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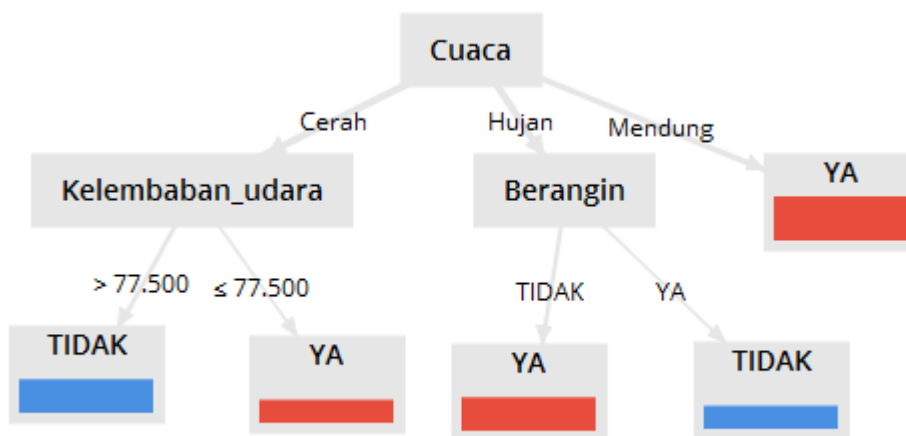
MODUL XI

INDUKSI DAN ATURAN ASOSIASI

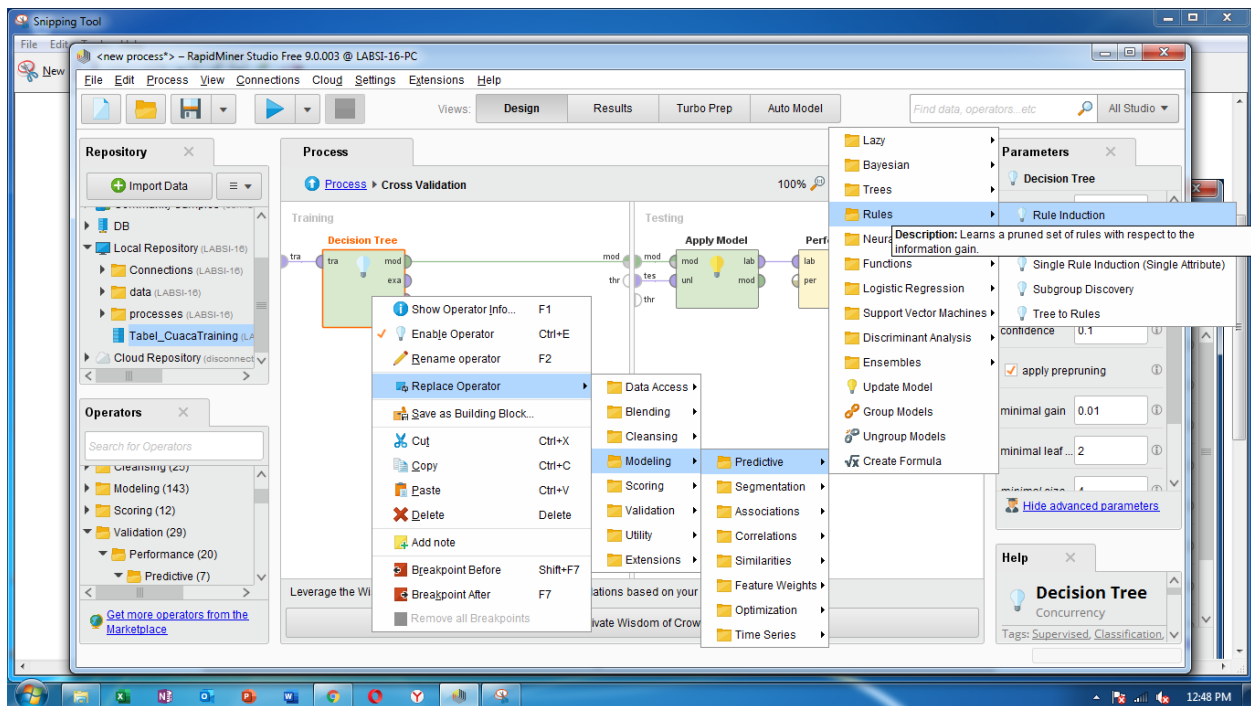
11.4 Langkah-langkah Praktikum

11.4.1 Induksi Aturan Data Cuaca

1. Jalankan RapidMiner dan proses data table cuaca menjadi decision tree.



2. Kembali ke **Process** -> **Cross Validation**, klik kanan pada operator **Decision Tree**, pilih **Replace Operator** -> **Modeling** -> **Predictive** -> **Rules** -> **Rule Induction**.



3. Klik **Run**, sehingga mendapatkan **RuleModel (Rule Induction)** dan **Performance Vector (Performance)**.

RuleModel

```
if Kelembaban_udara ≤ 82.500 then YA (1 / 6)
if Cuaca = Cerah then TIDAK (3 / 0)
if Cuaca = Mendung then YA (0 / 2)
if Suhu ≤ 70.500 then YA (0 / 1)
else TIDAK (0 / 0)
```

correct: 12 out of 13 training examples.

accuracy: 65.00% +/- 45.00% (micro average: 71.43%)

	true TIDAK	true YA	class precision
pred. TIDAK	2	1	66.67%
pred. YA	3	8	72.73%
class recall	40.00%	88.89%	

11.4.2 Aturan Asosiasi Data Cuaca

1. Buat **New Process** dengan menekan tombol **New**, kembali gunakan data **Cuaca Training** dan drag ke repository **Process View**, tambahkan operator **subprocess** dan ubah Namanya menjadi **Subprocess**.

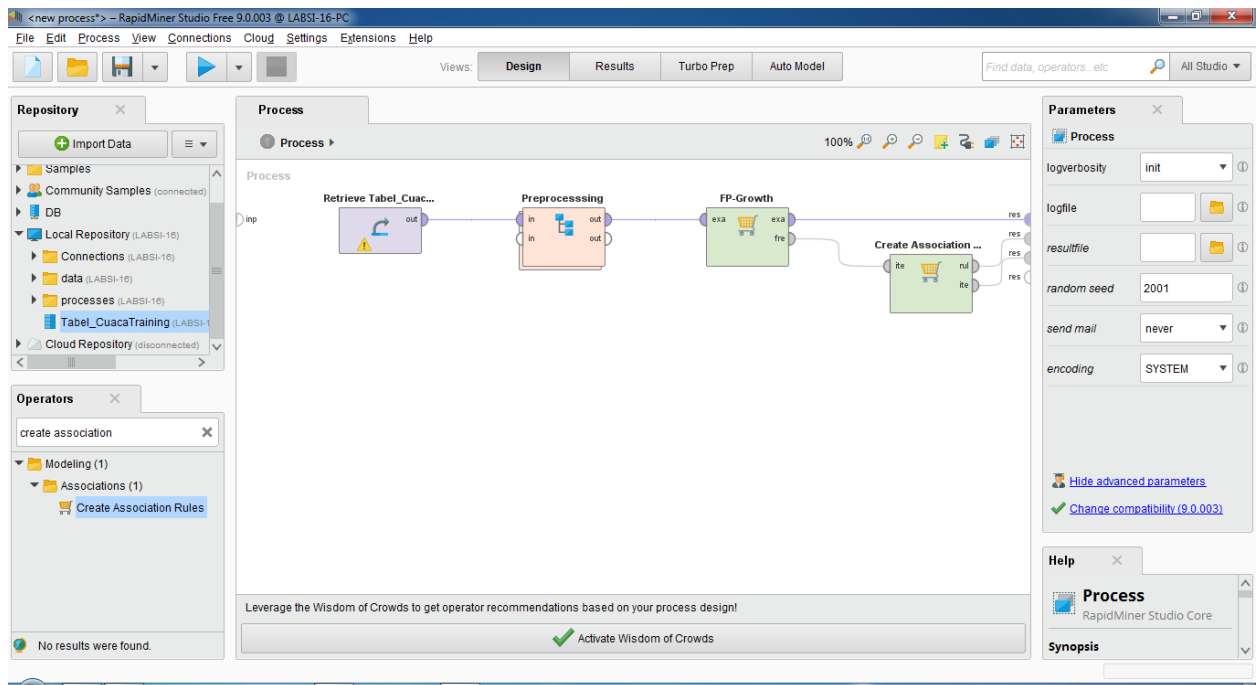


2. Klik 2X pada **Preprocessing** untuk masuk kehalaman **Nested Chain**, lalu tambahkan operator **Discretize by Frequency (DiscretizebyFrequency)** dan **Nominal to Binomial (Nominal2Binomial)** dan hubungkan keduanya.

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

- Repository:** Contains a tree view with 'Samples', 'Community Samples (connected)', 'DB', 'Local Repository (LABSI-16)', 'Connections (LABSI-16)', 'data (LABSI-16)', 'processes (LABSI-16)', and 'Tabel_CuacaTraining (LABSI-16)'. The 'Cloud Repository (disconnected)' is also listed.
- Process View:** Displays a nested chain process. The 'Preprocessing' operator is highlighted, and its nested chain contains 'DiscretizebyFreque...' and 'Nominal2Binomial' operators. The process is shown at 100% completion.
- Operators:** A list of operators is shown, including 'nominal', 'numerical to binomial', 'Numerical to Polynomir', 'Nominal to Binomial', 'Nominal to Text', 'Nominal to Numerical', 'Nominal to Date', and 'Text to Nominal'.
- Parameters:** The 'Nominal2Binomial (Nominal to ...)' operator parameters are shown, including 'create view', 'attribute filter type' (set to 'all'), 'invert selection', 'include special attributes', 'transform binomial', and 'use underscore in name'.
- Help:** A 'Nominal to Binomial' help panel is visible at the bottom right.

3. Kembali ke **Main Process**, da tambhkan operator **FP-Growth** dan **Create Association Rules**, untuk **FP-Growth** ubah nilai parameter pada min support = 0.1.



4. Klik **Run** dan tampilkan :

➤ **Frequent Item Set (FP-Growth)**

No. of Sets: 26	Size	Support	Item 1	Item 2	Item 3	Item 4
Total Max. Size: 4	1	0.500	Kelembaban_udara			
Min. Size: <input type="text" value="1"/>	1	0.429	Berangin			
Max. Size: <input type="text" value="4"/>	1	0.429	Suhu			
Contains Item: <input type="text"/>	1	0.357	Cuaca = Cerah			
<input type="button" value="Update View"/>	1	0.357	Cuaca = Hujan			
	1	0.286	Cuaca = Mendung			
	2	0.214	Kelembaban_udara	Berangin		
	2	0.214	Kelembaban_udara	Suhu		
	2	0.214	Kelembaban_udara	Cuaca = Cerah		
	2	0.143	Kelembaban_udara	Cuaca = Hujan		
	2	0.143	Kelembaban_udara	Cuaca = Mendung		
	2	0.143	Berangin	Suhu		
	2	0.143	Berangin	Cuaca = Cerah		
	2	0.143	Berangin	Cuaca = Hujan		
	2	0.143	Berangin	Cuaca = Mendung		

No. of Sets: 26	Size	Support	Item 1	Item 2	Item 3	Item 4
Total Max. Size: 4	2	0.143	Kelembaban_udara	Cuaca = Mendung		
Min. Size: <input type="text" value="1"/>	2	0.143	Berangin	Suhu		
Max. Size: <input type="text" value="4"/>	2	0.143	Berangin	Cuaca = Cerah		
Contains Item: <input type="text"/>	2	0.143	Berangin	Cuaca = Hujan		
<input type="button" value="Update View"/>	2	0.143	Berangin	Cuaca = Mendung		
	2	0.214	Suhu	Cuaca = Cerah		
	2	0.071	Suhu	Cuaca = Hujan		
	2	0.143	Suhu	Cuaca = Mendung		
	3	0.071	Kelembaban_udara	Berangin	Suhu	
	3	0.071	Kelembaban_udara	Berangin	Cuaca = Cerah	
	3	0.071	Kelembaban_udara	Berangin	Cuaca = Hujan	
	3	0.071	Kelembaban_udara	Berangin	Cuaca = Mendung	
	3	0.143	Kelembaban_udara	Suhu	Cuaca = Cerah	
	3	0.071	Kelembaban_udara	Suhu	Cuaca = Mendung	
	3	0.143	Berangin	Suhu	Cuaca = Cerah	
	4	0.071	Kelembaban_udara	Berangin	Suhu	Cuaca = Cerah

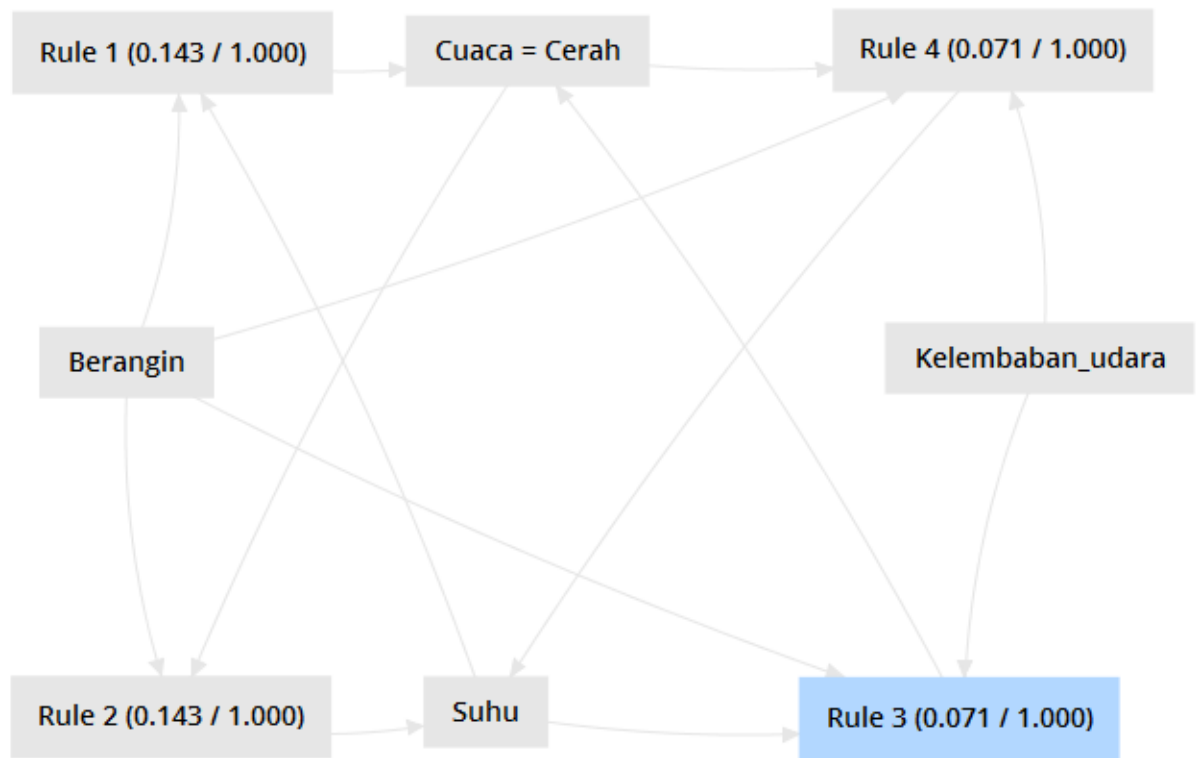
➤ **Association Rules (Create Association Rules)**

a) **Table View**

No.	Premises	Conclusion
1	Berangin, Suhu	Cuaca = Cerah
2	Berangin, Cuaca = Cerah	Suhu
3	Kelembaban_udara, Berangin, Suhu	Cuaca = Cerah
4	Kelembaban_udara, Berangin, Cuaca = Cerah	Suhu

Support	Confidence	LaPlace	Gain	p-s	Lift	Convicti...
0.143	1	1	-0.143	0.092	2.800	∞
0.143	1	1	-0.143	0.082	2.333	∞
0.071	1	1	-0.071	0.046	2.800	∞
0.071	1	1	-0.071	0.041	2.333	∞

b) Graph View



➤ ExampleSet (Nominal2Binomial)

