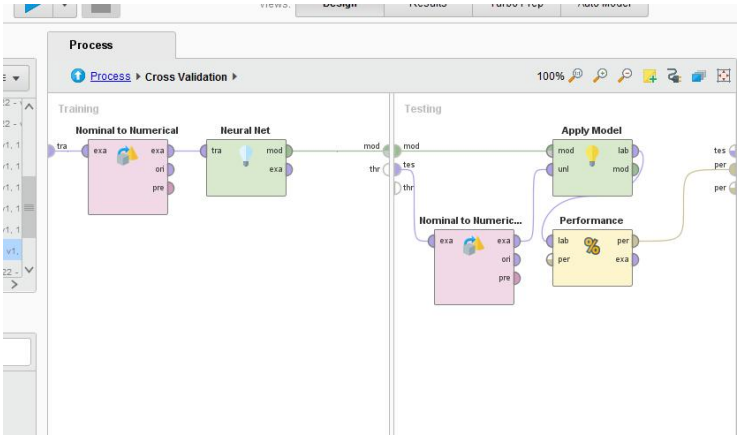


Open in Turbo Prep Auto Model Filter (10 / 10 examples): all

prediction(L...	confidence(...	confidence(...	Jurusan_S...	Jurusan_S...	Jurusan_S...	Gender = W...	Gender = PR...	Asal_Sekola...	Asal_
TEPAT	0.331	0.669	1	0	0	1	0	1	0
TEPAT	0.027	0.973	0	1	0	0	1	1	0
TERLAMBAT	0.588	0.412	1	0	0	0	1	1	0
TERLAMBAT	0.679	0.321	0	0	1	0	1	0	1
TEPAT	0.399	0.601	1	0	0	1	0	1	0
TEPAT	0.032	0.968	0	1	0	1	0	0	1
TEPAT	0.399	0.601	0	1	0	0	1	1	0
TEPAT	0.325	0.675	0	1	0	0	1	1	0
TERLAMBAT	0.655	0.345	0	0	1	0	1	0	1
TEPAT	0.331	0.669	1	0	0	1	0	1	0

5. Nilai tingkat akurasi, presisi, dan reeal





formanceVector (Performance) | ImprovedNeuralNet (Neural Net)

Table View | Plot View

accuracy: 60.00% +/- 31.62% (micro average: 60.00%)

	true TERLAMBAT	true TEPAT	class precision
pred. TERLAMBAT	3	4	42.86%
pred. TEPAT	4	9	69.23%
class recall	42.86%	69.23%	

Performance

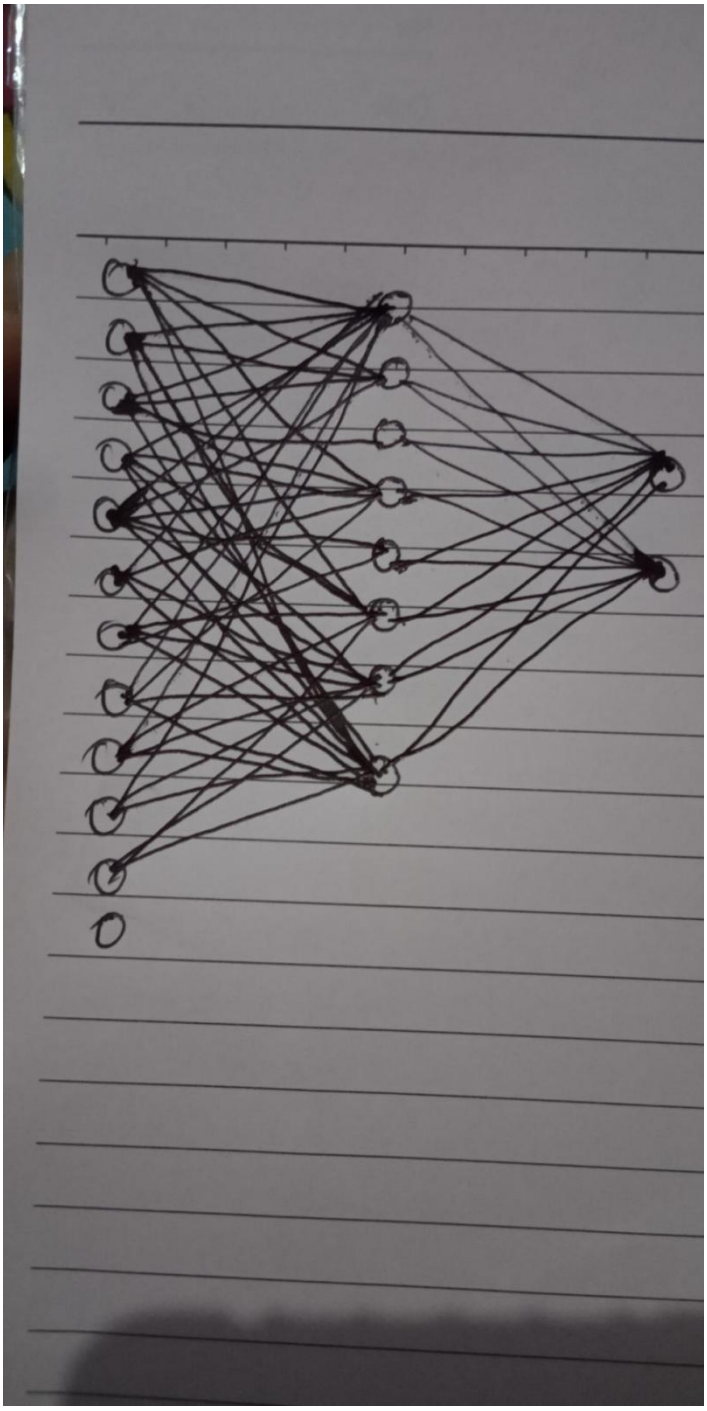
Description

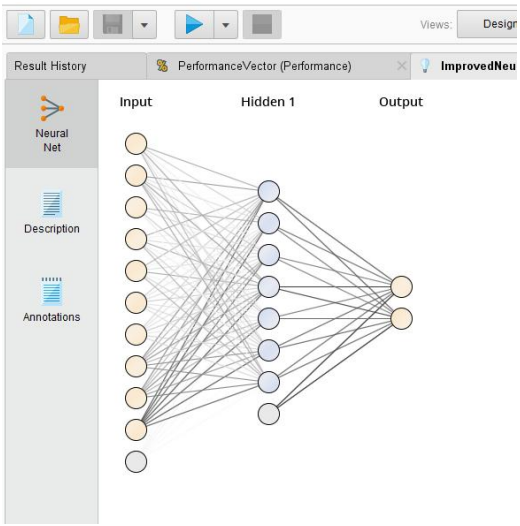
Annotations

PerformanceVector

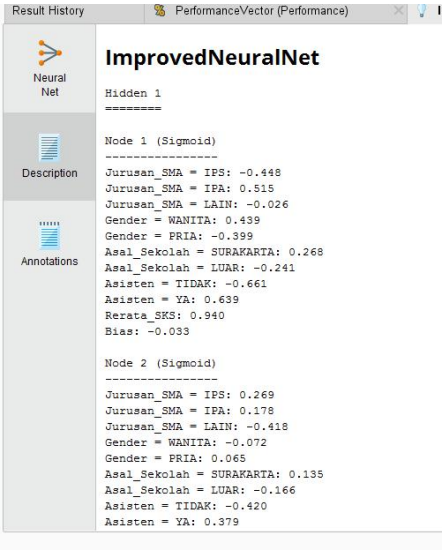
```
PerformanceVector:
accuracy: 60.00% +/- 31.62% (micro average: 60.00%)
ConfusionMatrix:
True:   TERLAMBAT       TEPAT
TERLAMBAT:      3       4
TEPAT:  4       9
```

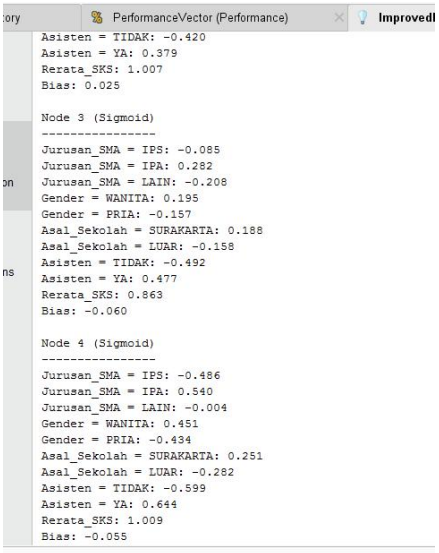
6. Gambar Arsitektur jaringan syaraf yg terbentuk

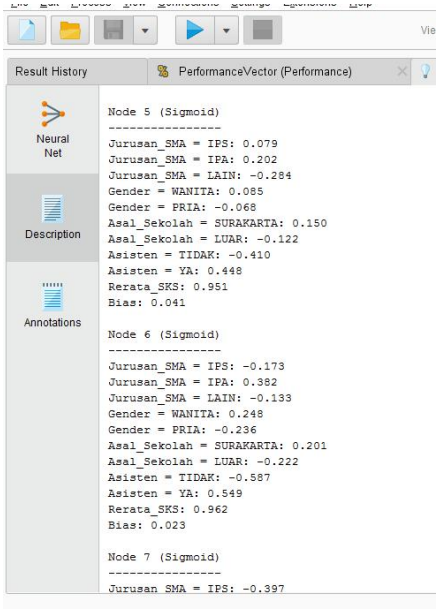


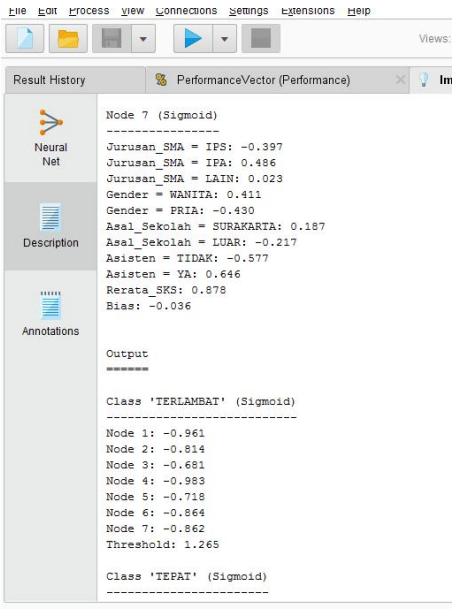


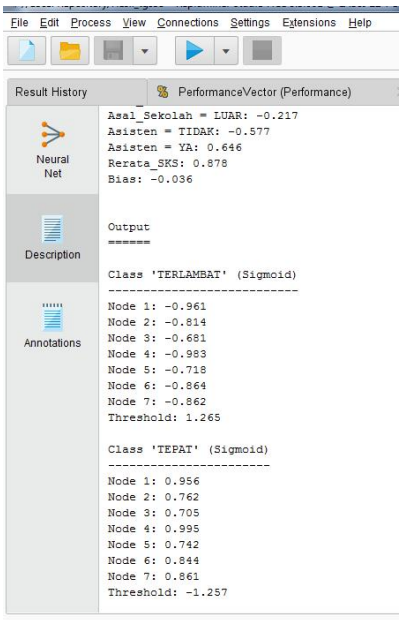
7. Jumlah node (simpul) masing-masing layer (lapisan) berdasarkan arsitektur JST
   - ➔ Input layer : 10 node
   - ➔ Hidden Layer : 8 node
   - ➔ Output layer : 2 node (TEPAT, TERLAMBAT)
8. Nilai-nilai bobot masing-masing node(simpul) pada hidden layer atau output layer




PerformanceVector (Performance)
Improvedl
Asisten = TIDAK: -0.420
Asisten = YA: 0.379
Rerata_SKS: 1.007
Bias: 0.025
Node 3 (Sigmoid)
Jurusan_SMA = IPS: -0.085
Jurusan_SMA = IPA: 0.282
Jurusan_SMA = LAIN: -0.208
Gender = WANITA: 0.195
Gender = PRIA: -0.157
Asal_Sekolah = SURAKARTA: 0.188
Asal_Sekolah = LUAR: -0.158
Asisten = TIDAK: -0.492
Asisten = YA: 0.477
Rerata_SKS: 0.863
Bias: -0.060
Node 4 (Sigmoid)
Jurusan_SMA = IPS: -0.486
Jurusan_SMA = IPA: 0.540
Jurusan_SMA = LAIN: -0.004
Gender = WANITA: 0.451
Gender = PRIA: -0.434
Asal_Sekolah = SURAKARTA: 0.251
Asal_Sekolah = LUAR: -0.282
Asisten = TIDAK: -0.599
Asisten = YA: 0.644
Rerata_SKS: 1.009
Bias: -0.055


Result History
PerformanceVector (Performance)
Neural Net
Description
Annotations
Node 5 (Sigmoid)
Jurusan_SMA = IPS: 0.079
Jurusan_SMA = IPA: 0.202
Jurusan_SMA = LAIN: -0.284
Gender = WANITA: 0.085
Gender = PRIA: -0.068
Asal_Sekolah = SURAKARTA: 0.150
Asal_Sekolah = LUAR: -0.122
Asisten = TIDAK: -0.410
Asisten = YA: 0.448
Rerata_SKS: 0.951
Bias: 0.041
Node 6 (Sigmoid)
Jurusan_SMA = IPS: -0.173
Jurusan_SMA = IPA: 0.382
Jurusan_SMA = LAIN: -0.133
Gender = WANITA: 0.248
Gender = PRIA: -0.236
Asal_Sekolah = SURAKARTA: 0.201
Asal_Sekolah = LUAR: -0.222
Asisten = TIDAK: -0.587
Asisten = YA: 0.549
Rerata_SKS: 0.962
Bias: 0.023
Node 7 (Sigmoid)
Jurusan_SMA = IPS: -0.397


File Edit Process View Connections Settings Extensions Help
Views:
Result History
PerformanceVector (Performance)
Neural Net
Description
Annotations
Node 7 (Sigmoid)
Jurusan_SMA = IPS: -0.397
Jurusan_SMA = IPA: 0.486
Jurusan_SMA = LAIN: 0.023
Gender = WANITA: 0.411
Gender = PRIA: -0.430
Asal_Sekolah = SURAKARTA: 0.187
Asal_Sekolah = LUAR: -0.217
Asisten = TIDAK: -0.577
Asisten = YA: 0.646
Rerata_SKS: 0.878
Bias: -0.036
Output
Class 'TERLAMBAT' (Sigmoid)
Node 1: -0.961
Node 2: -0.814
Node 3: -0.681
Node 4: -0.983
Node 5: -0.718
Node 6: -0.864
Node 7: -0.862
Threshold: 1.265
Class 'TEPAT' (Sigmoid)


File Edit Process View Connections Settings Extensions Help
Result History
PerformanceVector (Performance)
Neural Net
Description
Annotations
Asal_Sekolah = LUAR: -0.217
Asisten = TIDAK: -0.577
Asisten = YA: 0.646
Rerata_SKS: 0.878
Bias: -0.036
Output
Class 'TERLAMBAT' (Sigmoid)
Node 1: -0.961
Node 2: -0.814
Node 3: -0.681
Node 4: -0.983
Node 5: -0.718
Node 6: -0.864
Node 7: -0.862
Threshold: 1.265
Class 'TEPAT' (Sigmoid)
Node 1: 0.956
Node 2: 0.762
Node 3: 0.705
Node 4: 0.995
Node 5: 0.742
Node 6: 0.844
Node 7: 0.861
Threshold: -1.257