

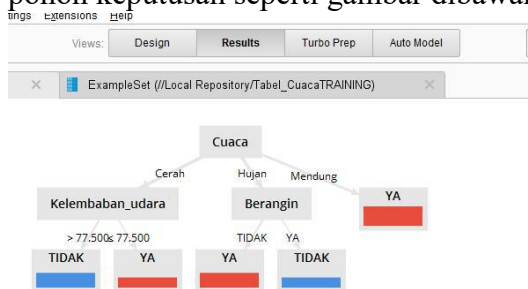
Nama : Fischella Angieta C

NM : L200170077

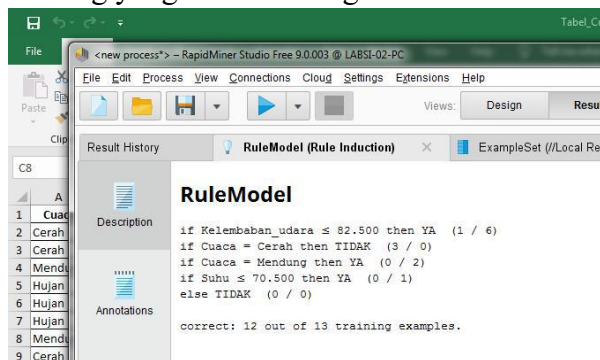
A. Kegiatan praktikum

1. Induksi Aturan Data Cuaca

- a. Menggunakan proses dari praktikum modul 9 dan menghasilkan sebuah pohon keputusan seperti gambar dibawah.

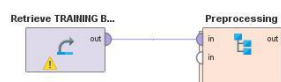
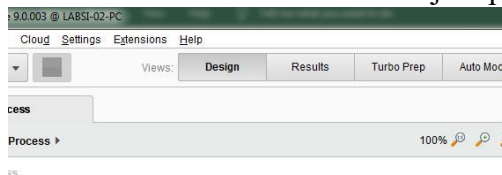


- b. Mengubah parameter sehingga menghasilkan sebuah induksi aturan dari data training yang disebut sebagai Rule Model

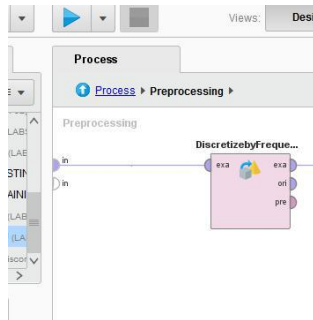


2. Aturan Asosiasi Data Cuaca

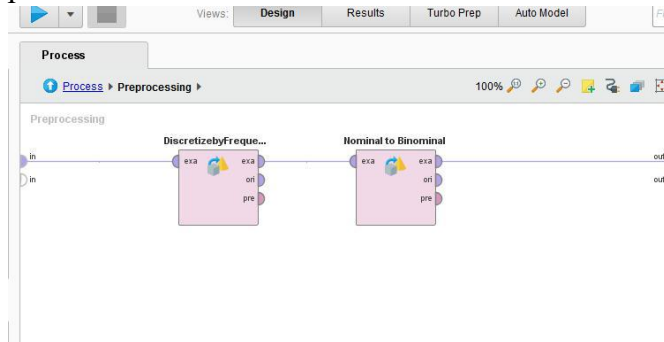
- a. Menggunakan DataCuaca_Training dan menggunakan parameter subprocess ke dalam area. Lalu ubah nama menjadi preprocessing.



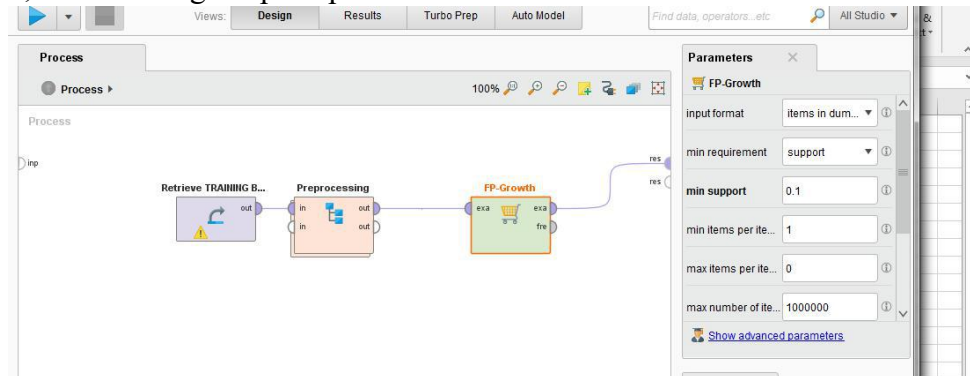
- b. Klik ganda pada operator preprocessing sehingga masuk pada nested chain. Lalu rename menjadi “DiscretizebyFrequency” dan biarkan nilai parameter number of bins = 2.



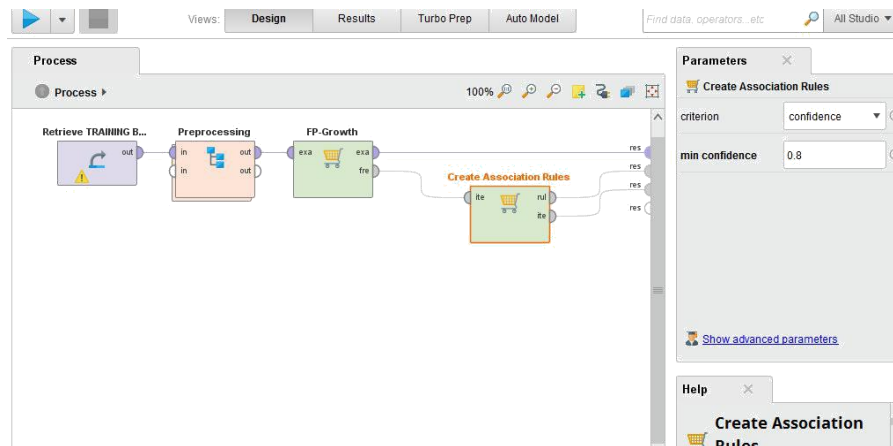
- c. Mengubah nama operator menjadi “Nominal2Binomial” dan menghubungkan operator sebelumnya dengan masukan examination pada operator ini dengan panel out.



- d. Tambahkan parameter Fp-Growth dan ubah parameter pada min support = 0,1 dan hubungkan pada port.



- e. Tambahkan parameter Create Association Rules dan menghubungkan operator-operator tersebut.



f. Dapat dilihat hasil-hasil aturan asosiasi sebagai berikut.

The screenshot shows the RapidMiner Studio Results view. The 'FrequentItemSets (FP-Growth)' table is displayed, showing 26 itemsets. The table has columns: 'Size', 'Support', 'Item 1', 'Item 2', 'Item 3', and 'Item 4'. The 'Repository' panel on the right shows the data source 'Tabel_CuacaTRAINING'.

Size	Support	Item 1	Item 2	Item 3	Item 4
1	0.500	Kelembaban_u...			
1	0.429	Berangin			
1	0.429	Suhu			
1	0.357	Cuaca = Cerah			
1	0.357	Cuaca = Hujan			
1	0.286	Cuaca = Mendu...			
2	0.214	Kelembaban_u...	Berangin		
2	0.214	Kelembaban_u...	Suhu		
2	0.214	Kelembaban_u...	Cuaca = Cerah		
2	0.143	Kelembaban_u...	Cuaca = Hujan		
2	0.143	Kelembaban_u...	Cuaca = Mendu...		
2	0.143	Berangin	Suhu		
2	0.143	Berangin	Cuaca = Cerah		
2	0.143	Berangin	Cuaca = Hujan		

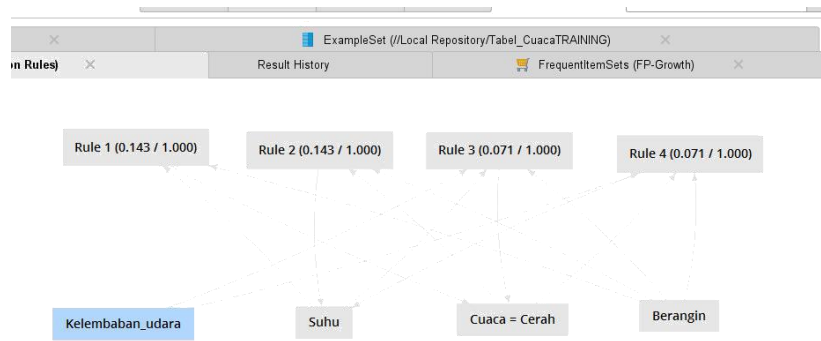
Dapat dilihat bahwa jumlah aturan asosisasi yang terbentuk adalah 23 set dan jumlah total maximal size = 4 yang terdiri dari 4 buah itemset.

- Table views

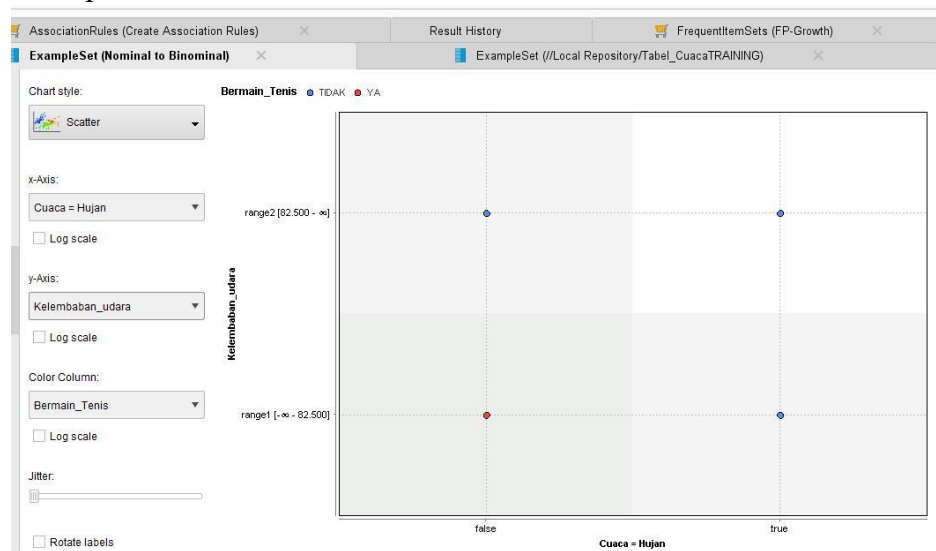
The screenshot shows the RapidMiner Studio Results view. The 'AssociationRules (Create Association Rules)' table is displayed, showing 4 association rules. The table has columns: 'No.', 'Premises', 'Conclusion', 'Support', 'Confidence', 'LaPlace', and 'Gain'.

No.	Premises	Conclusion	Support	Confidence	LaPlace	Gain
1	Berangin, Suhu	Cuaca = Cerah	0.143	1	1	-0.143
2	Berangin, Cuaca = Cerah	Suhu	0.143	1	1	-0.143
3	Kelembaban_udara, Berangin, Suhu	Cuaca = Cerah	0.071	1	1	-0.071
4	Kelembaban_udara, Berangin, Cuaca = Cerah	Suhu	0.071	1	1	-0.071

- Graph views



- ExampleSet



B. Tugas Praktikum

a. Membuat operator dengan menggunakan decision tree.

The screenshot shows the RapidMiner Studio 9.0.003 interface. The main canvas displays a process design with two operators: 'Retrieve Mahasiswa...' and 'Cross Validation'. The 'Retrieve Mahasiswa...' operator is connected to the 'Cross Validation' operator. The 'Cross Validation' operator has several output ports labeled 'mod', 'exa', 'tes', 'per', and 'per'. The 'Parameters' panel on the right shows the 'Process' operator settings, including 'logverbosity' set to 'init' and 'logfile'. The 'Help' panel on the right shows the 'Process' operator documentation.

b. Lalu klik ganda pada decision tree dan klik ganda pada operator tersebut.

The screenshot shows the RapidMiner Studio 9.0.003 interface with a more complex process design. The main canvas displays a process design with three operators: 'Decision Tree', 'Apply Model', and 'Performance'. The 'Decision Tree' operator is connected to the 'Apply Model' operator, which is then connected to the 'Performance' operator. The 'Decision Tree' operator has output ports labeled 'tra', 'mod', 'exa', and 'tes'. The 'Apply Model' operator has output ports labeled 'mod', 'tes', 'per', and 'per'. The 'Performance' operator has output ports labeled 'tes', 'per', and 'per'. The 'Parameters' panel on the right shows the 'Cross Validation' operator settings, including 'leave one out' checked, 'number of folds' set to '10', and 'sampling type' set to 'automatic'. The 'Help' panel on the right shows the 'Cross Validation' operator documentation.

<new process*> - RapidMiner Studio Free 9.0.003 @ LABSI-02-PC

File Edit Process View Connections Cloud Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators, etc. All Studio

Repository

- data (LABSI-02)
 - Cuaca_Testing (LABSI-02)
 - Cuaca_Training (LABSI-02)
 - MahasiswaTraining (LABSI-02)
 - Tabel_CuacaTESTING (LABSI-02)
 - Tabel_CuacaTRAINING (LABSI-02)
 - TESTING BARU (LABSI-02)

Operators

perform

- Performance (17)
 - Predictive (7)
 - Performance (Classification)
 - Performance (Binary)
 - Performance (Regression)
 - Performance (Cost)
 - Performance (Ranking)

No results were found.

Process

Process: Cross Validation

100%

Training: tra → Rule Induction → mod → thr

Testing: mod → tes → thr → Apply Model → lab → per → tes → per

Parameters

Cross Validation

☐ leave one out

number of folds: 10

sampling type: automatic

[Show advanced parameters](#)

[Change compatibility \(9.0.003\)](#)

Help

Cross Validation

Concurrency

Tags: Cross-Validations, Cross-validations, Folds, K-Folds, Kfolds, Validations, Estimations, Evaluations, Performances, Splitting, X-Validation, X-Prediction, Validation

Synopsis

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

Activate Wisdom of Crowds

<new process*> - RapidMiner Studio Free 9.0.003 @ LABSI-02-PC

File Edit Process View Connections Cloud Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators, etc. All Studio

Result History

ExampleSet (//Local Repository/Tabel_CuacaTRAINING)

PerformanceVector (Performance)

RuleModel (Rule Induction)

Criterion: accuracy

Table View Plot View

accuracy: 65.00% +/- 32.02% (micro average: 65.00%)

	true TERLAMBAT	true TEPAT	class precision
pred. TERLAMBAT	4	4	50.00%
pred. TEPAT	3	9	75.00%
class recall	57.14%	69.23%	

Repository

- Training Resources (conn)
 - Samples
 - Community Samples (conn)
 - DB
 - Local Repository (LABSI-02)
 - Connections (LABSI-02)
 - data (LABSI-02)
 - processes (LABSI-02)
 - Cuaca_Testing (LABSI-02)
 - Cuaca_Training (LABSI-02)
 - MahasiswaTraining (LABSI-02)
 - Tabel_CuacaTESTING (LABSI-02)
 - Tabel_CuacaTRAINING (LABSI-02)
 - TESTING BARU (LABSI-02)
 - TRAINING BARU (LABSI-02)
 - Cloud Repository (disconn)

- Rule Model

The screenshot shows the RapidMiner Studio interface with the **RuleModel** window open. The window displays the following rule description:

```
if Rerata_SKS > 18.500 then TEPAT (2 / 10)
if Gender = PRIA then TERLAMBAT (4 / 0)
if Jurusan_SMA = IPA then TEPAT (0 / 2)
if Jurusan_SMA = IPS then TERLAMBAT (1 / 0)
else TEPAT (0 / 0)
```

Annotations: correct: 17 out of 19 training examples.

The interface includes a menu bar (File, Edit, Process, View, Connections, Cloud, Settings, Extensions, Help), a toolbar, and a sidebar with a **Repository** panel showing a tree view of data sources.

The screenshot shows the RapidMiner Studio interface with the **Process** window open. The process is a **Preprocessing** subprocess, which is a sequence of two operators: **Discretize** and **Nominal to Binominal**.

The **Repository** panel on the left shows a tree view of data sources. The **Operators** panel on the left shows a search for "subpro" with results under "Utility (2)" and "Process Control (1)".

The **Parameters** panel on the right shows the **Preprocessing (Subprocess)** parameters, which are currently empty. The **Help** panel on the right shows the **Subprocess** operator documentation.

The bottom status bar indicates "No results were found." and "Activate Wisdom of Crowds".

RapidMiner Studio Free 9.0.003 @ LABSI-02-PC

File Edit Process View Connections Cloud Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators, etc. All Studio

Repository

Import Data

- data (LABSI-02)
 - Cuaca_Testing (LABSI-02)
 - Cuaca_Training (LABSI-02)
 - MahasiswaTraining (LABSI-02)
 - Tabel_CuacaTESTING (LABSI-02)
 - Tabel_CuacaTRAINING (LABSI-02)
 - TESTING BARU (LABSI-02)

Operators

subpro

- Utility (2)
 - Process Control (1)
 - Branches (1)
 - Select Subprocess
 - Subprocess

No results were found.

Process

Process

Retrieve Mahasiswa... → Preprocessing → FP-Growth → Create Association Rules

Parameters

Create Association Rules

criterion: confidence

min confidence: 0.8

Show advanced parameters

Help

Create Association Rules

RapidMiner Studio Core

Tags: Associations, Market, Basket, Upselling, Up-selling, Crossselling, Cross-selling, Itemset, Item-set, Item set, Mining, Frequent, Patterns

Synopsis

11:51 21/11/2019

- Table Views

RapidMiner Studio Free 9.0.003 @ LABSI-02-PC

File Edit Process View Connections Cloud 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)

Data

No. of Sets: 55
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	0.300	Asal_Sekolah				
1	0.300	Jurusan_SMA = IPS				
1	0.250	Asisten				
1	0.250	Rerata_SKS				
1	0.200	Jurusan_SMA = L...				
2	0.350	Gender	Jurusan_SMA = IPA			
2	0.250	Gender	Asal_Sekolah			
2	0.250	Gender	Jurusan_SMA = IPS			
2	0.200	Gender	Asisten			
2	0.250	Gender	Rerata_SKS			
2	0.150	Gender	Jurusan_SMA = LA...			
2	0.150	Jurusan_SMA = IPA	Asal_Sekolah			
2	0.200	Jurusan_SMA = IPA	Asisten			
2	0.100	Jurusan_SMA = IPA	Rerata_SKS			

Repository

Import Data

- Training Resources (conn)
 - Samples
 - Community Samples (conn)
- Local Repository (LABSI-02)
 - Connections (LABSI-02)
 - data (LABSI-02)
 - processes (LABSI-02)
 - Cuaca_Testing (LABSI-02)
 - Cuaca_Training (LABSI-02)
 - MahasiswaTraining (LABSI-02)
 - Tabel_CuacaTESTING (LABSI-02)
 - Tabel_CuacaTRAINING (LABSI-02)
 - TESTING BARU (LABSI-02)
 - TRAINING BARU (LABSI-02)
- Cloud Repository (disconn)

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<new process*> - RapidMiner Studio Free 9.0.003 @ LABSI-02-PC

File Edit Process View Connections Cloud Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators, etc. All Studio

Result History

AssociationRules (Create Association Rules)

Show rules matching: all of these conclusions:

Gender
Jurusan_SMA = IPA
Asal_Sekolah
Asisten
Rerata_SKS

Min. Criterion: confidence

Min. Criterion Value:

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	Gender	0.250	1	1	-0.250
6	Jurusan_SMA = IPA, Rerata_SKS	Gender	0.100	1	1	-0.100
7	Asal_Sekolah, Jurusan_SMA = IPS	Gender	0.100	1	1	-0.100
8	Asal_Sekolah, Rerata_SKS	Gender	0.150	1	1	-0.150
9	Asal_Sekolah, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
10	Jurusan_SMA = IPS, Rerata_SKS	Gender	0.100	1	1	-0.100
11	Asisten, Rerata_SKS	Gender	0.150	1	1	-0.150
12	Asisten, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
13	Rerata_SKS, Jurusan_SMA = LAIN	Gender	0.050	1	1	-0.050
14	Jurusan_SMA = IPA, Rerata_SKS	Asisten	0.100	1	1	-0.100
15	Asal_Sekolah, Jurusan_SMA = LAIN	Asisten	0.050	1	1	-0.050
16	Asisten, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1	1	-0.050
17	Asal_Sekolah, Jurusan_SMA = LAIN	Rerata_SKS	0.050	1	1	-0.050
18	Rerata_SKS, Jurusan_SMA = LAIN	Asal_Sekolah	0.050	1	1	-0.050

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- Graph View

<new process*> - RapidMiner Studio Free 9.0.003 @ LABSI-02-PC

File Edit Process View Connections Cloud Settings Extensions Help

Views: Design Results Turbo Prep Auto Model

Find data, operators, etc. All Studio

Result History

AssociationRules (Create Association Rules)

Zoom

ISOM

Node Labels

Edge Labels

Filter

Show rules matching: all of these conclusions:

Gender
Jurusan_SMA = IPA
Asal_Sekolah
Asisten
Rerata_SKS

Min. Criterion: confidence

Min. Criterion Value:

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- Example Set

