

Hesti Putri Utami

L200170009

Kelas A

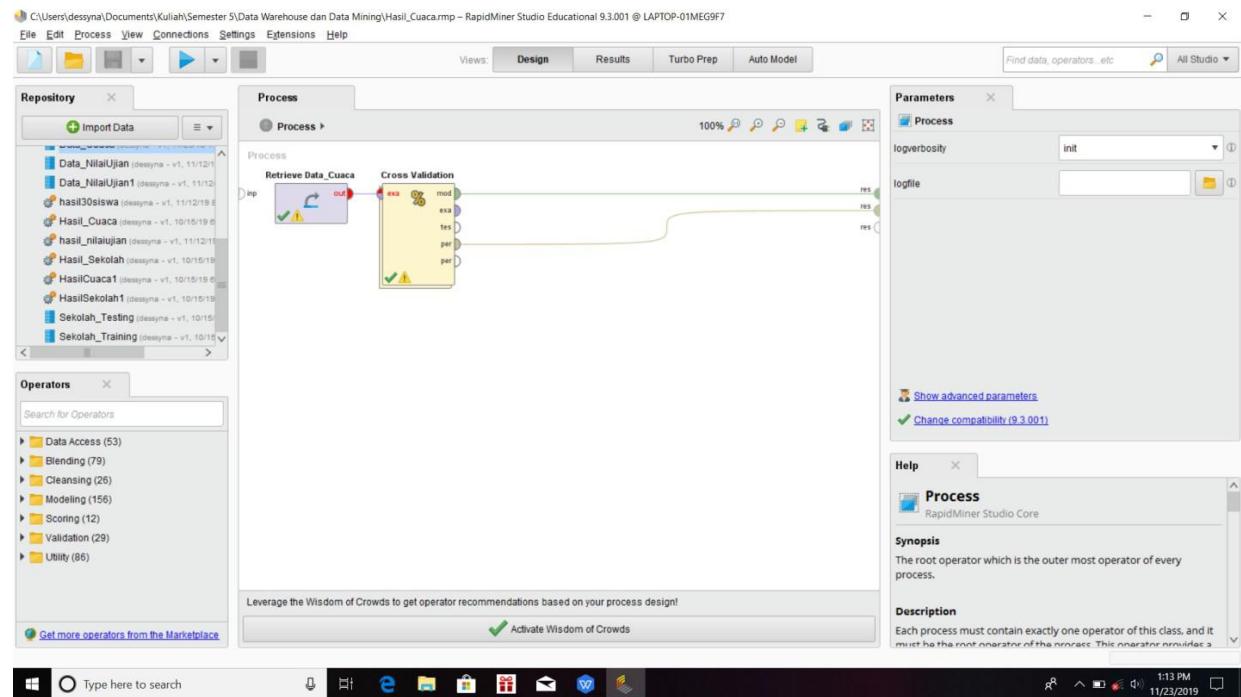
## MODUL 11

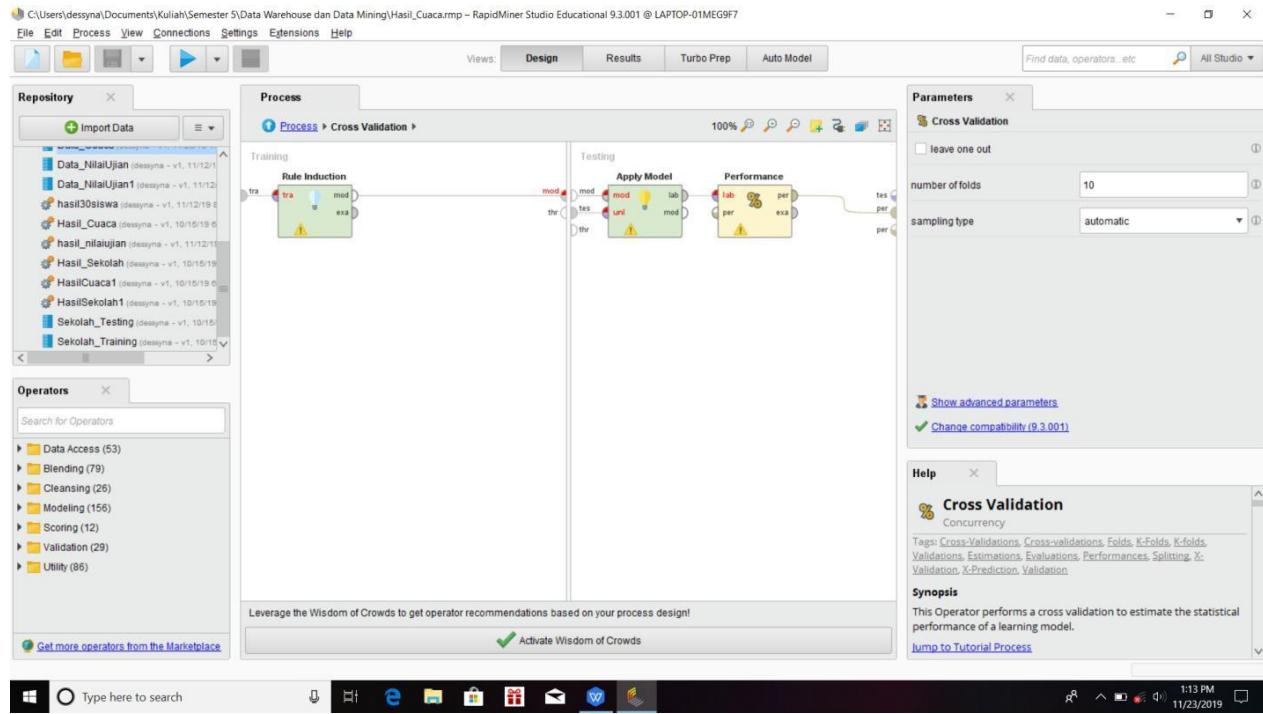
### INDUKSI DAN ATURAN ASOSIASI

#### 11. 4. Langkah-langkah Praktikum

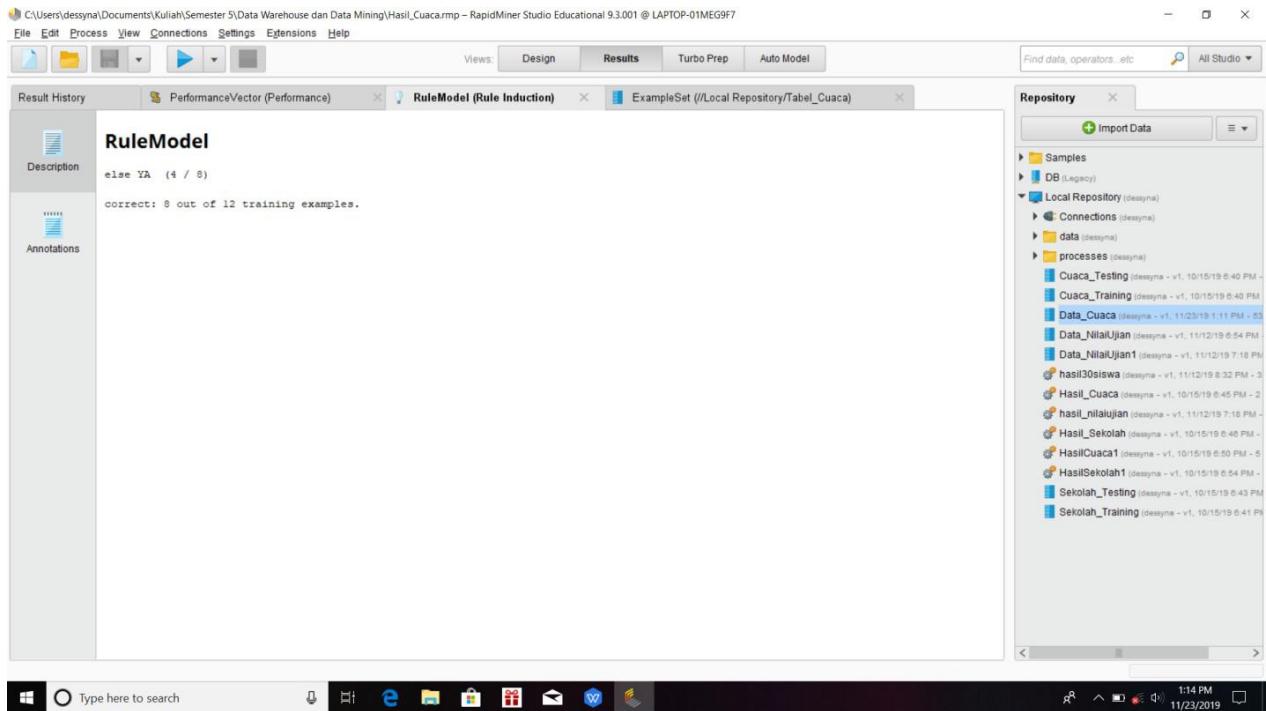
##### 11. 4. 1. Induksi Aturan Data Cuaca

1. Jalankan aplikasi RapidMiner.
2. Gunakan model proses dari praktikum data mining **Modul 9 Kegiatan 9.4.2.**
3. Dari hasil kegiatan tersebut menghasilkan sebuah pohon keputusan
4. Kembali ke **Process - Cross Validation**
5. Klik kanan operator **Decision Tree** pada area **Training**.
6. Pilih **Replace Operator → Modeling → Predictive → Rules → Rule Induction**





7. Tanpa mengubah parameter-parameter yang lainnya, jalankan proses dengan menekan tombol **Run** (atau menekan tombol F11).
8. Sehingga akan diperoleh sebuah induksi aturan dari data training yang diberikan yang disebut sebagai **RuleModel (Rule Induction)**.



## 9. Model Rule Induction ini juga bisa ditunjukkan hasil Performance Vector (Performance).

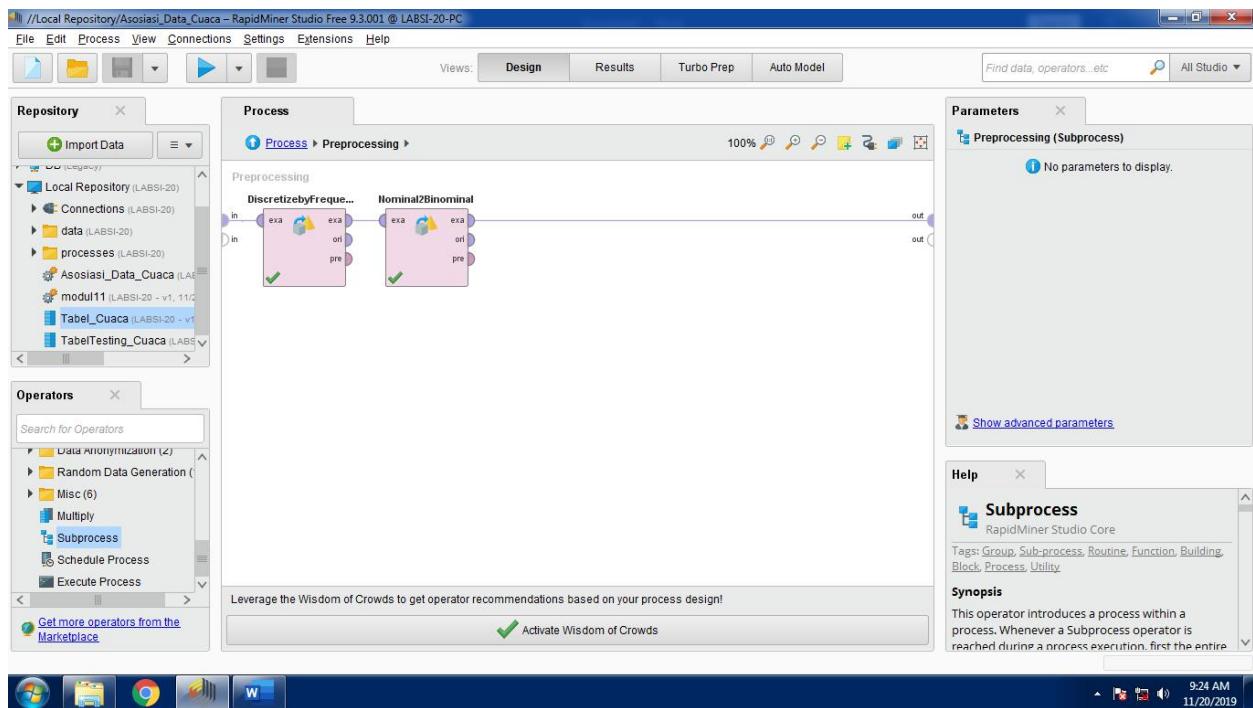
The screenshot shows the RapidMiner Studio interface. The title bar indicates the file is C:\Users\dessyna\Documents\Kuliah\Semester 5\Data Warehouse dan Data Mining\Hasil\_Cuaca.rmp - RapidMiner Studio Educational 9.3.001 @ LAPTOP-01MEGF9F. The menu bar includes File, Edit, Process, View, Connections, Settings, Extensions, Help, and a Turbo Prep button. The top navigation bar has tabs for Design, Results, Turbo Prep, and Auto Model. The main area displays the 'PerformanceVector (Performance)' view, which includes a 'Criterion' section (accuracy), a table view showing accuracy: 65.00% +/- 47.43% (micro average: 71.43%), and a confusion matrix table:

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

The right side of the interface features a 'Repository' view showing a tree structure of data sets and processes, including 'Samples', 'DB (Legacy)', and 'Local Repository' with various entries like 'Cuaca\_Testing', 'Cuaca\_Training', etc. The bottom status bar shows the time as 1:14 PM on 11/23/2019.

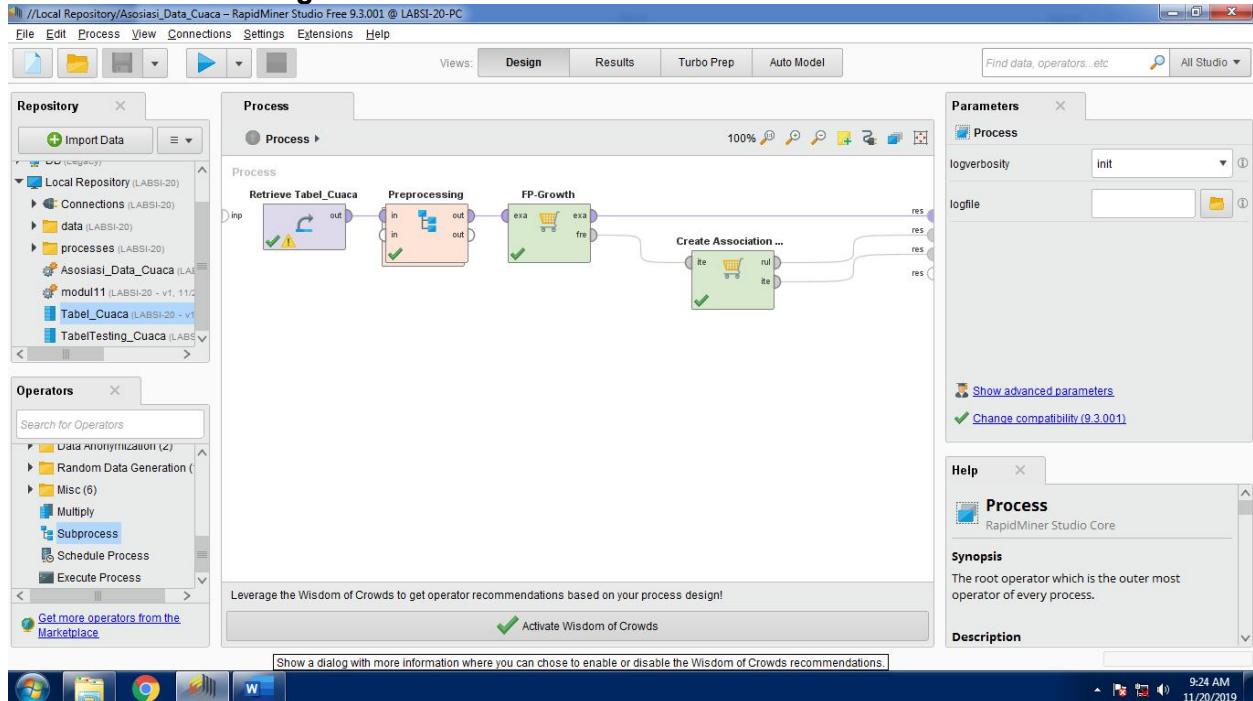
### 11. 4. 2. Aturan Asosiasi Data Cuaca

1. Masih dengan menggunakan RapidMiner , pilih **New process**
2. Gunakan **DataCuaca\_Training** dan drag dari *repository* ke area **Process View**
3. Tambahkan operator **Utility** → **Subprocess** ke dalam area. Ubah nama operator ini menjadi **Preprocessing** dengan klik kanan operator **Subprocess** - **Rename**. Hubungkan port output Retrieve dengan port input Preprocessing.
4. Klik ganda operator **Preprocessing** sehingga masuk pada area *Nested Chain*.
5. Pada area *Nested chain* tambahkan operator-operator berikut :
  - a. **Cleansing** → **Binning** → **Discretize by Frequency**
  - b. **Blending** → **Attributes** → **Types** → **Nominal to Binomial**



6. Kembali ke main process , tambahkan 2 buah operator

- Modelling → Association → FP Growth**
- Modelling → Association → Create association Rules**



7. Jalankan proses dengan menekan tombol **Run** (atau menekan tombol F11).

8. Dapat dilihat hasil - hasil aturan asosiasi sebagai berikut :

- Frequent Item Set (FP-Growth)**

File Edit Process View Connections Settings Extensions Help

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

ExampleSet (/Local Repository/TabelTesting\_Cuaca) ExampleSet (/Local Repository/Tabel\_Cuaca) ExampleSet (Nominal2Binomial)

AssociationRules (Create Association Rules) Result History FrequentItemSets (FP-Growth)

Data Annotations

No. of Sets: 26 Total Max. Size: 4

Min. Size: 1 Max. Size: 4 Contains Item:

Update View

Size	Support	Item 1	Item 2	Item 3	Item 4
1	0.500	Kelembapan_Udara			
1	0.429	Berangin			
1	0.429	Suhu			
1	0.357	Cuaca = Cerah			
1	0.357	Cuaca = Hujan			
1	0.286	Cuaca = Mendung			
2	0.214	Kelembapan_Udara	Berangin		
2	0.214	Kelembapan_Udara	Suhu		
2	0.214	Kelembapan_Udara	Cuaca = Cerah		
2	0.143	Kelembapan_Udara	Cuaca = Hujan		
2	0.143	Kelembapan_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		
2	0.143	Suhu	Cuaca = Cerah		
2	0.071	Suhu	Cuaca = Hujan		
2	0.143	Suhu	Cuaca = Mendung		
3	0.071	Kelembapan_Udara	Berangin	Suhu	
3	0.071	Kelembapan_Udara	Berangin	Cuaca = Cerah	
3	0.071	Kelembapan_Udara	Berangin	Cuaca = Hujan	
3	0.071	Kelembapan_Udara	Berangin	Cuaca = Mendung	
3	0.143	Kelembapan_Udara	Suhu	Cuaca = Cerah	
3	0.071	Kelembapan_Udara	Suhu	Cuaca = Mendung	
3	0.143	Berangin	Suhu	Cuaca = Cerah	
3	0.143	Kelembapan_Udara	Berangin	Suhu	Cuaca = Cerah
4	0.071	Kelembapan_Udara	Berangin	Suhu	Cuaca = Cerah

Repository

- Import Data
- Samples
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - Asosiasi\_Data\_Cuaca (LABSI-20 - v1, 11)
    - modul11 (LABSI-20 - v1, 11/20/19 9:12 AM)
    - Tabel\_Cuaca (LABSI-20 - v1, 11/20/19 8:5)
    - TabelTesting\_Cuaca (LABSI-20 - v1, 11/2

File Edit Process View Connections Settings Extensions Help

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

ExampleSet (/Local Repository/TabelTesting\_Cuaca) ExampleSet (/Local Repository/Tabel\_Cuaca) ExampleSet (Nominal2Binomial)

AssociationRules (Create Association Rules) Result History FrequentItemSets (FP-Growth)

Data Annotations

No. of Sets: 26 Total Max. Size: 4

Min. Size: 1 Max. Size: 4 Contains Item:

Update View

Size	Support	Item 1	Item 2	Item 3	Item 4
1	0.110	Berangin	Suhu		
2	0.143	Berangin	Cuaca = Cerah		
2	0.143	Berangin	Cuaca = Hujan		
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	Kelembapan_Udara	Berangin	Suhu	
3	0.071	Kelembapan_Udara	Berangin	Cuaca = Cerah	
3	0.071	Kelembapan_Udara	Berangin	Cuaca = Hujan	
3	0.071	Kelembapan_Udara	Berangin	Cuaca = Mendung	
3	0.143	Kelembapan_Udara	Suhu	Cuaca = Cerah	
3	0.071	Kelembapan_Udara	Suhu	Cuaca = Mendung	
3	0.143	Berangin	Suhu	Cuaca = Cerah	
3	0.143	Kelembapan_Udara	Berangin	Suhu	Cuaca = Cerah
4	0.071	Kelembapan_Udara	Berangin	Suhu	Cuaca = Cerah

Repository

- Import Data
- Samples
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - Asosiasi\_Data\_Cuaca (LABSI-20 - v1, 11)
    - modul11 (LABSI-20 - v1, 11/20/19 9:12 AM)
    - Tabel\_Cuaca (LABSI-20 - v1, 11/20/19 8:5)
    - TabelTesting\_Cuaca (LABSI-20 - v1, 11/2

b. Association Rules (Create Association Rules)

i. Table View

File Edit Process View Connections Settings Extensions Help

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

Result History FrequentItemSets (FP-Growth)

ExampleSet (/Local Repository/TabelTesting\_Cuaca) ExampleSet (/Local Repository/Tabel\_Cuaca)

AssociationRules (Create Association Rules) ExampleSet (Nominal2Binomial)

Data Graph Description Annotations

Show rules matching all of these conclusions: Suhu Cuaca = Cerah

No.	Premises	Conclusion	Support
1	Berangin, Suhu	Cuaca = Cerah	0.143
2	Berangin, Cuaca = Cerah	Suhu	0.143
3	Kelembapan_Udara, Berangin, Suhu	Cuaca = Cerah	0.071
4	Kelembapan_Udara, Berangin, Cuaca = Cerah	Suhu	0.071

Min. Criterion: confidence Min. Criterion Value:

Repository

- Import Data
- Samples
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - Asosiasi\_Data\_Cuaca (LABSI-20 - v1, 11/20/19 9:12 AM)
    - modul11 (LABSI-20 - v1, 11/20/19 9:12 AM)
    - Tabel\_Cuaca (LABSI-20 - v1, 11/20/19 8:55 AM)
    - TabelTesting\_Cuaca (LABSI-20 - v1, 11/20/19 9:12 AM)

## ii. Graph View

File Edit Process View Connections Settings Extensions Help

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

Result History FrequentItemSets (FP-Growth)

ExampleSet (/Local Repository/TabelTesting\_Cuaca) ExampleSet (/Local Repository/Tabel\_Cuaca)

AssociationRules (Create Association Rules) ExampleSet (Nominal2Binomial)

Data Graph Description Annotations

Zoom ISOM Node Labels Edge Labels Filter Show rules matching all of these conclusions: Suhu Cuaca = Cerah

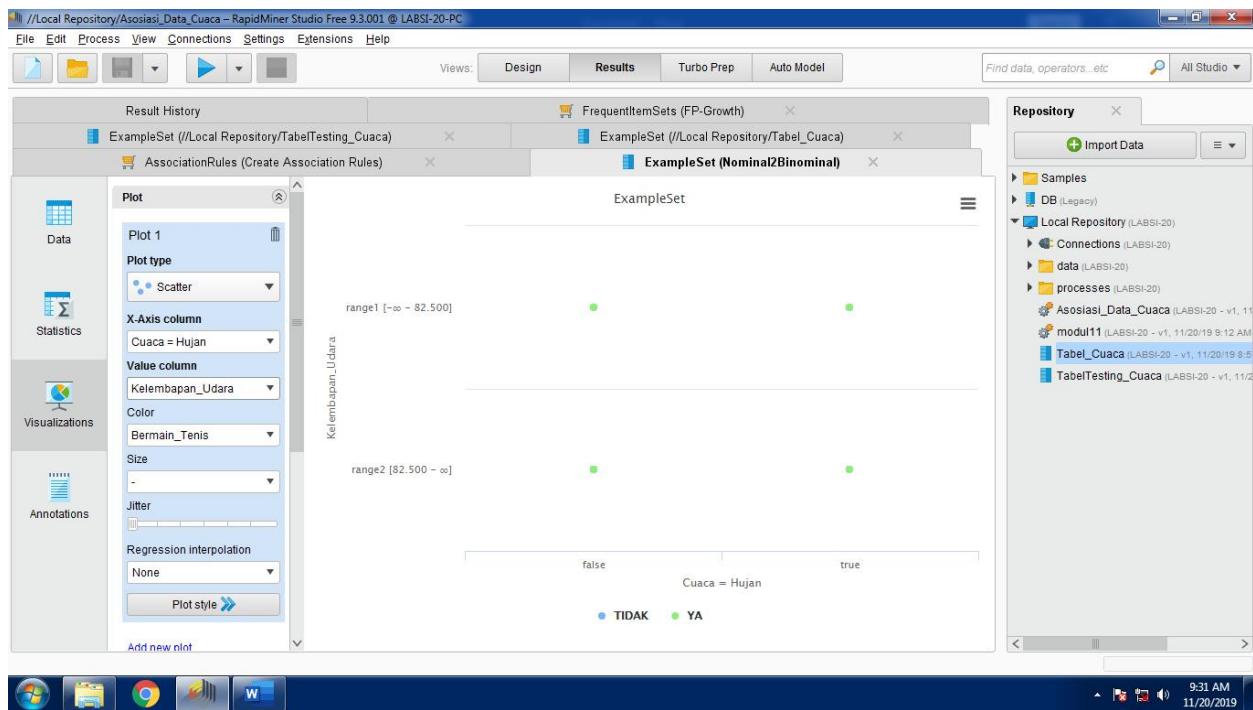
Rule 1 (0.143 / 1.000) Rule 2 (0.143 / 1.000) Rule 3 (0.071 / 1.000) Rule 4 (0.071 / 1.000)

Kelembapan\_Udara Suhu Cuaca = Cerah Berangin

Repository

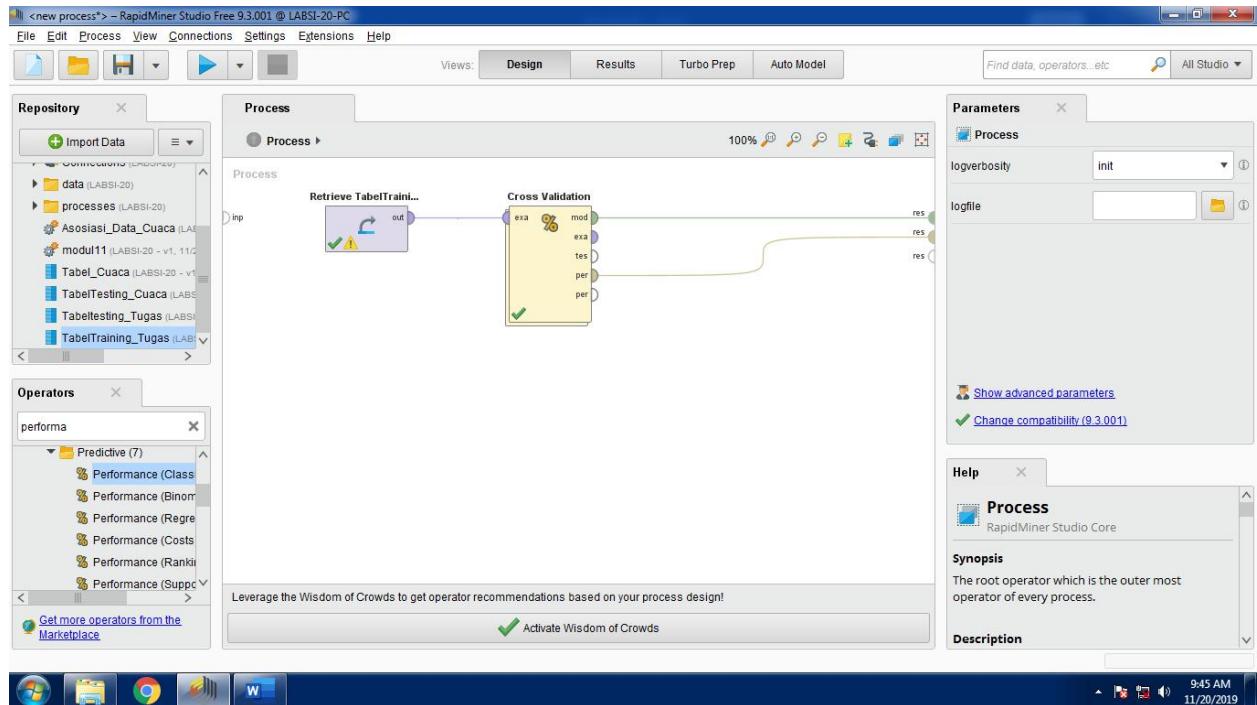
- Import Data
- Samples
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - Asosiasi\_Data\_Cuaca (LABSI-20 - v1, 11/20/19 9:12 AM)
    - modul11 (LABSI-20 - v1, 11/20/19 9:12 AM)
    - Tabel\_Cuaca (LABSI-20 - v1, 11/20/19 8:55 AM)
    - TabelTesting\_Cuaca (LABSI-20 - v1, 11/20/19 9:12 AM)

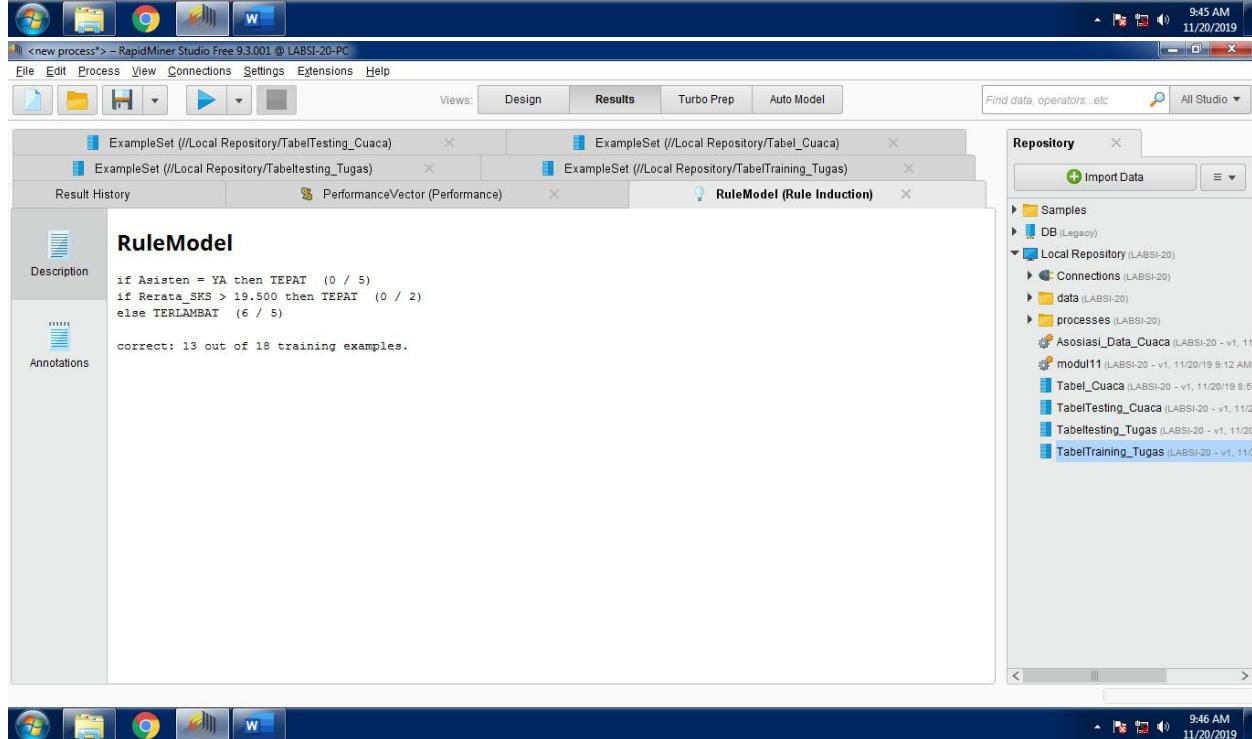
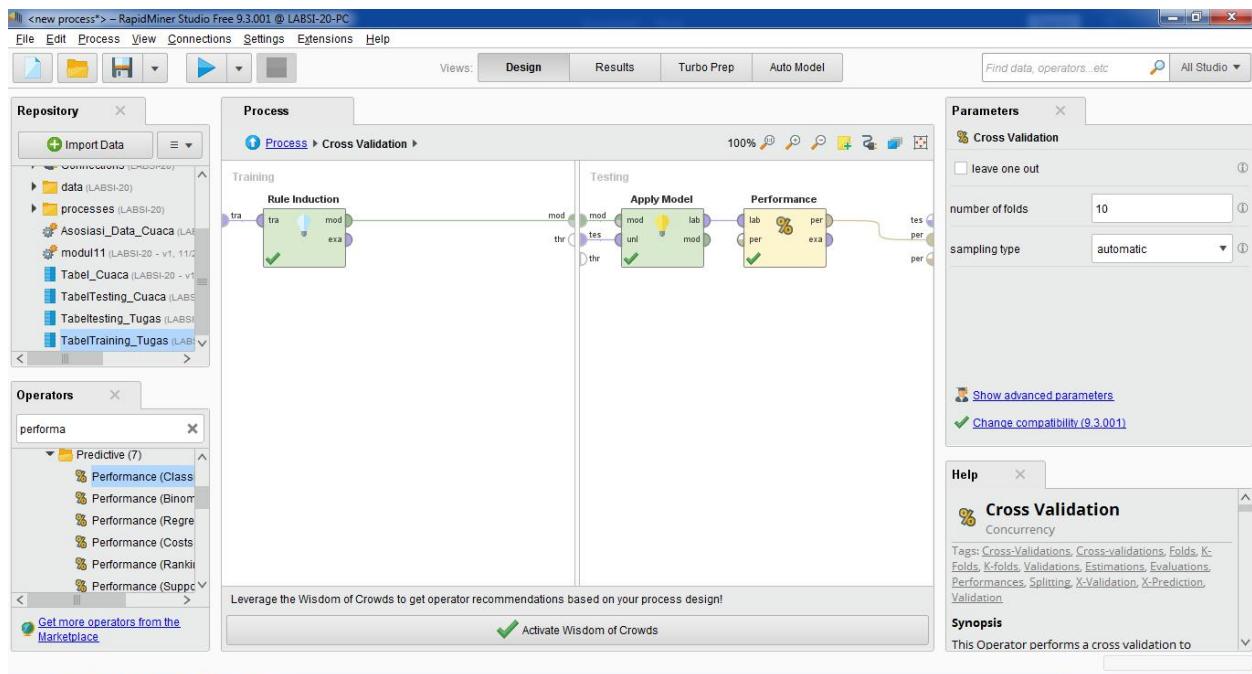
### iii. ExampleSet (Nominal2Binomial) → Charts View

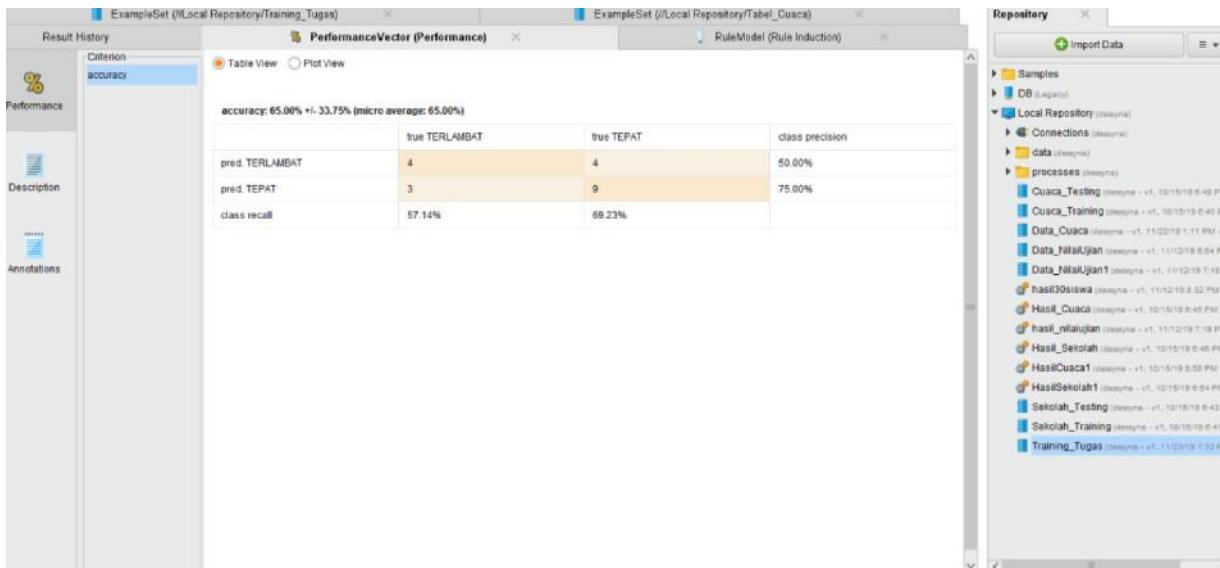


## 11.5. TUGAS

1. Dengan menggunakan data Lama Studi (format Excel) pada Tugas Modul 6 Soal No. 1, carilah pola hubungan berdasarkan *Induction Rule (Rule Model)*, dan nilai *performance vector*!

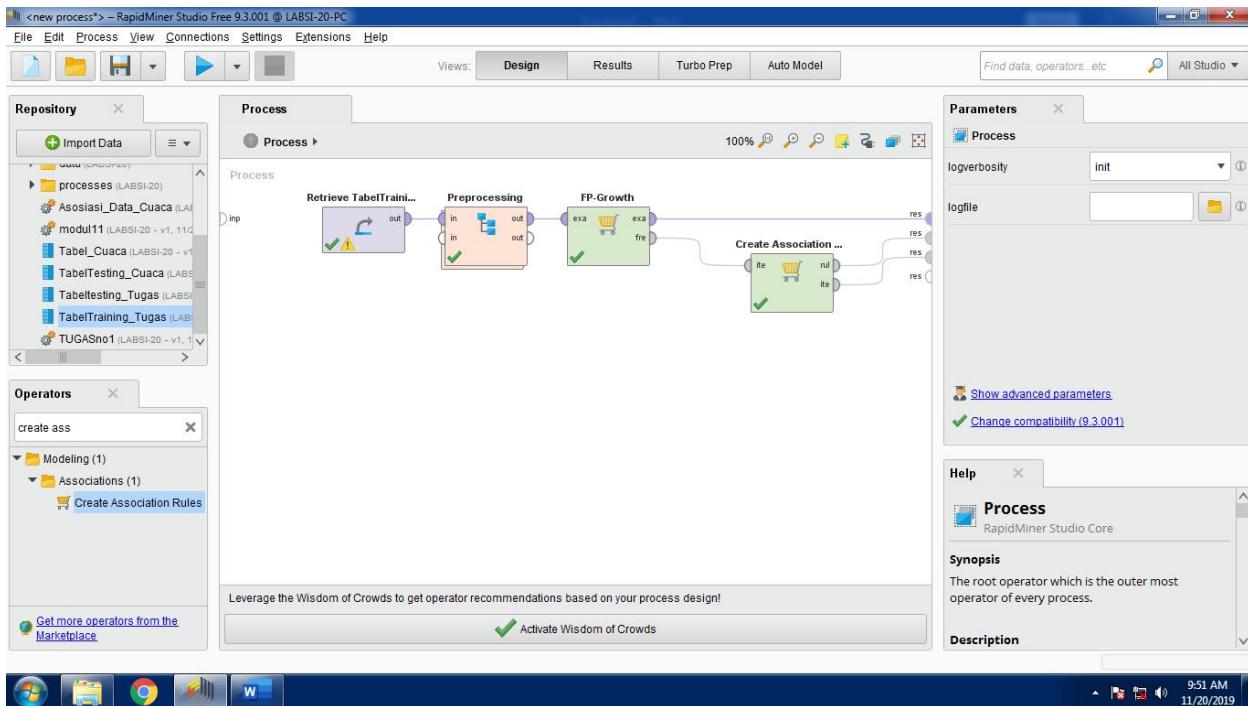


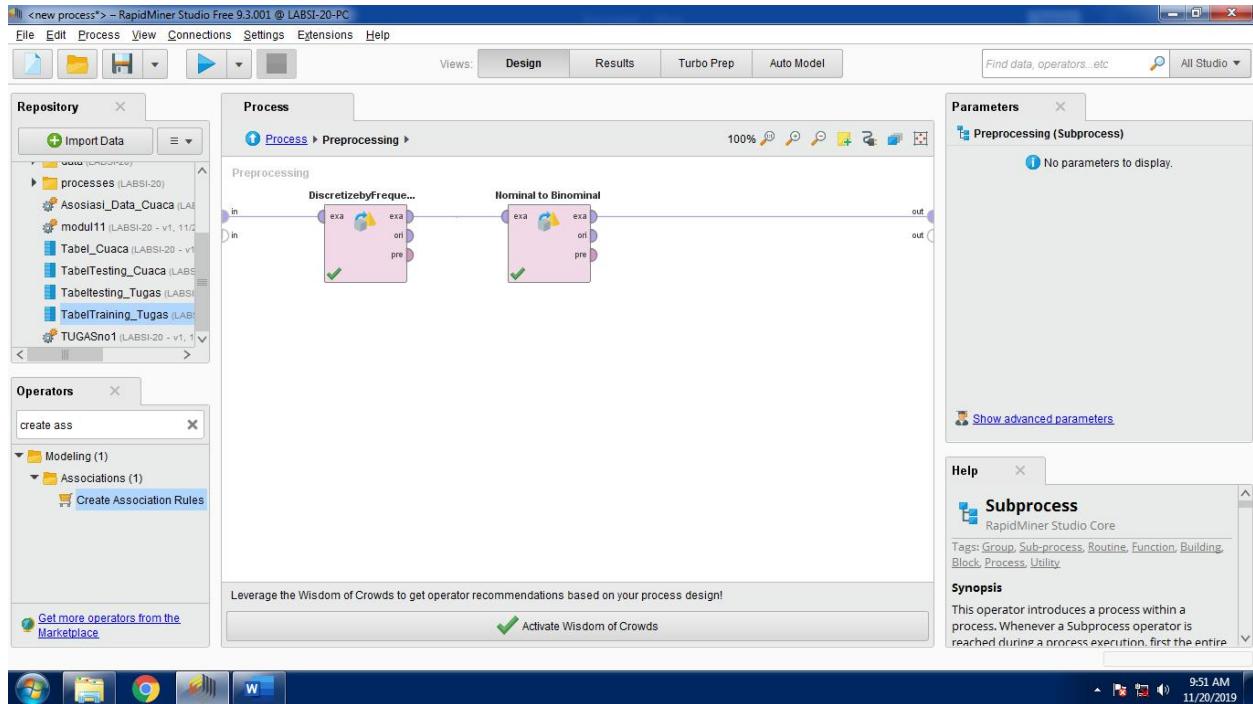




2. Masih dengan menggunakan *data training* yang sama, dengan ketentuan bahwa pada operator *Discretize by Frequency* memiliki nilai :

a) *number of bins = 2*





### a. Frequent Item Set (FP-Growth)

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
1	0.750	Gender				
1	0.500	Jurusan_SMA = ...				
1	0.300	Asal_Sekolah				
1	0.300	Jurusan_SMA = ...				
1	0.250	Asisten				
1	0.250	Rerata_SKS				
1	0.200	Jurusan_SMA = ...				
2	0.350	Gender	Jurusan_SMA = ...			
2	0.250	Gender	Asal_Sekolah			
2	0.200	Gender	Jurusan_SMA = ...			
2	0.250	Gender	Rerata_SKS			
2	0.150	Gender	Jurusan_SMA = ...			
2	0.150	Iuran_SMA = ...	Asal_Sekolah			

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Repository

- Samples
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - Asosiasi\_Data\_Cuaca (LABSI-20 - v1, 11/20/2019 9:12 AM)
    - modul11 (LABSI-20 - v1, 11/20/2019 9:12 AM)
    - Tabel\_Cuaca (LABSI-20 - v1, 11/20/2019 8:55 AM)
    - TabelTesting\_Cuaca (LABSI-20 - v1, 11/20/2019 8:55 AM)
    - TabelTesting\_Tugas (LABSI-20 - v1, 11/20/2019 8:55 AM)
    - TabelTraining\_Tugas (LABSI-20 - v1, 11/20/2019 8:55 AM)
    - TUGASno1 (LABSI-20 - v1, 11/20/2019 9:46 AM)

Result History

FrequentItemSets (FP-Growth)

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
2	0.150	Jurusan_SMA = ...	Asal_Sekolah			
2	0.200	Jurusan_SMA = ...	Asisten			
2	0.100	Jurusan_SMA = ...	Rerata_SKS			
2	0.100	Asal_Sekolah	Jurusan_SMA = ...			
2	0.150	Asal_Sekolah	Asisten			
2	0.150	Asal_Sekolah	Rerata_SKS			
2	0.050	Asal_Sekolah	Jurusan_SMA = ...			
2	0.100	Jurusan_SMA = ...	Rerata_SKS			
2	0.150	Asisten	Rerata_SKS			
2	0.050	Asisten	Jurusan_SMA = ...			
2	0.050	Rerata_SKS	Jurusan_SMA = ...			
3	0.100	Gender	Jurusan_SMA = ...	Asal_Sekolah		
3	0.150	Gender	Jurusan_SMA = ...	Asisten		

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Repository

- Samples
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - Asosiasi\_Data\_Cuaca (LABSI-20 - v1, 11/20/2019 9:12 AM)
    - modul11 (LABSI-20 - v1, 11/20/2019 9:12 AM)
    - Tabel\_Cuaca (LABSI-20 - v1, 11/20/2019 8:55 AM)
    - TabelTesting\_Cuaca (LABSI-20 - v1, 11/20/2019 8:55 AM)
    - TabelTesting\_Tugas (LABSI-20 - v1, 11/20/2019 8:55 AM)
    - TabelTraining\_Tugas (LABSI-20 - v1, 11/20/2019 8:55 AM)
    - TUGASno1 (LABSI-20 - v1, 11/20/2019 9:46 AM)

Result History

FrequentItemSets (FP-Growth)

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
3	0.100	Gender	Jurusan_SMA = ...	Rerata_SKS		
3	0.100	Gender	Asal_Sekolah	Jurusan_SMA = ...		
3	0.100	Gender	Asal_Sekolah	Asisten		
3	0.150	Gender	Asal_Sekolah	Rerata_SKS		
3	0.050	Gender	Asal_Sekolah	Jurusan_SMA = ...		
3	0.100	Gender	Jurusan_SMA = ...	Rerata_SKS		
3	0.150	Gender	Asisten	Rerata_SKS		
3	0.050	Gender	Asisten	Jurusan_SMA = ...		
3	0.050	Gender	Rerata_SKS	Jurusan_SMA = ...		
3	0.100	Jurusan_SMA = ...	Asal_Sekolah	Asisten		
3	0.050	Jurusan_SMA = ...	Asal_Sekolah	Rerata_SKS		
3	0.100	Jurusan_SMA = ...	Asisten	Rerata_SKS		
3	0.050	Asal_Sekolah	Jurusan_SMA = ...	Rerata_SKS		

The screenshot shows the RapidMiner Studio interface with a process titled "FrequentItemSets (FP-Growth)". The process has five input ExampleSets and one output FrequentItemSets. The inputs are:

- ExampleSet (/Local Repository/TableTesting\_Cuaca)
- ExampleSet (/Local Repository/TableTesting\_Tugas)
- AssociationRules (Create Association Rules)
- ExampleSet (/Local Repository/TableTraining\_Tugas)
- ExampleSet (Nominal to Binomial)

The output is:

FrequentItemSets (FP-Growth)

The "Annotations" panel on the left contains the following information:

- No. of Sets: 55
- Total Max. Size: 5
- Min. Size: 1
- Max. Size: 5
- Contains item:
- Update View

The "Data" panel displays the results of the frequent item set mining. The table has columns: Size, Support, Item 1, Item 2, Item 3, Item 4, and Item 5. The data is as follows:

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
3	0.100	Asal_Sekolah	Asisten	Rerata_SKS		
3	0.050	Asal_Sekolah	Asisten	Jurusan_SMA = ...		
3	0.050	Asal_Sekolah	Rerata_SKS	Jurusan_SMA = ...		
3	0.050	Asisten	Rerata_SKS	Jurusan_SMA = ...		
4	0.050	Gender	Jurusan_SMA = ...	Asal_Sekolah	Asisten	
4	0.050	Gender	Jurusan_SMA = ...	Asal_Sekolah	Rerata_SKS	
4	0.100	Gender	Jurusan_SMA = ...	Asisten	Rerata_SKS	
4	0.050	Gender	Asal_Sekolah	Jurusan_SMA = ...	Rerata_SKS	
4	0.100	Gender	Asal_Sekolah	Asisten	Rerata_SKS	
4	0.050	Gender	Asal_Sekolah	Asisten	Jurusan_SMA = ...	
4	0.050	Gender	Asal_Sekolah	Rerata_SKS	Jurusan_SMA = ...	
4	0.050	Gender	Asisten	Rerata_SKS	Jurusan_SMA = ...	
4	0.050	Jurusan_SMA = ...	Asal_Sekolah	Asisten	Rerata_SKS	
4	0.050	Asal_Sekolah	Asisten	Rerata_SKS		

The "Repository" panel on the right lists the following items:

- Samples
- DB (Legacy)
- Local Repository (LABSI-20)
  - Connections (LABSI-20)
  - data (LABSI-20)
  - processes (LABSI-20)
    - Asosiasi\_Data\_Cuaca (LABSI-20 - v1, 11/20/19 9:12 AM)
    - modul11 (LABSI-20 - v1, 11/20/19 9:12 AM)
    - Tabel\_Cuaca (LABSI-20 - v1, 11/20/19 8:51 AM)
    - TableTesting\_Cuaca (LABSI-20 - v1, 11/20/19 8:51 AM)
    - TableTesting\_Tugas (LABSI-20 - v1, 11/20/19 8:51 AM)
    - TableTraining\_Tugas (LABSI-20 - v1, 11/20/19 8:51 AM)
    - TUGASHno1 (LABSI-20 - v1, 11/20/19 9:46 AM)

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

- File Menu:** File, Edit, Process, View, Connections, Settings, Extensions, Help.
- Toolbar:** Includes icons for New, Open, Save, Import, Export, Run, Stop, and Help.
- Views:** Design, Results (selected), Turbo Prep, Auto Model.
- Result History:** Shows several recent processes:
  - ExampleSet (/Local Repository/TabelTesting\_Cuaca)
  - ExampleSet (/Local Repository/Tabel\_Cuaca)
  - ExampleSet (/Local Repository/Tabeltesting\_Tugas)
  - ExampleSet (/Local Repository/TabelTraining\_Tugas)
  - AssociationRules (Create Association Rules)
  - ExampleSet (Nominal to Binomial)
- Current Result:** FrequentItemSets (FP-Growth).
- Data View:** Shows the results of the FP-Growth algorithm.

No. of Sets: 55	Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
Total Max. Size: 5	3	0.050	Asal_Sekolah	Rerata_SKS	Jurusan_SMA = ...		
Min. Size: 1	3	0.050	Asisten	Rerata_SKS	Jurusan_SMA = ...		
Max. Size: 5	4	0.050	Gender	Jurusan_SMA = ...	Asal_Sekolah	Asisten	
Contains item:	4	0.050	Gender	Jurusan_SMA = ...	Asisten	Rerata_SKS	
	4	0.100	Gender	Jurusan_SMA = ...	Asisten	Rerata_SKS	
	4	0.050	Gender	Asal_Sekolah	Jurusan_SMA = ...	Rerata_SKS	
	4	0.100	Gender	Asal_Sekolah	Asisten	Rerata_SKS	
	4	0.050	Gender	Asal_Sekolah	Asisten	Jurusan_SMA = ...	
	4	0.050	Gender	Asal_Sekolah	Rerata_SKS	Jurusan_SMA = ...	
	4	0.050	Gender	Asisten	Rerata_SKS	Jurusan_SMA = ...	
	4	0.050	Jurusan_SMA = ...	Asal_Sekolah	Asisten	Rerata_SKS	
	4	0.050	Asal_Sekolah	Asisten	Rerata_SKS	Jurusan_SMA = ...	
	5	0.050	Gender	Jurusan_SMA = ...	Asal_Sekolah	Asisten	Rerata_SKS
	5	0.050	Gender	Asal_Sekolah	Asisten	Rerata_SKS	Jurusan_SMA = ...
- Annotations View:** Shows annotations for the results.
- Repository View:** Shows the local repository structure:
  - Samples
  - DB (Legacy)
  - Local Repository (LABSI-20)
    - Connections (LABSI-20)
    - data (LABSI-20)
    - processes (LABSI-20)
    - Asosiasi\_Data\_Cuaca (LABSI-20 - v1.11/20/19 9:12 AM)
    - modul11 (LABSI-20 - v1.11/20/19 9:12 AM)
    - Tabel\_Cuaca (LABSI-20 - v1.11/20/19 9:12 AM)
    - TabelTesting\_Cuaca (LABSI-20 - v1.11/20/19 9:12 AM)
    - Tabeltesting\_Tugas (LABSI-20 - v1.11/20/19 9:12 AM)
    - TabelTraining\_Tugas (LABSI-20 - v1.11/20/19 9:12 AM)
    - TUGASno1 (LABSI-20 - v1.11/20/19 9:46 AM)
- System Bar:** Includes icons for Taskbar, Start, File Explorer, Google Chrome, File Manager, Task View, and a Windows logo.
- Bottom Bar:** Shows the date (11/20/2019), time (9:56 AM), and system status.

### b. Association Rules

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History

FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules)

No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
3	Asal_Sekolah	Gender	0.250	0.833	0.962	-0.350
4	Jurusan_SMA = IPA	Gender	0.250	0.833	0.962	-0.350
5	Asal_Sekolah	Gender	0.250	1	1	-0.250
6	Asisten	Gender	0.100	1	1	-0.100
7	Rerata_SKS	Gender	0.100	1	1	-0.100
8	Jurusan_SMA = IPA, Rerata_SKS	Gender	0.100	1	1	-0.100
9	Asal_Sekolah, Jurusan_SMA = LAIN	Gender	0.150	1	1	-0.150
10	Asisten, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
11	Rerata_SKS, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
12	Asisten, Rerata_SKS	Gender	0.050	1	1	-0.050
13	Asal_Sekolah, Asisten	Gender	0.050	1	1	-0.050
14	Asal_Sekolah, Rerata_SKS	Gender	0.050	1	1	-0.050
15	Asisten, Asisten	Gender	0.050	1	1	-0.050
16	Asisten, Rerata_SKS	Gender	0.050	1	1	-0.050

Min. Criterion: confidence  
Min. Criterion Value: 0.05

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History

FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules)

No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
17	Asal_Sekolah, Jurusan_SMA = LAIN	Rerata_SKS	0.050	1	1	-0.050
18	Asisten, Jurusan_SMA = IPA	Asal_Sekolah	0.050	1	1	-0.050
19	Asisten, Rerata_SKS	Asisten	0.050	1	1	-0.050
20	Asisten, Rerata_SKS, Jurusan_SMA = LAIN	Asisten	0.050	1	1	-0.050
21	Asisten, Rerata_SKS, Jurusan_SMA = LAIN, Asal_Sekolah	Asisten	0.050	1	1	-0.050
22	Asisten, Rerata_SKS, Jurusan_SMA = IPA	Asisten	0.050	1	1	-0.050
23	Asisten, Rerata_SKS, Jurusan_SMA = IPA, Asal_Sekolah	Asisten	0.050	1	1	-0.050
24	Asisten, Rerata_SKS, Jurusan_SMA = IPA, Asisten	Asisten	0.050	1	1	-0.050
25	Asisten, Rerata_SKS, Jurusan_SMA = IPA, Asisten, Asisten	Asisten	0.050	1	1	-0.050
26	Asisten, Rerata_SKS, Jurusan_SMA = IPA, Asisten, Asisten	Asisten	0.050	1	1	-0.050
27	Asisten, Rerata_SKS, Jurusan_SMA = IPA, Asisten, Asisten	Asisten	0.050	1	1	-0.050
28	Asisten, Rerata_SKS, Jurusan_SMA = IPA, Asisten, Asisten	Asisten	0.050	1	1	-0.050
29	Asisten, Rerata_SKS, Jurusan_SMA = IPA, Asisten, Asisten	Asisten	0.050	1	1	-0.050
30	Asisten, Rerata_SKS, Jurusan_SMA = IPA, Asisten, Asisten	Asisten	0.050	1	1	-0.050

Min. Criterion: confidence  
Min. Criterion Value: 0.05

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules) ExampleSet (Nominal to Binomial)

Show rules matching all of these conclusions: Gender Jurusan\_SMA = IPA Asal\_Sekolah Asisten Rerata\_SKS

No. Premises Conclusion Support Confidence LaPlace Gain

31	Gender, Asisten, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1	1	-0.050
32	Asal_Sekolah, Asisten, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
33	Asal_Sekolah, Jurusan_SMA = LAIN	Gender, Rerata_SKS	0.050	1	1	-0.050
34	Gender, Asal_Sekolah, Jurusan_SMA = LAIN	Rerata_SKS	0.050	1	1	-0.050
35	Rerata_SKS, Jurusan_SMA = LAIN	Gender, Asal_Sekolah	0.050	1	1	-0.050
36	Gender, Rerata_SKS, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1	1	-0.050
37	Asal_Sekolah, Rerata_SKS, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
38	Asisten, Jurusan_SMA = LAIN	Gender, Rerata_SKS	0.050	1	1	-0.050
39	Gender, Asisten, Jurusan_SMA = LAIN	Rerata_SKS	0.050	1	1	-0.050
40	Rerata_SKS, Jurusan_SMA = LAIN	Gender, Asisten	0.050	1	1	-0.050
41	Gender, Rerata_SKS, Jurusan_SMA = LAIN	Asisten	0.050	1	1	-0.050
42	Asisten, Rerata_SKS, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
43	Jurusan_SMA = IPA, Asal_Sekolah, Rerata_SKS	Asisten	0.050	1	1	-0.050
44	Asal_Sekolah, Jurusan_SMA = LAIN	Asisten, Rerata_SKS	0.050	1	1	-0.050

Min. Criterion: confidence Min. Criterion Value:

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules) ExampleSet (Nominal to Binomial)

Show rules matching all of these conclusions: Gender Jurusan\_SMA = IPA Asal\_Sekolah Asisten Rerata\_SKS

No. Premises Conclusion Support Confidence LaPlace Gain

45	Asisten, Jurusan_SMA = LAIN	Asal_Sekolah, Rerata_SKS	0.050	1	1	-0.050
46	Asal_Sekolah, Asisten, Jurusan_SMA = LAIN	Rerata_SKS	0.050	1	1	-0.050
47	Rerata_SKS, Jurusan_SMA = LAIN	Asal_Sekolah, Asisten	0.050	1	1	-0.050
48	Asal_Sekolah, Rerata_SKS, Jurusan_SMA = LAIN	Asisten	0.050	1	1	-0.050
49	Asisten, Rerata_SKS, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1	1	-0.050
50	Gender, Jurusan_SMA = IPA, Asal_Sekolah, Asisten	Rerata_SKS	0.050	1	1	-0.050
51	Jurusan_SMA = IPA, Asal_Sekolah, Rerata_SKS	Gender, Asisten	0.050	1	1	-0.050
52	Gender, Jurusan_SMA = IPA, Asal_Sekolah, Rerat...	Asisten	0.050	1	1	-0.050
53	Jurusan_SMA = IPA, Asal_Sekolah, Asisten, Rerat...	Gender	0.050	1	1	-0.050
54	Asal_Sekolah, Jurusan_SMA = LAIN	Gender, Asisten, Rerata_SKS	0.050	1	1	-0.050
55	Gender, Asal_Sekolah, Jurusan_SMA = LAIN	Asisten, Rerata_SKS	0.050	1	1	-0.050
56	Asisten, Jurusan_SMA = LAIN	Gender, Asal_Sekolah, Rerata_SKS	0.050	1	1	-0.050
57	Gender, Asisten, Jurusan_SMA = LAIN	Asal_Sekolah, Rerata_SKS	0.050	1	1	-0.050
58	Asal_Sekolah, Asisten, Jurusan_SMA = LAIN	Gender, Rerata_SKS	0.050	1	1	-0.050

Min. Criterion: confidence Min. Criterion Value:

**Screenshot A: RapidMiner Studio Free 9.3.001**

The screenshot shows the RapidMiner interface with the following details:

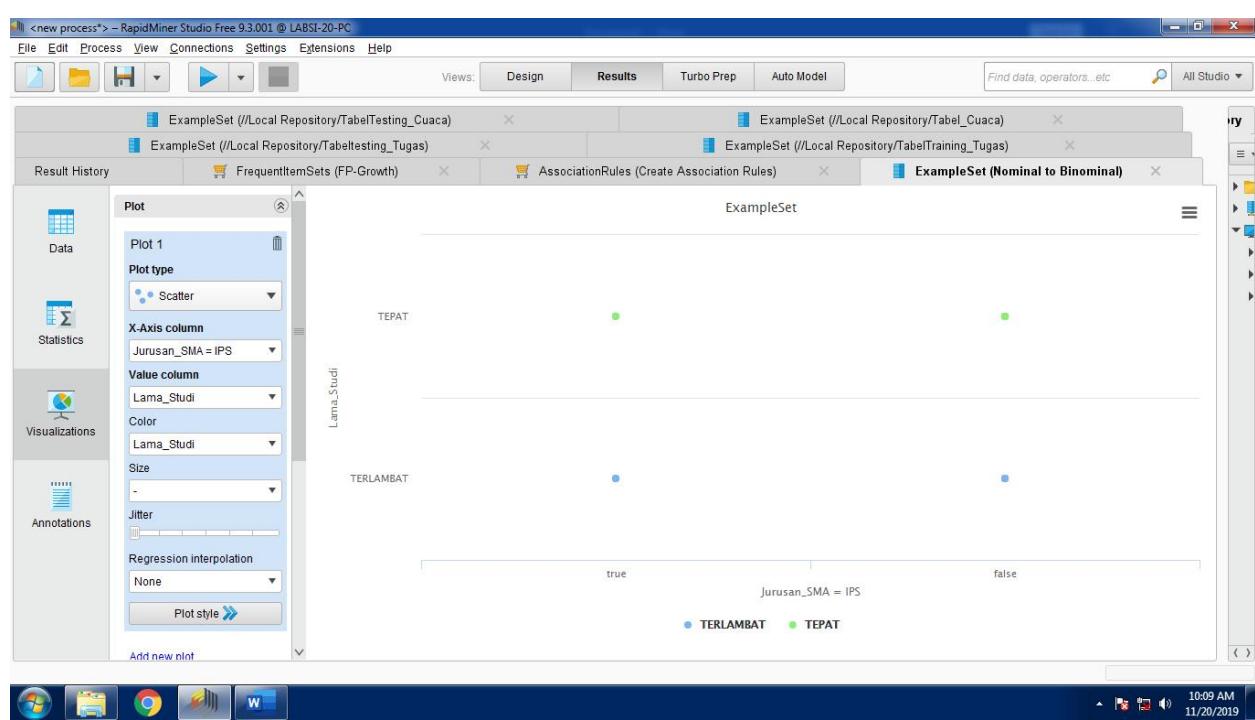
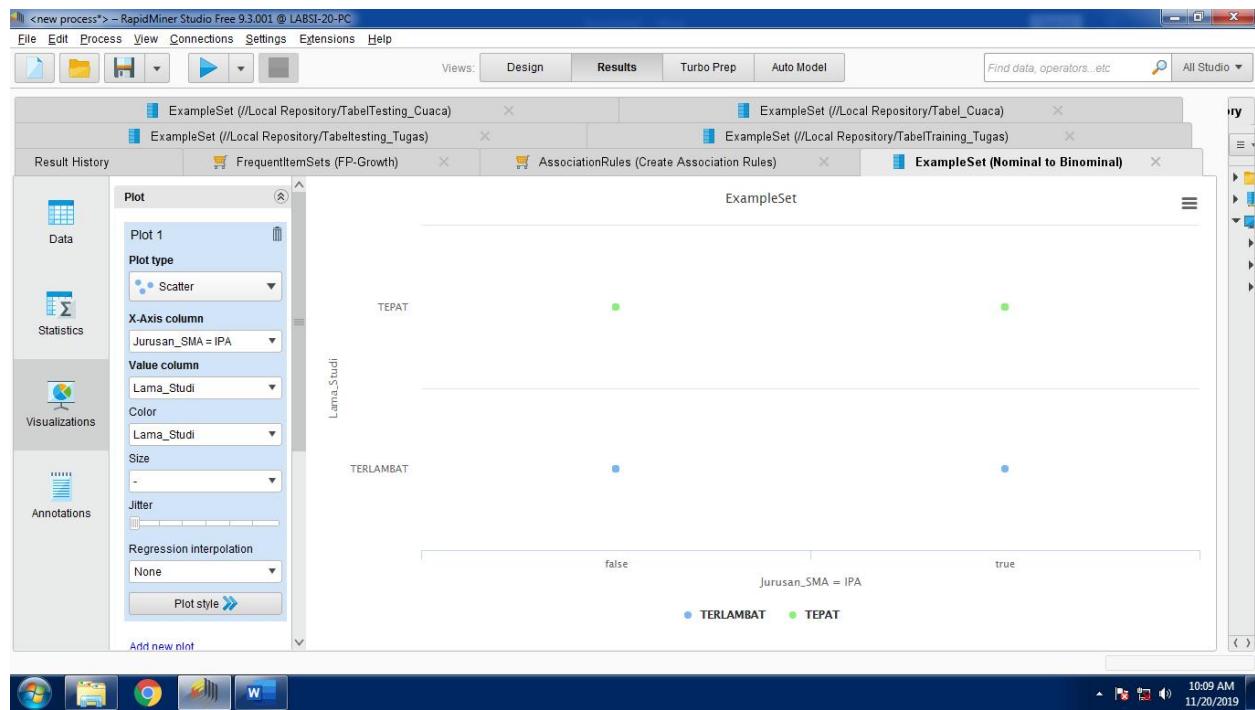
- File Menu:** File, Edit, Process, View, Connections, Settings, Extensions, Help.
- Views:** Design, Results, Turbo Prep, Auto Model.
- Toolbars:** Standard toolbar with icons for file operations.
- Result History:** Shows four datasets: ExampleSet (/Local Repository/TabelTesting\_Cuaca), ExampleSet (/Local Repository/TabelTesting\_Tugas), ExampleSet (/Local Repository/TabelTraining\_Tugas), and ExampleSet (Nominal to Binomial).
- Current View:** AssociationRules (Create Association Rules).
- Data View:** A table showing association rules. The columns are No., Premises, Conclusion, Support, Confidence, LaPlace, and Gain. The table contains 66 rows of rules, such as "Gender Jurusan\_SMA = IPA, Asal\_Sekolah, Asisten, Rerata..." leading to "Gender" with support 0.050 and confidence 1.
- Left Sidebar:** Data, Graph, Description, Annotations. Under Data, there is a filter for "all of these conclusions" and a dropdown for "Min. Criterion" set to "confidence".
- Bottom:** Taskbar with icons for Windows, File Explorer, Google Chrome, File Explorer, and Word, along with system status (9:58 AM, 11/20/2019).

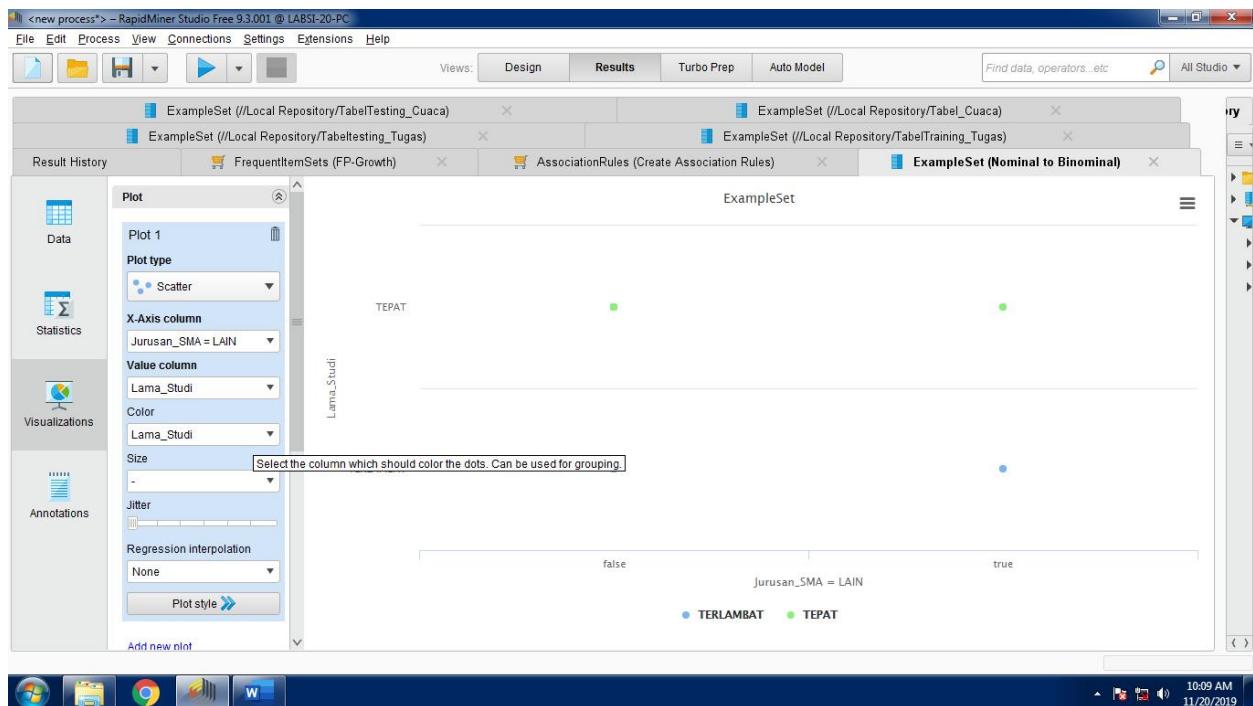
**Screenshot B: RapidMiner Studio Free 9.3.001**

The screenshot shows the RapidMiner interface with the following details:

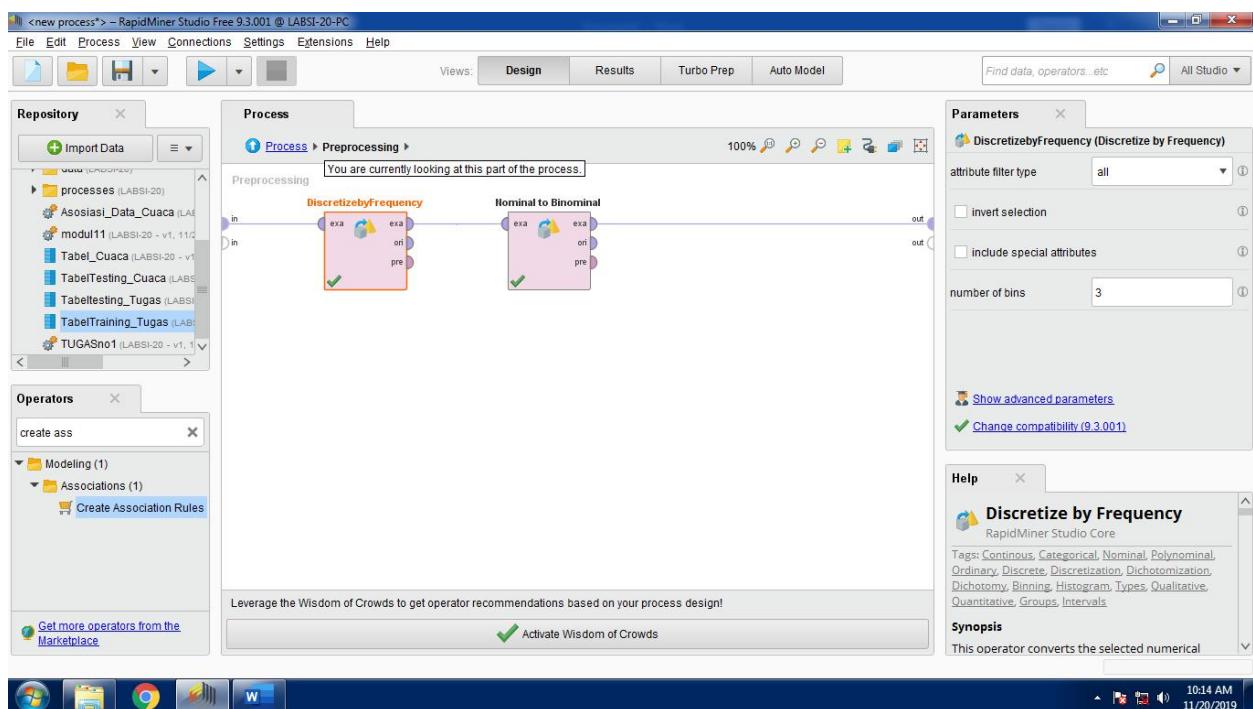
- File Menu:** File, Edit, Process, View, Connections, Settings, Extensions, Help.
- Views:** Design, Results, Turbo Prep, Auto Model.
- Toolbars:** Standard toolbar with icons for file operations.
- Result History:** Shows four datasets: ExampleSet (/Local Repository/TabelTesting\_Cuaca), ExampleSet (/Local Repository/TabelTesting\_Tugas), ExampleSet (/Local Repository/TabelTraining\_Tugas), and ExampleSet (Nominal to Binomial).
- Current View:** AssociationRules (Create Association Rules).
- Data View:** A grid of association rules. The first few rows are:
  - Rule 1 (0.200 / 0.800)
  - Rule 2 (0.200 / 0.800)
  - Rule 3 (0.250 / 0.833)
  - Rule 4 (0.250 / 0.833)
  - Rule 6 (0.100 / 1.000)
  - Rule 23 (0.100 / 1.000)
  - Rule 22 (0.100 / 1.000)
  - Rule 30 (0.050 / 1.000)
- Left Sidebar:** Data, Graph, Description, Annotations. Under Data, there is a "Zoom" section with icons for zoom in and out, and an "ISOM" section with checkboxes for "Node Labels" and "Edge Labels".
- Bottom:** Taskbar with icons for Windows, File Explorer, Google Chrome, File Explorer, and Word, along with system status (10:07 AM, 11/20/2019).

C.





### b. Number of bins = 3



**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History

FrequentItemSets (FP-Growth)

AssociationRules (Create Association Rules)

ExampleSet (/Local Repository/TabelTesting\_Cuaca)

ExampleSet (/Local Repository/TabelTesting\_Tugas)

ExampleSet (/Local Repository/TabelTraining\_Tugas)

ExampleSet (Nominal to Binomial)

Data Annotations

No. of Sets: 85 Total Max. Size: 5

Min. Size: 1 Max. Size: 5 Contains Item:

Update View

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
1	0.750	Gender				
1	0.500	Jurusan_SMA = IPA				
1	0.400	Rerata_SKS = range1 ...				
1	0.350	Rerata_SKS = range2 ...				
1	0.300	Asal_Sekolah				
1	0.300	Jurusan_SMA = IPS				
1	0.250	Asisten				
1	0.250	Rerata_SKS = range3 ...				
1	0.200	Jurusan_SMA = LAIN				
2	0.350	Gender	Jurusan_SMA = IPA			
2	0.200	Gender	Rerata_SKS = range1 ...			
2	0.300	Gender	Rerata_SKS = range2 ...			
2	0.250	Gender	Asal_Sekolah			
2	0.250	Gender	Jurusan_SMA = IPS			

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History

FrequentItemSets (FP-Growth)

AssociationRules (Create Association Rules)

ExampleSet (/Local Repository/TabelTesting\_Cuaca)

ExampleSet (/Local Repository/TabelTesting\_Tugas)

ExampleSet (/Local Repository/TabelTraining\_Tugas)

ExampleSet (Nominal to Binomial)

Data Annotations

No. of Sets: 85 Total Max. Size: 5

Min. Size: 1 Max. Size: 5 Contains Item:

Update View

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
2	0.200	Gender	Asisten			
2	0.250	Gender	Rerata_SKS = range3 ...			
2	0.150	Gender	Jurusan_SMA = LAIN			
2	0.200	Jurusan_SMA = IPA	Rerata_SKS = range1 ...			
2	0.200	Jurusan_SMA = IPA	Rerata_SKS = range2 ...			
2	0.150	Jurusan_SMA = IPA	Asal_Sekolah			
2	0.200	Jurusan_SMA = IPA	Asisten			
2	0.100	Jurusan_SMA = IPA	Rerata_SKS = range3 ...			
2	0.150	Rerata_SKS = range1 ...	Asal_Sekolah			
2	0.100	Rerata_SKS = range1 ...	Jurusan_SMA = IPS			
2	0.050	Rerata_SKS = range1 ...	Asisten			
2	0.100	Rerata_SKS = range1 ...	Jurusan_SMA = LAIN			
2	0.100	Rerata_SKS = range2 ...	Jurusan_SMA = IPS			
2	0.050	Rerata_SKS = range2 ...	Asisten			

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History

FrequentItemSets (FP-Growth)

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
2	0.050	Rerata_SKS = range2 ...	Jurusan_SMA = LAIN			
2	0.100	Asal_Sekolah	Jurusan_SMA = IPS			
2	0.150	Asal_Sekolah	Asisten			
2	0.150	Asal_Sekolah	Rerata_SKS = range3 ...			
2	0.050	Asal_Sekolah	Jurusan_SMA = LAIN			
2	0.100	Jurusan_SMA = IPS	Rerata_SKS = range3 ...			
2	0.150	Asisten	Rerata_SKS = range3 ...			
2	0.050	Asisten	Jurusan_SMA = LAIN			
2	0.050	Rerata_SKS = range3 ...	Jurusan_SMA = LAIN			
3	0.100	Gender	Jurusan_SMA = IPA	Rerata_SKS = range1 ...		
3	0.150	Gender	Jurusan_SMA = IPA	Rerata_SKS = range2 ...		
3	0.100	Gender	Jurusan_SMA = IPA	Asal_Sekolah		
3	0.150	Gender	Jurusan_SMA = IPA	Asisten		
3	0.100	Gender	Jurusan_SMA = IPA	Rerata_SKS = range3 ...		

Data Annotations

No. of Sets: 85 Total Max. Size: 5

Min. Size: 1 Max. Size: 5 Contains Item:  Update View

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History

FrequentItemSets (FP-Growth)

Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
3	0.100	Gender	Rerata_SKS = range1 ...	Asal_Sekolah		
3	0.050	Gender	Rerata_SKS = range1 ...	Jurusan_SMA = IPS		
3	0.050	Gender	Rerata_SKS = range1 ...	Jurusan_SMA = LAIN		
3	0.100	Gender	Rerata_SKS = range2 ...	Jurusan_SMA = IPS		
3	0.050	Gender	Rerata_SKS = range2 ...	Asisten		
3	0.050	Gender	Rerata_SKS = range2 ...	Jurusan_SMA = LAIN		
3	0.100	Gender	Asal_Sekolah	Jurusan_SMA = IPS		
3	0.100	Gender	Asal_Sekolah	Asisten		
3	0.150	Gender	Asal_Sekolah	Rerata_SKS = range3 ...		
3	0.050	Gender	Asal_Sekolah	Jurusan_SMA = LAIN		
3	0.100	Gender	Jurusan_SMA = IPS	Rerata_SKS = range3 ...		
3	0.150	Gender	Asisten	Rerata_SKS = range3 ...		
3	0.050	Gender	Asisten	Jurusan_SMA = LAIN		
3	0.050	Gender	Rerata_SKS = range3 ...	Jurusan_SMA = LAIN		

Data Annotations

No. of Sets: 85 Total Max. Size: 5

Min. Size: 1 Max. Size: 5 Contains Item:  Update View



The screenshot shows the RapidMiner Studio Free interface with the following details:

- Title Bar:** <new process\*> - RapidMiner Studio Free 9.3.001 @ LABSI-20-PC
- Menu Bar:** File, Edit, Process, View, Connections, Settings, Extensions, Help
- Toolbar:** Includes icons for Save, Open, Import, Export, Run, Stop, and Help.
- Views:** Design, Results, Turbo Prep, Auto Model
- Search Bar:** Find data, operators... etc
- Result History:** Shows four recent datasets: ExampleSet (/Local Repository/TabelTesting\_Cuaca), ExampleSet (/Local Repository/TabelTesting\_Tugas), ExampleSet (/Local Repository/TabelTraining\_Cuaca), and ExampleSet (/Local Repository/TabelTraining\_Tugas).
- Current View:** FrequentItemSets (FP.Growth)
- Data Table:** Displays frequent item sets with columns: Size, Support, Item 1, Item 2, Item 3, Item 4, and Item 5. The table includes filters for Data (No. of Sets: 85, Total Max. Size: 5) and Annotations (Min. Size: 1, Max. Size: 5, Contains Item: Asisten). An "Update View" button is also present.

No. of Sets: 85	Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
Total Max. Size: 5	3	0.100	Jurusan_SMA = IPA	Rerata_SKS = range1 ...	Asal_Sekolah		
Min. Size: 1	3	0.050	Jurusan_SMA = IPA	Rerata_SKS = range1 ...	Asisten		
Max. Size: 5	3	0.050	Jurusan_SMA = IPA	Rerata_SKS = range2 ...	Asisten		
Contains Item:	3	0.100	Jurusan_SMA = IPA	Asal_Sekolah	Asisten		
	3	0.050	Jurusan_SMA = IPA	Asal_Sekolah	Rerata_SKS = range3 ...		
	3	0.100	Jurusan_SMA = IPA	Asisten	Rerata_SKS = range3 ...		
	3	0.050	Rerata_SKS = range1 ...	Asal_Sekolah	Jurusan_SMA = IPS		
	3	0.050	Rerata_SKS = range1 ...	Asal_Sekolah	Asisten		
	3	0.050	Asal_Sekolah	Jurusan_SMA = IPS	Rerata_SKS = range3 ...		
	3	0.100	Asal_Sekolah	Asisten	Rerata_SKS = range3 ...		
	3	0.050	Asal_Sekolah	Asisten	Jurusan_SMA = LAIN		
	3	0.050	Asal_Sekolah	Rerata_SKS = range3 ...	Jurusan_SMA = LAIN		
	3	0.050	Asisten	Rerata_SKS = range3 ...	Jurusan_SMA = LAIN		
	4	0.050	Gender	Jurusan_SMA = IPA	Rerata_SKS = range1 ...	Asal_Sekolah	
	*	0.050	Gender	Jurusan_SMA = IPA	Rerata_SKS = range1 ...	Asal_Sekolah	

The screenshot shows the RapidMiner Studio Free interface with the title bar "`<new process>` - RapidMiner Studio Free 9.3.001 @ LABSI-20-PC". The menu bar includes File, Edit, Process, View, Connections, Settings, Extensions, and Help. The toolbar has icons for New, Open, Save, Import, Export, Run, Stop, and Preferences. The top navigation bar shows Views: Design, Results, Turbo Prep, Auto Model. Below it are tabs for ExampleSet, Data, Operators, etc., and All Studio. The main area displays the "Result History" pane for the "FrequentItemSets (FP-Growth)" operator. It lists 85 sets with a total max size of 5. The table columns are Size, Support, Item 1, Item 2, Item 3, Item 4, and Item 5. The data rows show various combinations of attributes like Gender, Jurusan\_SMA, Asal\_Sekolah, Rerata\_SKS, and IPS.

No. of Sets:	85	Size	Support	Item 1	Item 2	Item 3	Item 4	Item 5
Total Max. Size:	5							
Min. Size:	1	4	0.050	Gender	Jurusan_SMA = IPA	Asal_Sekolah	Asisten	
Max. Size:	5	4	0.050	Gender	Jurusan_SMA = IPA	Asal_Sekolah	Rerata_SKS = range3 ...	
Contains Item:		4	0.100	Gender	Jurusan_SMA = IPA	Asisten	Rerata_SKS = range3 ...	
		4	0.050	Gender	Rerata_SKS = range1 ...	Asal_Sekolah	Jurusan_SMA = IPS	
		4	0.050	Gender	Asal_Sekolah	Jurusan_SMA = IPS	Rerata_SKS = range3 ...	
		4	0.100	Gender	Asal_Sekolah	Asisten	Rerata_SKS = range3 ...	
		4	0.050	Gender	Asal_Sekolah	Asisten	Jurusan_SMA = LAIN	
		4	0.050	Gender	Asal_Sekolah	Rerata_SKS = range3 ...	Jurusan_SMA = LAIN	
		4	0.050	Gender	Asisten	Rerata_SKS = range3 ...	Jurusan_SMA = LAIN	
		4	0.050	Jurusan_SMA = IPA	Rerata_SKS = range1 ...	Asal_Sekolah	Asisten	
		4	0.050	Jurusan_SMA = IPA	Asal_Sekolah	Asisten	Rerata_SKS = range3 ...	
		4	0.050	Asal_Sekolah	Asisten	Rerata_SKS = range3 ...	Jurusan_SMA = LAIN	
		5	0.050	Gender	Jurusan_SMA = IPA	Asal_Sekolah	Asisten	Rerata_SKS = range3 ...
		5	0.050	Gender	Asal_Sekolah	Asisten	Rerata_SKS = range3 ...	Jurusan_SMA = LAIN

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules) ExampleSet (Nominal to Binomial)

Show rules matching all of these conclusions: Gender Jurusan\_SMA = IPA Asal\_Sekolah Asisten Rerata\_SKS = range3 [19.500 - ∞]

No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
3	Asal_Sekolah	Gender	0.250	0.833	0.962	-0.350
4	Jurusan_SMA = IPS	Gender	0.250	0.833	0.962	-0.350
5	Rerata_SKS = range2 [18.500 - 19.500]	Gender	0.300	0.857	0.963	-0.400
6	Rerata_SKS = range3 [19.500 - ∞]	Gender	0.250	1	1	-0.250
7	Jurusan_SMA = IPA, Rerata_SKS = range3 [19.500 - ∞]	Gender	0.100	1	1	-0.100
8	Rerata_SKS = range2 [18.500 - 19.500], Jurusan_SMA = IPS	Gender	0.100	1	1	-0.100
9	Rerata_SKS = range2 [18.500 - 19.500], Asisten	Gender	0.050	1	1	-0.050
10	Rerata_SKS = range2 [18.500 - 19.500], Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
11	Asal_Sekolah, Jurusan_SMA = IPS	Gender	0.100	1	1	-0.100
12	Asal_Sekolah, Rerata_SKS = range3 [19.500 - ∞]	Gender	0.150	1	1	-0.150
13	Asal_Sekolah, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
14	Jurusan_SMA = IPS, Rerata_SKS = range3 [19.500 - ∞]	Gender	0.100	1	1	-0.100
15	Asisten, Rerata_SKS = range3 [19.500 - ∞]	Gender	0.150	1	1	-0.150
16	Asisten, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050

Min. Criterion: confidence Min. Criterion Value:

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules) ExampleSet (Nominal to Binomial)

Show rules matching all of these conclusions: Gender Jurusan\_SMA = IPA Asal\_Sekolah Asisten Rerata\_SKS = range3 [19.500 - ∞]

No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
17	Rerata_SKS = range3 [19.500 - ∞], Jurusan_SMA = IPS	Gender	0.050	1	1	-0.050
18	Rerata_SKS = range1 [-∞ - 18.500], Asisten	Jurusan_SMA = IPA	0.050	1	1	-0.050
19	Rerata_SKS = range2 [18.500 - 19.500], Asisten	Jurusan_SMA = IPA	0.050	1	1	-0.050
20	Jurusan_SMA = IPA, Rerata_SKS = range3 [19.500 - ∞]	Asisten	0.100	1	1	-0.100
21	Rerata_SKS = range1 [-∞ - 18.500], Asisten	Asal_Sekolah	0.050	1	1	-0.050
22	Asal_Sekolah, Jurusan_SMA = LAIN	Asisten	0.050	1	1	-0.050
23	Asisten, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1	1	-0.050
24	Asal_Sekolah, Jurusan_SMA = LAIN	Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
25	Rerata_SKS = range3 [19.500 - ∞], Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1	1	-0.050
26	Asisten, Jurusan_SMA = LAIN	Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
27	Rerata_SKS = range3 [19.500 - ∞], Jurusan_SMA = IPS	Asisten	0.050	1	1	-0.050
28	Rerata_SKS = range2 [18.500 - 19.500], Asisten	Gender, Jurusan_SMA = IPA	0.050	1	1	-0.050
29	Gender, Rerata_SKS = range2 [18.500 - 19.500], Asisten	Jurusan_SMA = IPA	0.050	1	1	-0.050
30	Jurusan_SMA = IPA, Rerata_SKS = range2 [18.500 - 19.500]	Gender	0.050	1	1	-0.050

Min. Criterion: confidence Min. Criterion Value:

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules) ExampleSet (Nominal to Binomial)

Show rules matching all of these conclusions:

No. Premises Conclusion Support Confidence LaPlace Gain

31	Jurusan_SMA = IPA, Asal_Sekolah, Rerata_SKS = ...	Gender	0.050	1	1	-0.050
32	Jurusan_SMA = IPA, Rerata_SKS = range3 [19.50...]	Gender, Asisten	0.100	1	1	-0.100
33	Gender, Jurusan_SMA = IPA, Rerata_SKS = range3 [19.50...]	Asisten	0.100	1	1	-0.100
34	Jurusan_SMA = IPA, Asisten, Rerata_SKS = range3 [19.50...]	Gender	0.100	1	1	-0.100
35	Gender, Rerata_SKS = range1 [-∞ - 18.500], Juru...	Asal_Sekolah	0.050	1	1	-0.050
36	Rerata_SKS = range1 [-∞ - 18.500], Asal_Sekolah...	Gender	0.050	1	1	-0.050
37	Asal_Sekolah, Jurusan_SMA = IPS, Rerata_SKS = ...	Gender	0.050	1	1	-0.050
38	Gender, Asal_Sekolah, Asisten	Rerata_SKS = range3 [19.500 - ∞]	0.100	1	1	-0.100
39	Asal_Sekolah, Asisten, Rerata_SKS = range3 [19.50...]	Gender	0.100	1	1	-0.100
40	Asal_Sekolah, Jurusan_SMA = LAIN	Gender, Asisten	0.050	1	1	-0.050
41	Gender, Asal_Sekolah, Jurusan_SMA = LAIN	Asisten	0.050	1	1	-0.050
42	Asisten, Jurusan_SMA = LAIN	Gender, Asal_Sekolah	0.050	1	1	-0.050
43	Gender, Asisten, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1	1	-0.050
44	Asal_Sekolah, Asisten, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050

Min. Criterion: confidence Min. Criterion Value: 0.050

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules) ExampleSet (Nominal to Binomial)

Show rules matching all of these conclusions:

No. Premises Conclusion Support Confidence LaPlace Gain

45	Asal_Sekolah, Jurusan_SMA = LAIN	Gender, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
46	Gender, Asal_Sekolah, Jurusan_SMA = LAIN	Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
47	Rerata_SKS = range3 [19.500 - ∞], Jurusan_SMA ...	Gender, Asal_Sekolah	0.050	1	1	-0.050
48	Gender, Rerata_SKS = range3 [19.500 - ∞], Juru...	Asal_Sekolah	0.050	1	1	-0.050
49	Asal_Sekolah, Rerata_SKS = range3 [19.500 - ∞],...	Gender	0.050	1	1	-0.050
50	Asisten, Jurusan_SMA = LAIN	Gender, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
51	Gender, Asisten, Jurusan_SMA = LAIN	Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
52	Rerata_SKS = range3 [19.500 - ∞], Jurusan_SMA ...	Gender, Asisten	0.050	1	1	-0.050
53	Gender, Rerata_SKS = range3 [19.500 - ∞], Juru...	Asisten	0.050	1	1	-0.050
54	Asisten, Rerata_SKS = range3 [19.500 - ∞], Juru...	Gender	0.050	1	1	-0.050
55	Rerata_SKS = range1 [-∞ - 18.500], Asisten	Jurusan_SMA = IPA, Asal_Sekolah	0.050	1	1	-0.050
56	Jurusan_SMA = IPA, Rerata_SKS = range1 [-∞ - 1...	Asal_Sekolah	0.050	1	1	-0.050
57	Rerata_SKS = range1 [-∞ - 18.500], Asal_Sekolah...	Jurusan_SMA = IPA	0.050	1	1	-0.050
58	Jurusan_SMA = IPA, Asal_Sekolah, Rerata_SKS = ...	Asisten	0.050	1	1	-0.050

Min. Criterion: confidence Min. Criterion Value: 0.050

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History

FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules)

ExampleSet (/Local Repository/TabelTesting\_Cuaca) ExampleSet (/Local Repository/Tabel\_Cuaca)  
 ExampleSet (/Local Repository/TabelTesting\_Tugas) ExampleSet (/Local Repository/TabelTraining\_Tugas)  
 ExampleSet (Nominal to Binomial)

Show rules matching: all of these conclusions:

Data Graph Description Annotations

Min. Criterion: confidence Min. Criterion Value:

No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
59	Asal_Sekolah, Jurusan_SMA = LAIN	Asisten, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
60	Asisten, Jurusan_SMA = LAIN	Asal_Sekolah, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
61	Asal_Sekolah, Asisten, Jurusan_SMA = LAIN	Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
62	Rerata_SKS = range3 [19.500 - ∞], Jurusan_SMA ...	Asal_Sekolah, Asisten	0.050	1	1	-0.050
63	Asal_Sekolah, Rerata_SKS = range3 [19.500 - ∞], ...	Asisten	0.050	1	1	-0.050
64	Asisten, Rerata_SKS = range3 [19.500 - ∞], Jurus...	Asal_Sekolah	0.050	1	1	-0.050
65	Gender, Jurusan_SMA = IPA, Asal_Sekolah, Asisten	Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
66	Jurusan_SMA = IPA, Asal_Sekolah, Rerata_SKS = ...	Gender, Asisten	0.050	1	1	-0.050
67	Gender, Jurusan_SMA = IPA, Asal_Sekolah, Rerat...	Asisten	0.050	1	1	-0.050
68	Jurusan_SMA = IPA, Asal_Sekolah, Asisten, Rerat...	Gender	0.050	1	1	-0.050
69	Asal_Sekolah, Jurusan_SMA = LAIN	Gender, Asisten, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
70	Gender, Asal_Sekolah, Jurusan_SMA = LAIN	Asisten, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
71	Asisten, Jurusan_SMA = LAIN	Gender, Asal_Sekolah, Rerata_SKS = range3 [19....	0.050	1	1	-0.050
72	Gender, Asisten, Jurusan_SMA = LAIN	Asal_Sekolah, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050

10:18 AM 11/20/2019

**RapidMiner Studio Free 9.3.001 @ LABSI-20-PC**

File Edit Process View Connections Settings Extensions Help

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

Result History

FrequentItemSets (FP-Growth) AssociationRules (Create Association Rules)

ExampleSet (/Local Repository/TabelTesting\_Cuaca) ExampleSet (/Local Repository/Tabel\_Cuaca)  
 ExampleSet (/Local Repository/TabelTesting\_Tugas) ExampleSet (/Local Repository/TabelTraining\_Tugas)  
 ExampleSet (Nominal to Binomial)

Show rules matching: all of these conclusions:

Data Graph Description Annotations

Min. Criterion: confidence Min. Criterion Value:

No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
68	Jurusan_SMA = IPA, Asal_Sekolah, Asisten, Rerat...	Gender	0.050	1	1	-0.050
69	Asal_Sekolah, Jurusan_SMA = LAIN	Gender, Asisten, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
70	Gender, Asal_Sekolah, Jurusan_SMA = LAIN	Asisten, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
71	Asisten, Jurusan_SMA = LAIN	Gender, Asal_Sekolah, Rerata_SKS = range3 [19....	0.050	1	1	-0.050
72	Gender, Asisten, Jurusan_SMA = LAIN	Asal_Sekolah, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
73	Asal_Sekolah, Asisten, Jurusan_SMA = LAIN	Gender, Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
74	Gender, Asal_Sekolah, Asisten, Jurusan_SMA = L...	Rerata_SKS = range3 [19.500 - ∞]	0.050	1	1	-0.050
75	Rerata_SKS = range3 [19.500 - ∞], Jurusan_SMA ...	Gender, Asal_Sekolah, Asisten	0.050	1	1	-0.050
76	Gender, Rerata_SKS = range3 [19.500 - ∞], Jurus...	Asal_Sekolah, Asisten	0.050	1	1	-0.050
77	Asal_Sekolah, Rerata_SKS = range3 [19.500 - ∞], ...	Gender, Asisten	0.050	1	1	-0.050
78	Gender, Asal_Sekolah, Rerata_SKS = range3 [19....	Asisten	0.050	1	1	-0.050
79	Asisten, Rerata_SKS = range3 [19.500 - ∞], Jurus...	Gender, Asal_Sekolah	0.050	1	1	-0.050
80	Gender, Asisten, Rerata_SKS = range3 [19.500 - ...	Asal_Sekolah	0.050	1	1	-0.050
81	Asal_Sekolah, Asisten, Rerata_SKS = range3 [19....	Gender	0.050	1	1	-0.050

10:18 AM 11/20/2019

