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**KELAS** : A

## MODUL 13

### 1. Prediksi Nilai Kelas Atribut dengan Neuron Perceptron

The screenshot shows the RapidMiner Studio interface with two main windows displayed.

**Top Window (Process View):**

- Repository:** Shows connections like 'Connections (LABSI-22)', 'data (LABSI-22)', and various processes including 'Hasil\_Percob1' and 'Hasil\_Igs4'.
- Process:** Displays a workflow:
  - Input from 'Retrieve Training\_Cuaca' (Nominal to Numerical) feeds into a 'Perceptron' operator.
  - The output of the 'Perceptron' feeds into an 'Apply Model' operator.
  - Input from 'Retrieve Testing\_Cuaca' (Nominal to Numerical) also feeds into the 'Perceptron' operator.
  - The 'Apply Model' operator outputs results ('res').
- Operators:** A sidebar listing operators categorized by type: Data Access, Blending, Cleansing, Modeling, Scoring, Validation, Utility.
- Parameters:** A panel for the 'Retrieve' operator, showing its parameters and a synopsis.
- Help:** A panel providing information about the 'Retrieve' operator.

**Bottom Window (Results View):**

- Result History:** An 'ExampleSet (Apply Model)' table showing 7 examples. The columns include 'Row No.', 'prediction(B...)', 'confidence(...)', 'confidence(...)', 'Cuaca = Cer...', 'Cuaca = Me...', 'Cuaca = Huj...', 'Berangin = T...', 'Berangin = YA', and 'Suhu'. The data is as follows:

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

- Repository:** Shows a list of training resources, samples, and local repository items, including 'Hasil\_Percob1' and 'Hasil\_Igs4'.

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Find data, operators...etc All Studio

Result History ExampleSet (Apply Model)

Data Statistics Visualizations Annotations

Open in Turbo Prep Auto Model Filter (7 / 7 examples): all

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	1	0	1	0	64	85

< > ExampleSet (7 examples, 3 special attributes, 7 regular attributes)

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## 2. Mengetahui Nilai Performance Vector pada Jaringan Saraf Tiruan

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Find data, operators...etc All Studio

Repository x Import Data

Process x Process

Operators x Search for Operators

Parameters x Process logverbosity init logfile

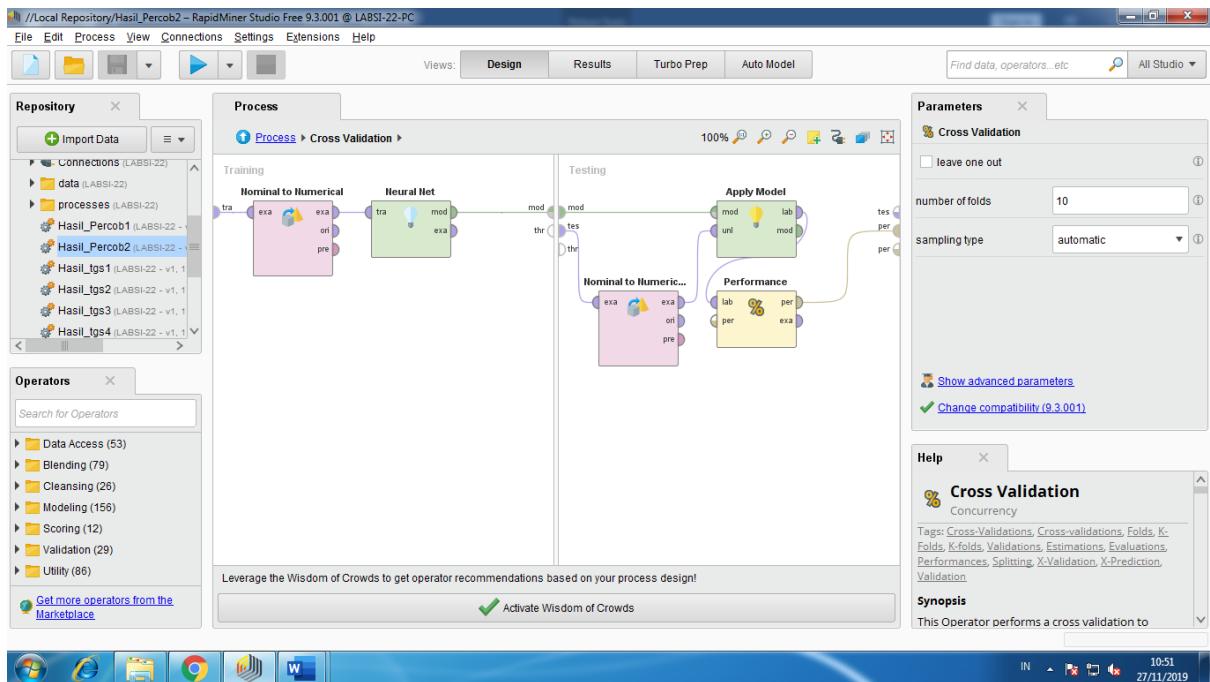
Help x Process RapidMiner Studio Core Synopsis The root operator which is the outer most operator of every process. Description

Retrieval Training\_Cross Validation

Leverage the Wisdom of Crowds to get operator recommendations based on your process design!

Activate Wisdom of Crowds

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File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model Find data, operators...etc All Studio

**Result History**

PerformanceVector (Performance) ImprovedNeuralNet (Neural Net)

Criterion accuracy

Table View Plot View

accuracy: 50.00% +/- 47.14% (micro average: 57.14%)

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

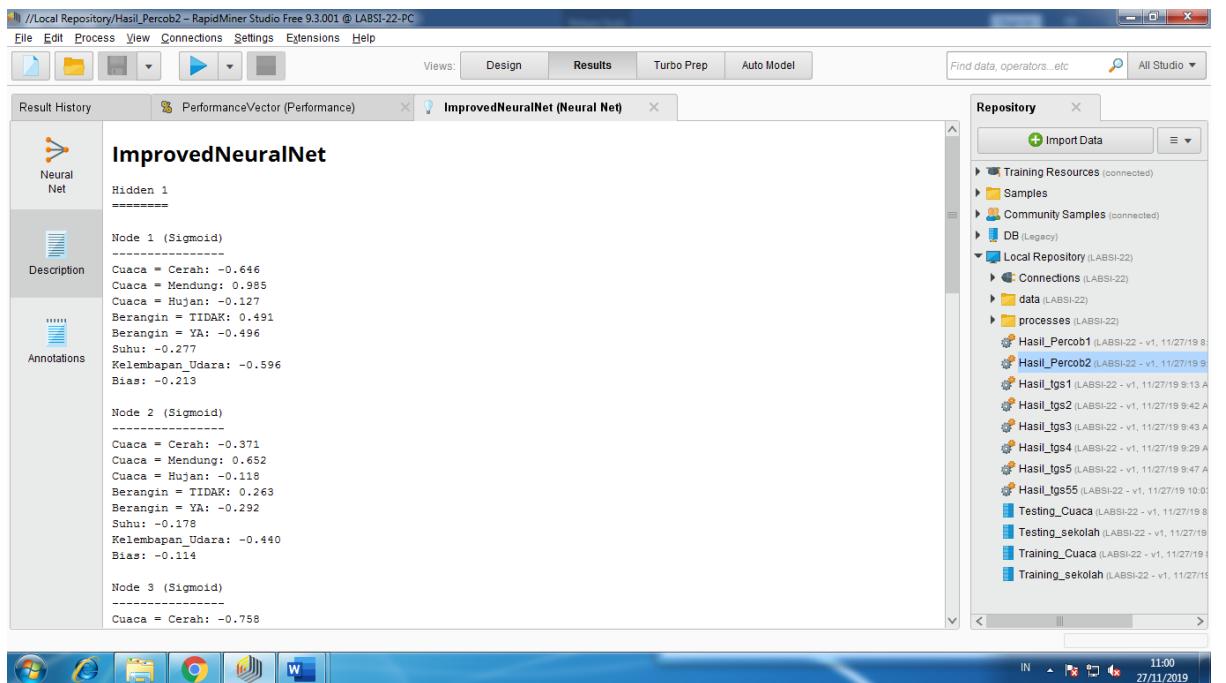
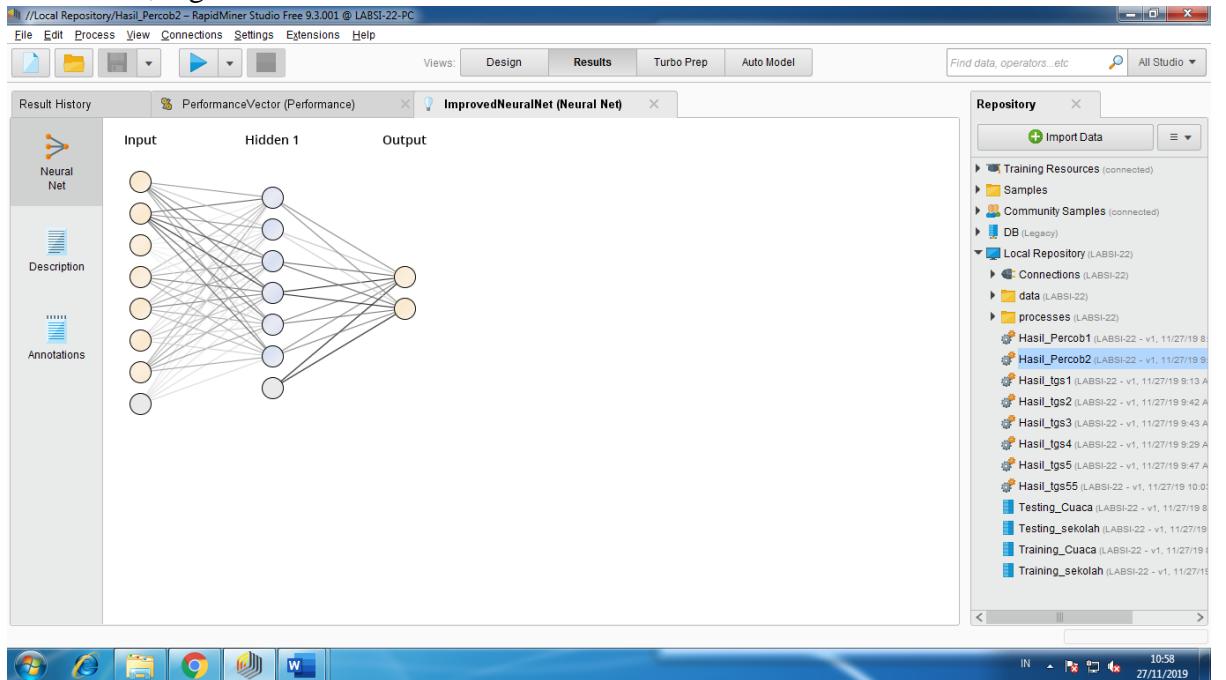
**Repository**

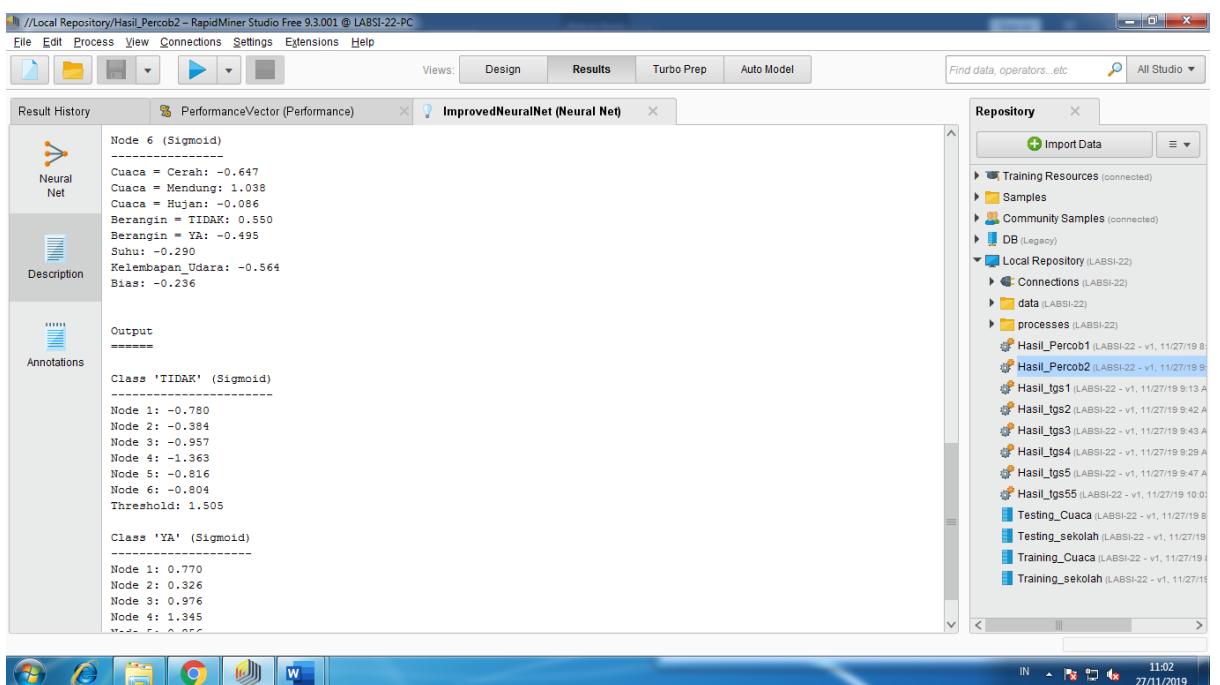
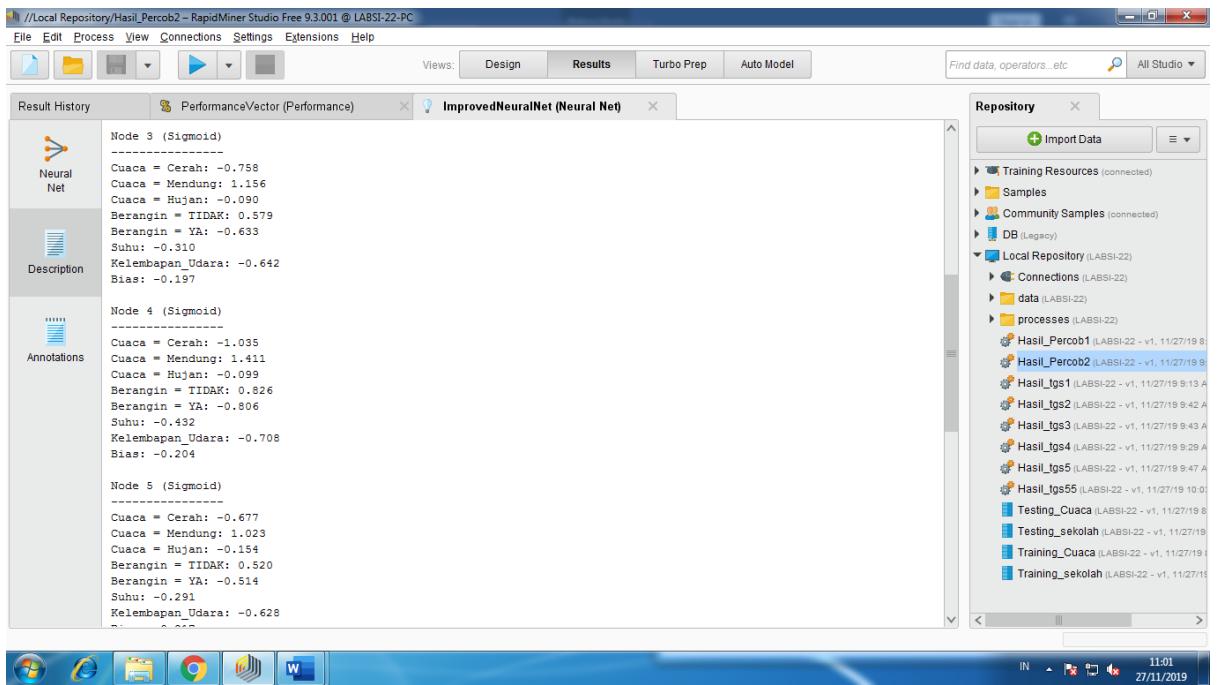
- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
- Local Repository (LABSI-22)
  - Connections (LABSI-22)
  - data (LABSI-22)
  - processes (LABSI-22)
    - Hasil\_Percob1 (LABSI-22 - v1, 11/27/19 8:45)
    - Hasil\_Percob2 (LABSI-22 - v1, 11/27/19 8:45)
    - Hasil\_gs1 (LABSI-22 - v1, 11/27/19 9:13 A)
    - Hasil\_gs2 (LABSI-22 - v1, 11/27/19 9:42 A)
    - Hasil\_gs3 (LABSI-22 - v1, 11/27/19 9:43 A)
    - Hasil\_gs4 (LABSI-22 - v1, 11/27/19 9:29 A)
    - Hasil\_gs5 (LABSI-22 - v1, 11/27/19 9:47 A)
    - Hasil\_gs55 (LABSI-22 - v1, 11/27/19 10:00)
    - Testing\_Cuaca (LABSI-22 - v1, 11/27/19 8:45)
    - Testing\_sekolah (LABSI-22 - v1, 11/27/19 8:45)
    - Training\_Cuaca (LABSI-22 - v1, 11/27/19 8:45)
    - Training\_sekolah (LABSI-22 - v1, 11/27/19 8:45)

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Tab ImprovedNeuralNet (Neural Net), memperlihatkan arsitektur syaraf.

a) Neural Net, digunakan untuk melihat bentuk arsitektur JST

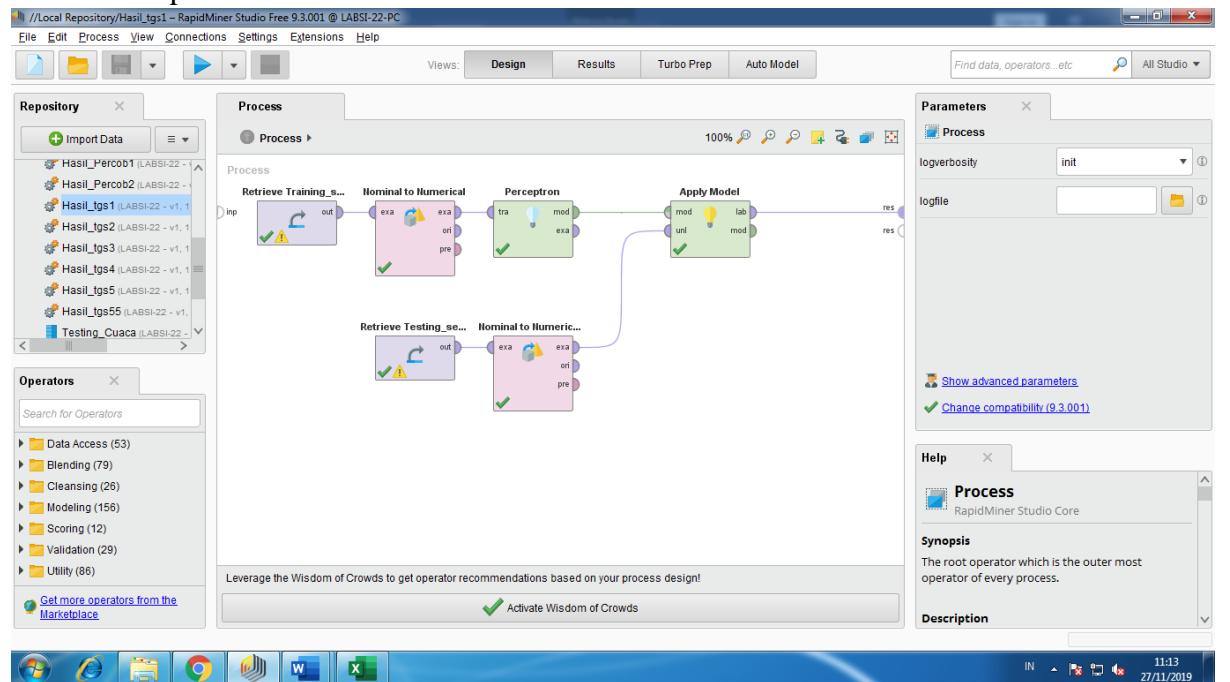




## TUGAS

1. File excel sebagai data training dan data testing

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

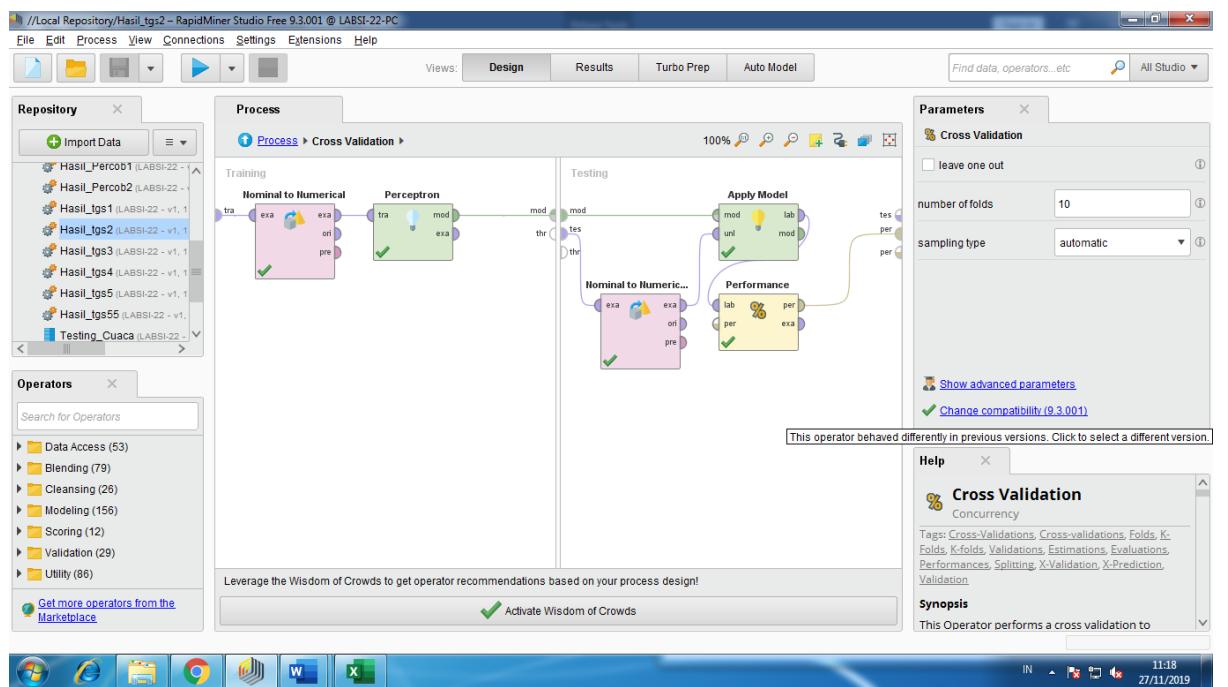
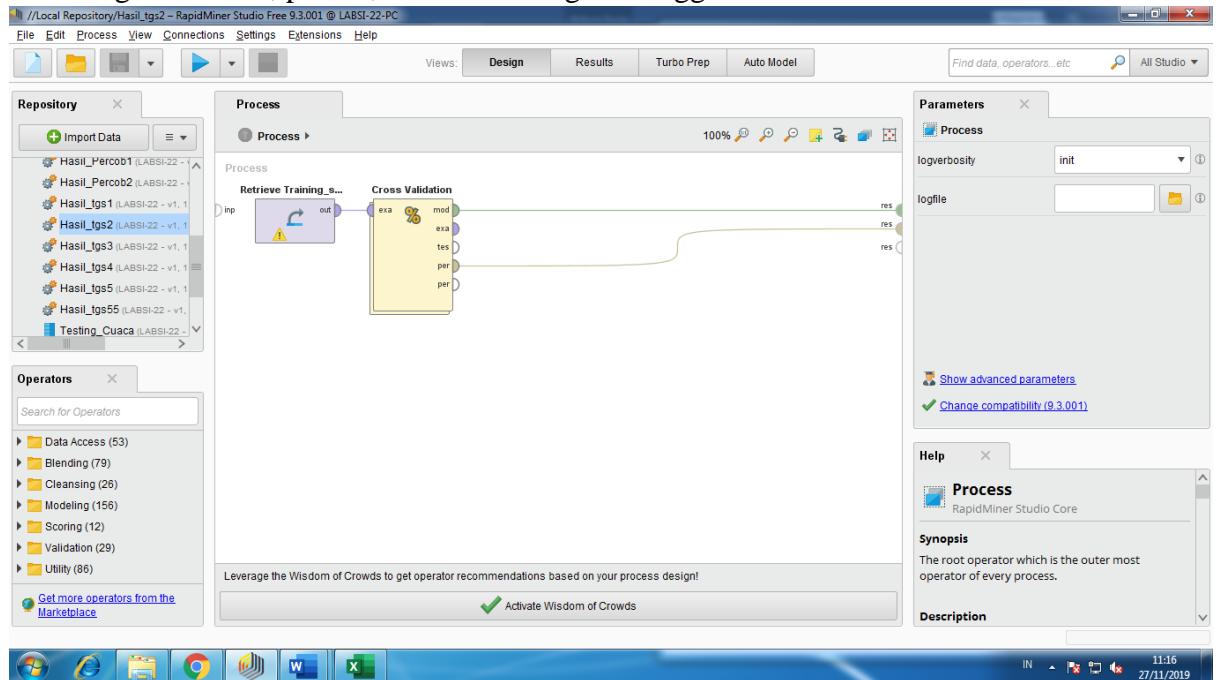


The screenshot shows the Results view of RapidMiner Studio. The left sidebar has tabs for Data, Statistics, Visualizations, and Annotations. The main area displays an "ExampleSet (Apply Model)" table with the following data:

	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

The bottom bar shows the Windows taskbar with icons for Start, Task View, File Explorer, Google Chrome, File Explorer, Word, and Excel.

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



File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

**PerformanceVector (Performance)**

Criterion: accuracy

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%	

Repository

- Training Resources (connected)
- Samples
- Community Samples (connected)
- DB (Legacy)
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  - data (LABSI-22)
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    - Hasil\_Igs55 (LABSI-22 - v1, 11/27/19 10:00 AM)
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    - Training\_Cuaca (LABSI-22 - v1, 11/27/19 8:47 AM)
    - Training\_sekolah (LABSI-22 - v1, 11/27/19 8:47 AM)

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File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

**PerformanceVector (Performance)**

**PerformanceVector**

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

ConfusionMatrix:

True:	TERLAMBAT	TEPAT
TERLAMBAT:	4	9
TEPAT:	3	4

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File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

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

**Hyperplane**

Description

Hyperplane separating TEPAT and TERLAMBAT.  
Intercept: -0.011019882381776685

Coefficients:

w(Jurusan_SMA = IPS)	= -0.189
w(Jurusan_SMA = IPA)	= 0.251
w(Jurusan_SMA = LAIR)	= -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

Data

Annotations

Repository

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File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

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

**Attribute Weight**

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

Description

Data

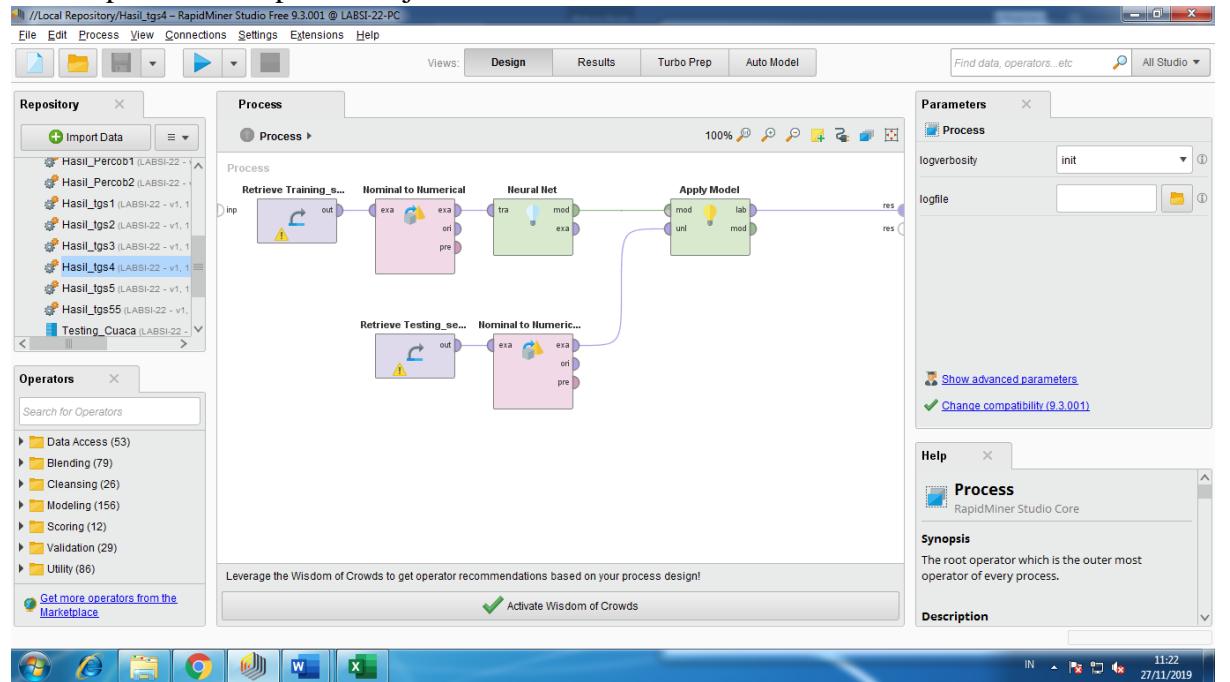
Annotations

Repository

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#### 4. Ganti operator Perception menjadi Natural Net

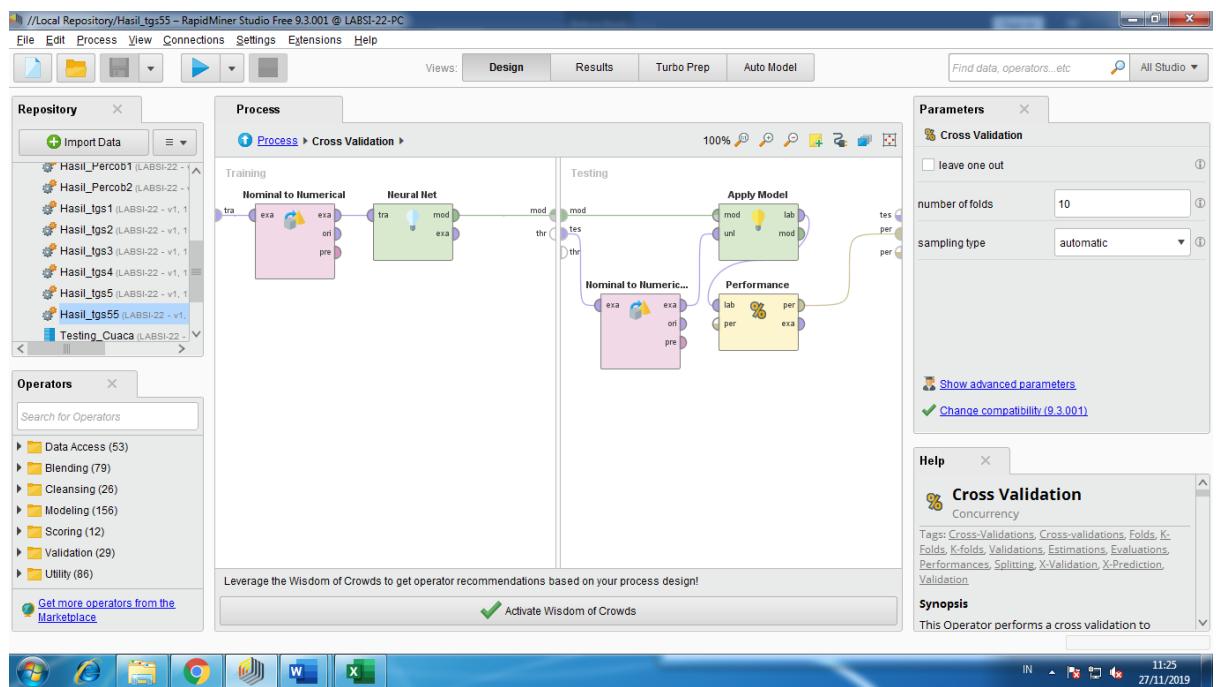
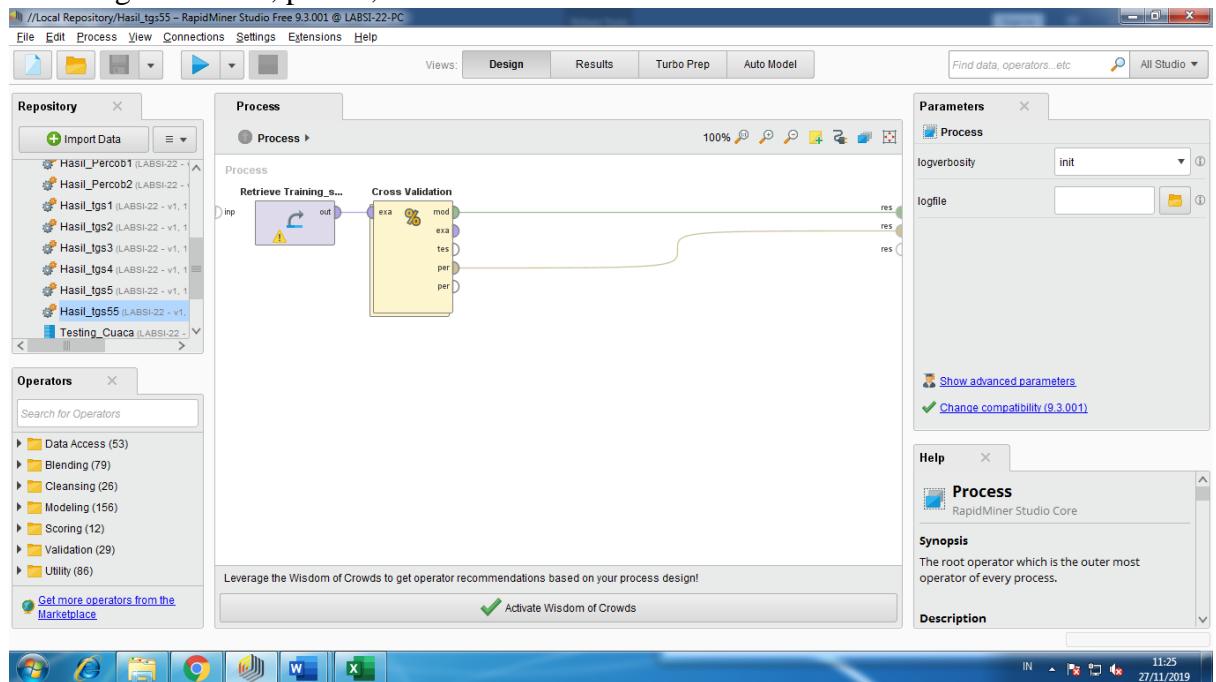


The screenshot shows the RapidMiner Studio interface with the following components:

- Result History:** Displays an "ExampleSet (Apply Model)" table.
- Data:** Shows the contents of the ExampleSet table.
- Statistics:** Shows various statistics for the data.
- Visualizations:** Shows visual representations of the data.
- Annotations:** Shows annotations for the data.
- Repository:** Shows the local repository with various training resources and samples.
- Bottom Bar:** Shows system icons and the date/time "11:23 27/11/2019".

	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



//Local Repository/Hasil\_tgs55 – RapidMiner Studio Free 9.3.001 @ LABSI-22-PC

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

Result History PerformanceVector (Performance) ImprovedNeuralNet (Neural Net)

Criterion accuracy

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%	

Repository

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//Local Repository/Hasil\_tgs55 – RapidMiner Studio Free 9.3.001 @ LABSI-22-PC

File Edit Process View Connections Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators...etc All Studio

Result History PerformanceVector (Performance) ImprovedNeuralNet (Neural Net)

PerformanceVector

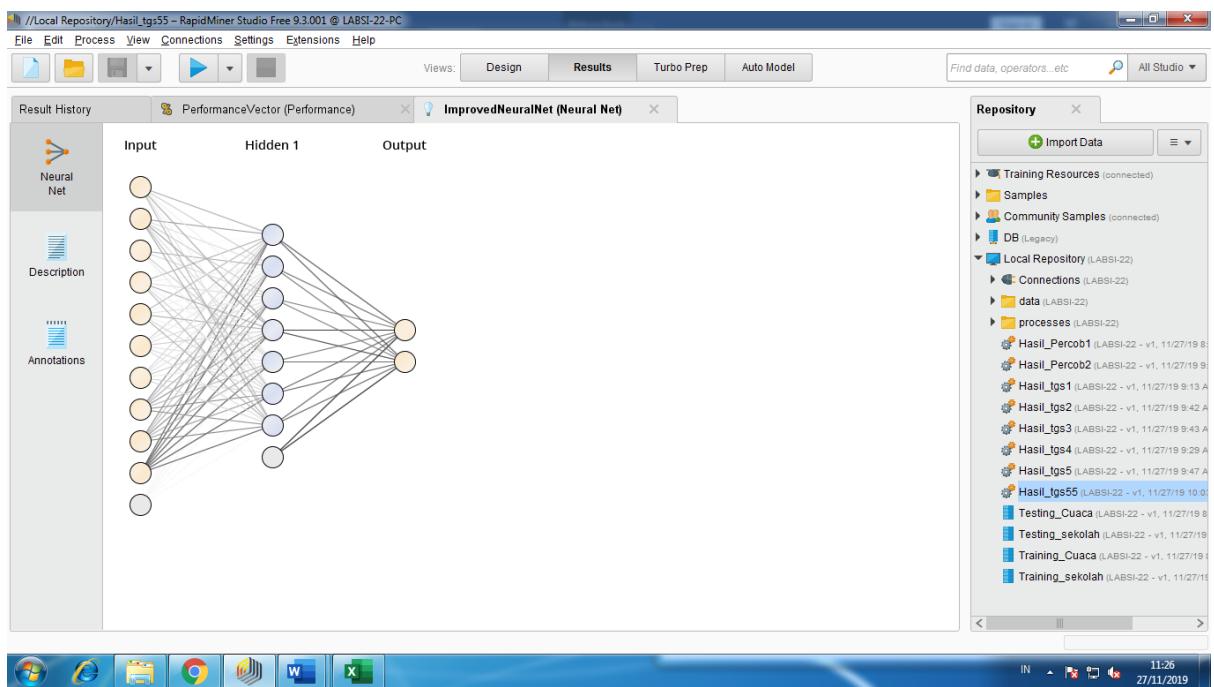
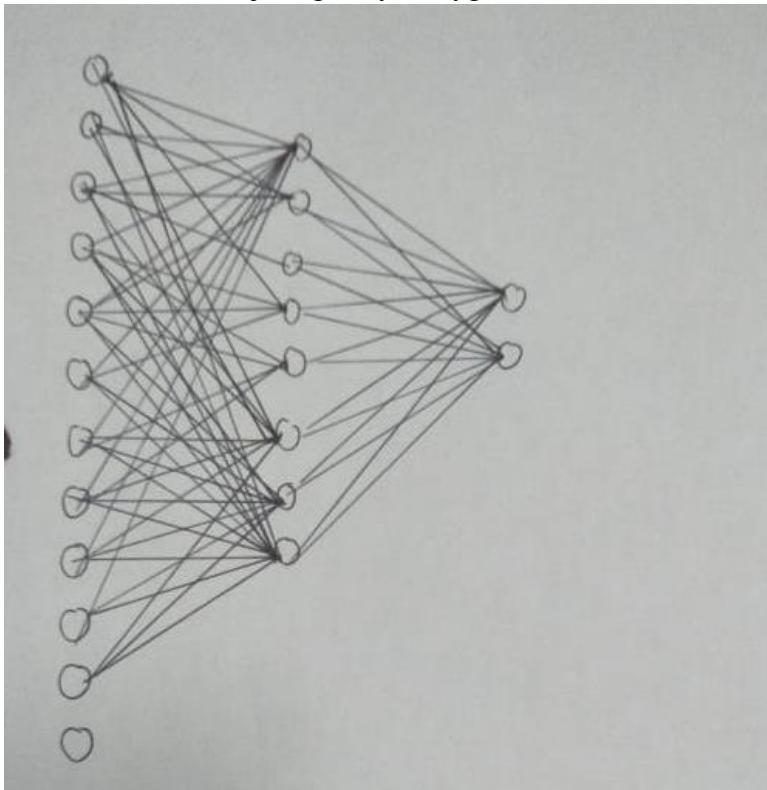
PerformanceVector:  
accuracy: 60.00% +/- 31.62% (micro average: 60.00%)  
ConfusionMatrix:  
True: TERLAMBAT TEPAT  
TERLAMBAT: 3 4  
TEPAT: 4 9

Repository

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  - Training\_sekolah (LABSI-22 - v1, 11/27/19 8:47 AM)

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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

