

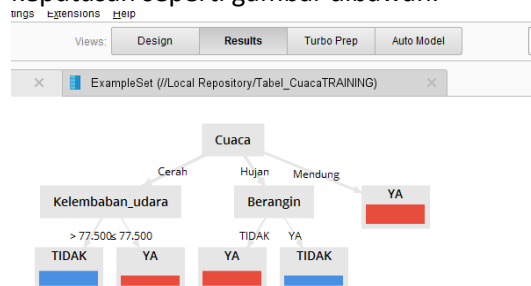
Nama : Rossanti Kusumadewi

NIM : L200170092

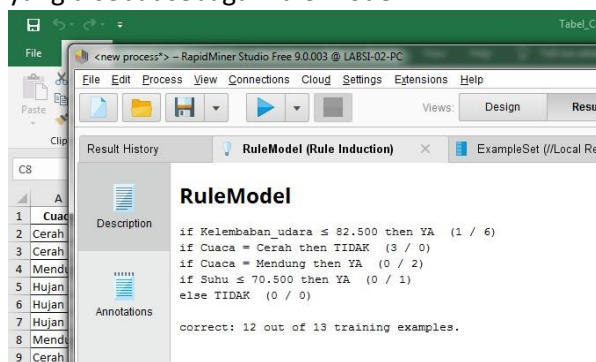
A. Kegiatan praktikum

1. Induksi Aturan Data Cuaca

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

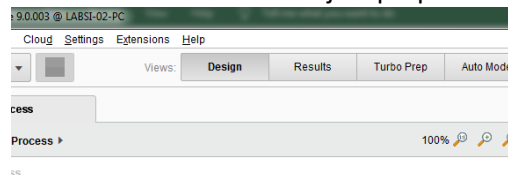


- b. Mengubah parameter sehingga menghasilkan sebuah induksi aturan dari data training yang disebut sebagai Rule Model

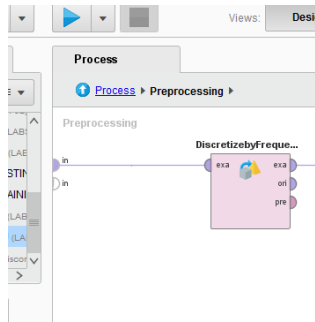


2. Aturan Asosiasi Data Cuaca

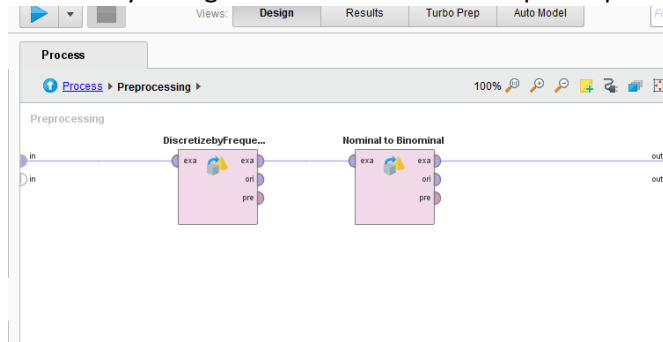
- a. Menggunakan DataCuaca_Training dan menggunakan parameter subprocess ke dalam area. Lalu ubah nama menjadi preprocessing.



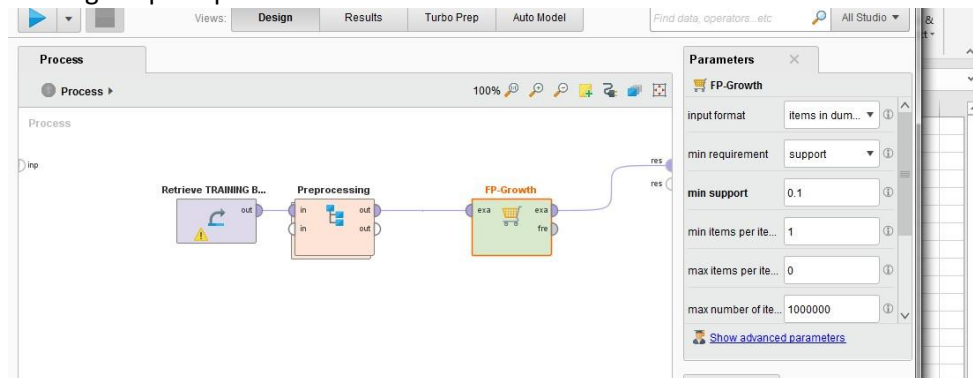
- b. Klik ganda pada operator preprocessing sehingga masuk pada nested chain. Lalu rename menjadi “DiscretizebyFrequency” dan biarkan nilai parameter number of bins = 2.



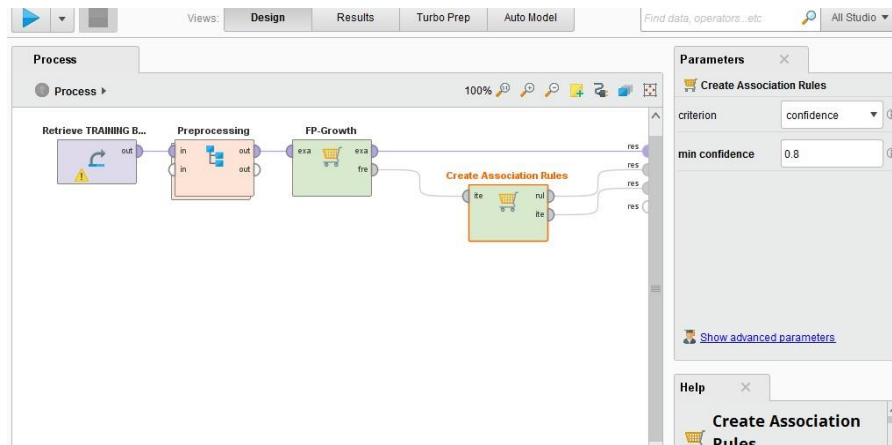
- c. Mengubah nama operator menjadi “Nominal2Binomial” dan menghubungkan operator sebelumnya dengan masukan examination pada operator ini dengan panel out.



- 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 'FrequentItemSets (FP-Growth)' table in the Results view. The table has the following columns: 'No. of Sets', 'Total Max. Size', 'Min. Size', 'Max. Size', 'Contains Item', 'Update View', 'Size', 'Support', 'Item 1', 'Item 2', 'Item 3', and 'Item 4'. The table contains 26 rows of data, representing different itemsets. The 'Support' column shows the frequency of the itemset, and the 'Size' column shows the number of items in the set. The 'Item 1' column contains the first item, 'Item 2' contains the second item, and 'Item 3' and 'Item 4' contain the remaining items in the set.

No. of Sets	Total Max. Size	Min. Size	Max. Size	Contains Item	Update View	Size	Support	Item 1	Item 2	Item 3	Item 4
1	0.500	1	4			1	0.500	Kelembaban_u...			
1	0.429	1	4			1	0.429	Berangin			
1	0.429	1	4			1	0.429	Suhu			
1	0.357	1	4			1	0.357	Cuaca = Cerah			
1	0.357	1	4			1	0.357	Cuaca = Hujan			
1	0.286	1	4			1	0.286	Cuaca = Mendu...			
2	0.214	1	4			2	0.214	Kelembaban_u...	Berangin		
2	0.214	1	4			2	0.214	Kelembaban_u...	Suhu		
2	0.214	1	4			2	0.214	Kelembaban_u...	Cuaca = Cerah		
2	0.143	1	4			2	0.143	Kelembaban_u...	Cuaca = Hujan		
2	0.143	1	4			2	0.143	Kelembaban_u...	Cuaca = Mendu...		
2	0.143	1	4			2	0.143	Berangin	Suhu		
2	0.143	1	4			2	0.143	Berangin	Cuaca = Cerah		
2	0.143	1	4			2	0.143	Berangin	Cuaca = Hujan		

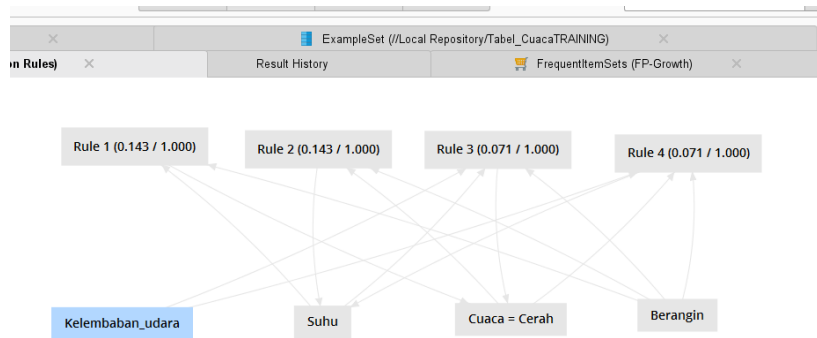
Dapat dilihat bahwa jumlah aturan asosiasi yang terbentuk adalah 23 set dan jumlah total maximal size = 4 yang terdiri dari 4 buah itemset.

- Table views

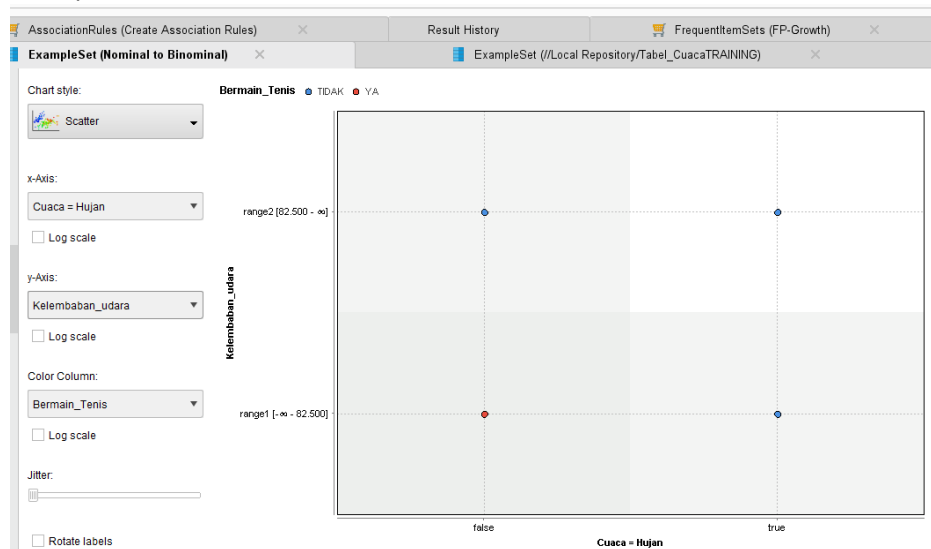
The screenshot shows the 'AssociationRules (Create Association Rules)' table in the Results view. The table has the following columns: 'No.', 'Premises', 'Conclusion', 'Support', 'Confidence', 'LaPlace', and 'Gain'. The table contains 4 rows of data, representing different association rules.

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' parameters, including 'logverbosity' set to 'init' and 'logfile'. The 'Help' panel on the right shows the 'Process' help page. The 'Repository' panel on the left shows a list of data sources, including 'Cuaca_Testing', 'Cuaca_Training', 'MahasiswaTraining', 'Tabel_CuacaTESTING', 'Tabel_CuacaTRAINING', and 'TESTING BARU'. The 'Operators' panel on the left shows a list of operators, including 'Performance (17)', 'Predictive (7)', and 'Performance (Cla)'. The 'Design' view is selected, and the 'Process' tab is active.

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

The screenshot shows the RapidMiner Studio 9.0.003 interface after clicking twice on the 'Decision Tree' operator and twice on the 'Cross Validation' operator. 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 'Cross Validation' operator is also connected to the 'Performance' operator. The 'Parameters' panel on the right shows the 'Cross Validation' parameters, including 'leave one out' (unchecked), 'number of folds' set to '10', and 'sampling type' set to 'automatic'. The 'Help' panel on the right shows the 'Cross Validation' help page. The 'Repository' panel on the left shows a list of data sources, including 'Cuaca_Testing', 'Cuaca_Training', 'MahasiswaTraining', 'Tabel_CuacaTESTING', 'Tabel_CuacaTRAINING', and 'TESTING BARU'. The 'Operators' panel on the left shows a list of operators, including 'Performance (17)', 'Predictive (7)', and 'Performance (Cla)'. The 'Design' view is selected, and the 'Process' tab is active.

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)
 - 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)

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, tra, exa) → thr

Testing: thr → Apply Model (mod, thr, lab, uni, mod) → Performance (lab, per, exa, 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, K-folds, 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

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/MahasiswaTraining)

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 (connected)
 - Samples
 - Community Samples (connected)
 - 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 (disconnected)

- Rule Model

The screenshot shows the RapidMiner Studio interface with the **RuleModel** window open. The window displays the following rules and their performance:

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

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 workflow diagram shows the following steps:

- Preprocessing** (Subprocess)
- Discretize** (Operator)
- Normal to Binominal** (Operator)

The **Parameters** panel on the right shows the **Preprocessing (Subprocess)** operator with no parameters to display. The **Help** panel on the right shows the **Subprocess** operator description.

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.

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

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

Activate Wisdom of Crowds

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)

11:52 21/11/2019

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

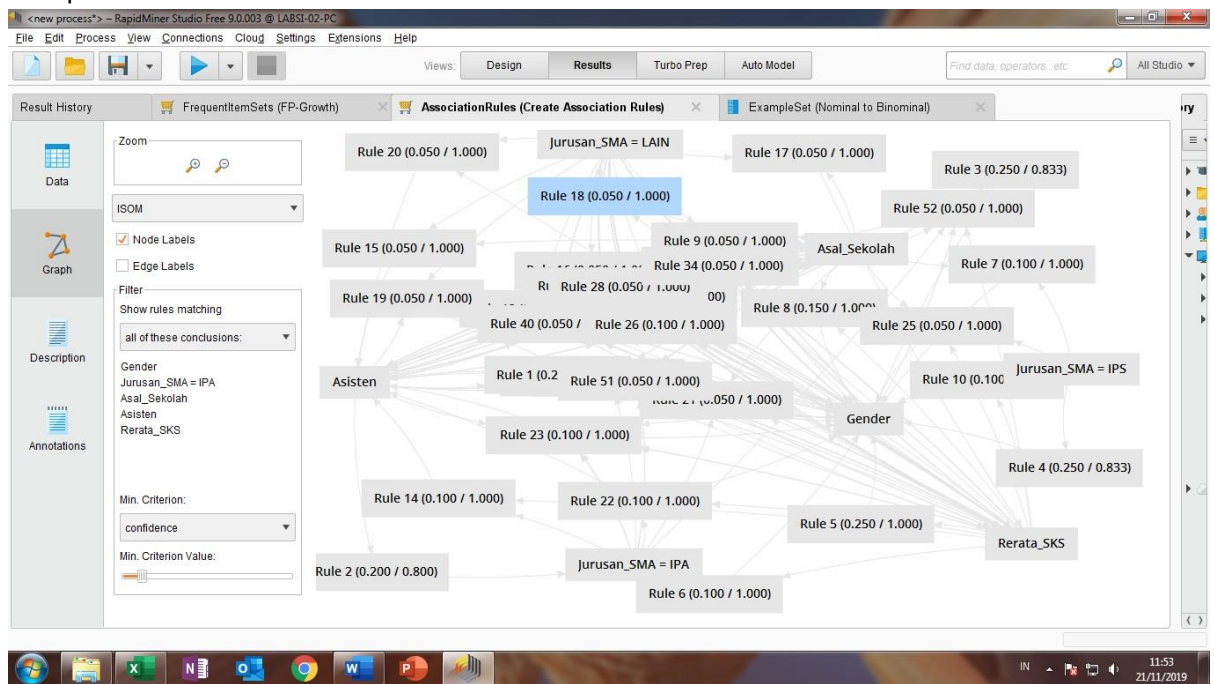
Show rules matching: all of these conclusions: Gender, Jurusan_SMA = IPA, Asal_Sekolah, Asisten, Rerata_SKS

Min. Criterion: confidence

Min. Criterion Value: 0.050

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

- Graph View



- Example Set

