MODULE 10 REPORT

CLUSTERING: K-MEANS

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Informatics Study Program

Faculty of Communication and Informatics

Muhammadiyah University of Surakarta

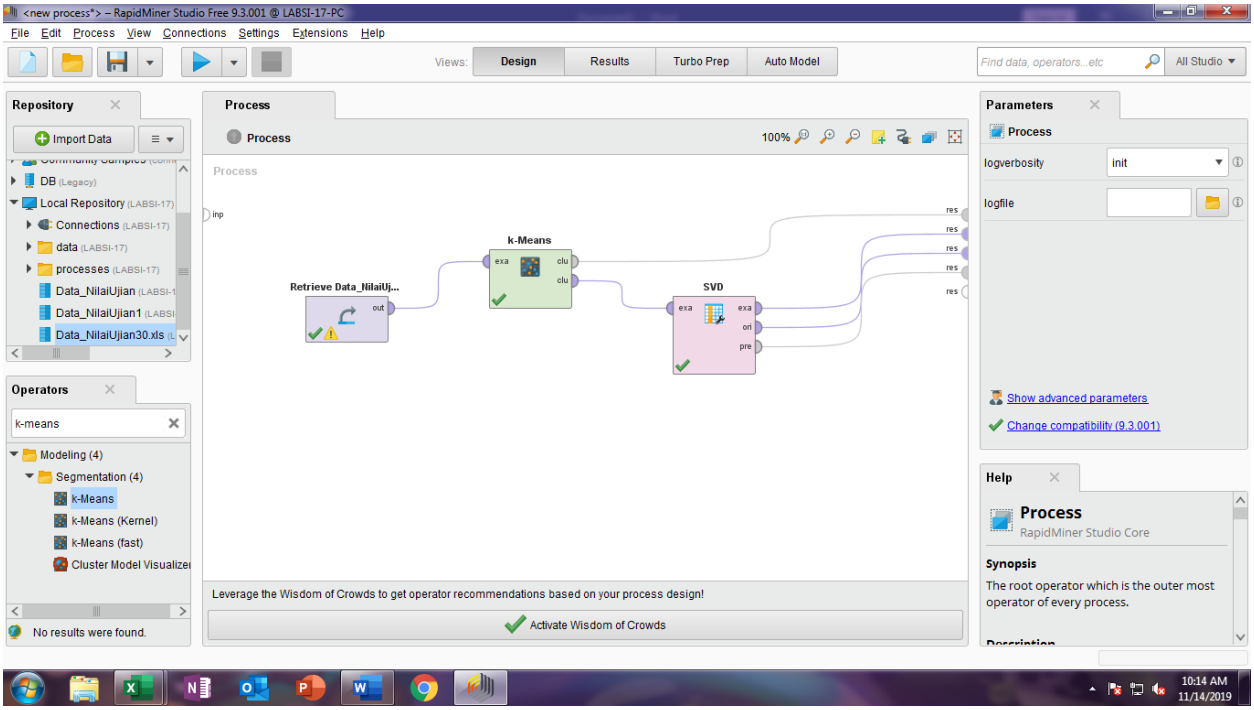
TASK

1. The data table of 30 Students:

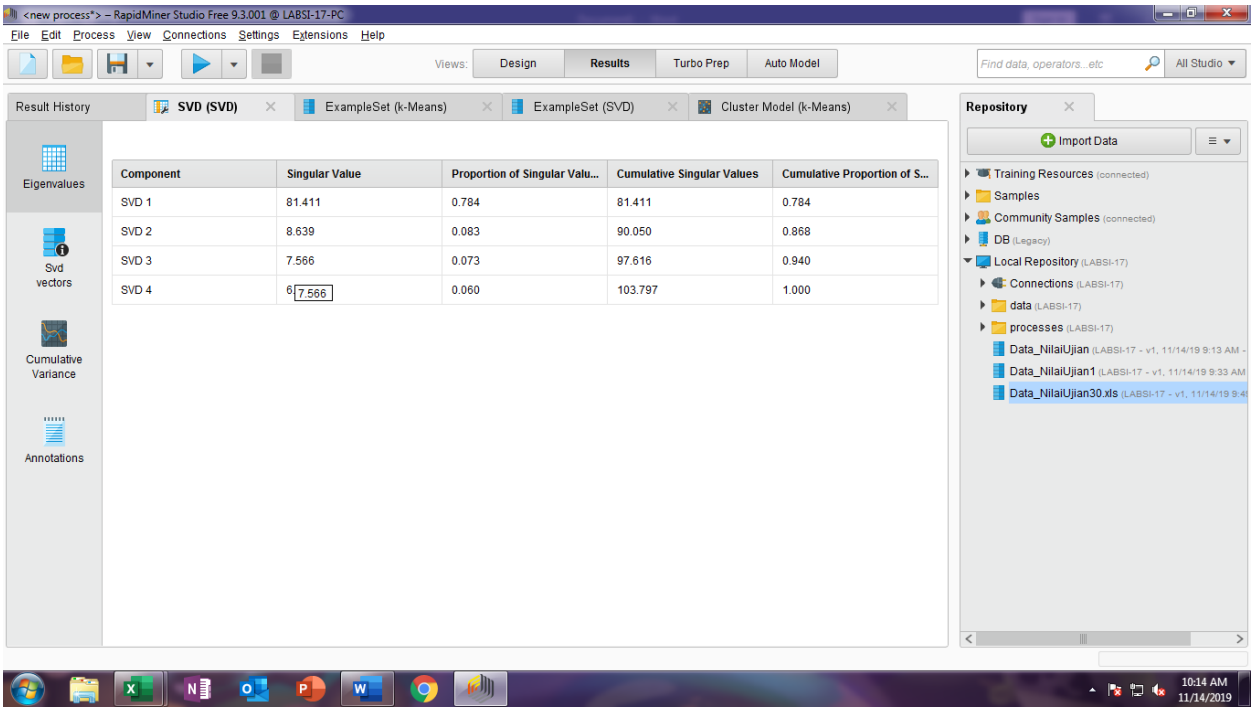
NO_SISWA	NAMA	B.IND	B.ING	MTK	IPA
S-101	JOKO	9.324451	5.161351	5.56401	5.609937
S-102	AGUS	5.760448	6.395767	6.427682	9.552224
S-103	SUSI	6.437365	7.019298	5.332729	8.190444
S-104	DYAH	9.839482	5.133486	7.665161	7.230321
S-105	WATI	6.885141	6.891555	6.535338	5.146498
S-106	IKA	6.866307	5.056389	6.45606	7.4841
S-107	EKO	6.746921	7.774128	6.605459	6.936593
S-108	YANTO	7.935745	6.029242	9.081791	9.402237
S-109	WAWAN	5.871374	8.968728	5.771849	8.341672
S-110	MAHMUD	9.615788	5.732688	8.215744	8.417311
S-111	BUDI	9.519713	8.443857	7.411024	6.352713
S-112	SANTI	7.241333	7.145853	9.904927	5.212415
S-113	DIAN	8.394993	8.141596	9.480511	8.738829
S-114	DANI	8.5189	8.196559	6.200182	8.570496
S-115	AHMAD	7.060539	7.496252	9.537169	7.432407
S-116	BAYU	5.297892	6.271289	7.400429	5.005714
S-117	RISA	9.777234	6.754208	6.323619	8.23494
S-118	RANI	7.159563	6.662212	9.598695	7.829678
S-119	YANI	9.05955	9.825939	8.849706	6.009163
S-120	RATIH	7.507991	8.307681	8.181265	5.756797
S-121	INDAH	5.995169	5.665386	6.970344	7.125284
S-122	JONO	9.01527	5.062885	7.766055	6.978452
S-123	SARAH	5.67864	6.215134	6.201669	9.165373
S-124	RAMA	5.598077	9.295121	7.275308	6.704162
S-125	BAMBANG	7.821458	7.218863	9.27094	9.744658
S-126	HADI	8.970494	6.335471	5.962021	9.64545
S-127	NANA	8.322185	8.392497	9.773366	6.526251
S-128	FEBRI	7.338738	5.244816	8.382444	6.21947
S-129	DENI	6.023706	5.948631	6.088519	9.275769
S-130	TONI	8.06938	8.557059	8.176388	7.097492

2. Import table Tabel_DataNilaiUjian.xls to RapidMiner
    a. The cell range modify to B1:F31
    b. At table NAMA, change role to id
    c. Save with filename Data_NilaiUjian30.xls
    d. Finish
    e. Then input the data above to the process area

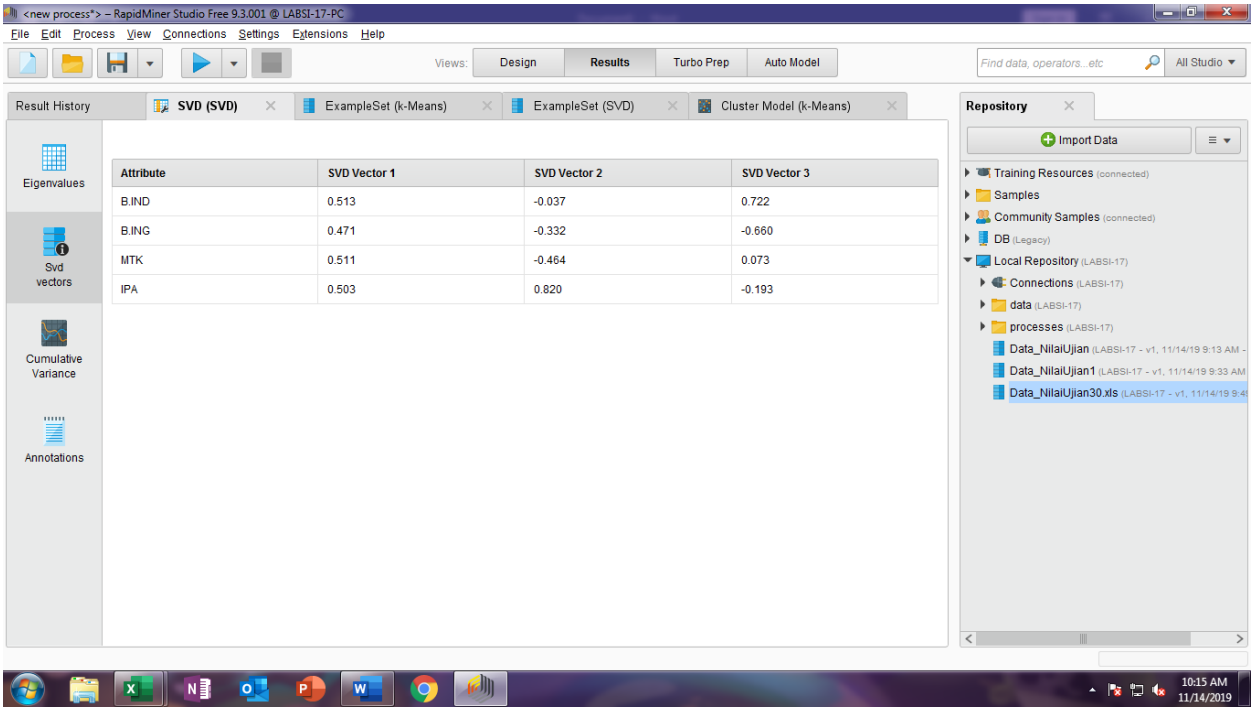
f. Add the k-Means/Clustering and SVD operator to the process area
g. Connect the 2nd output clustered set (clus) in k-Means to the exa entry operator in SVD and 3 port exa, ori and pre output with res panel connector
h. Run



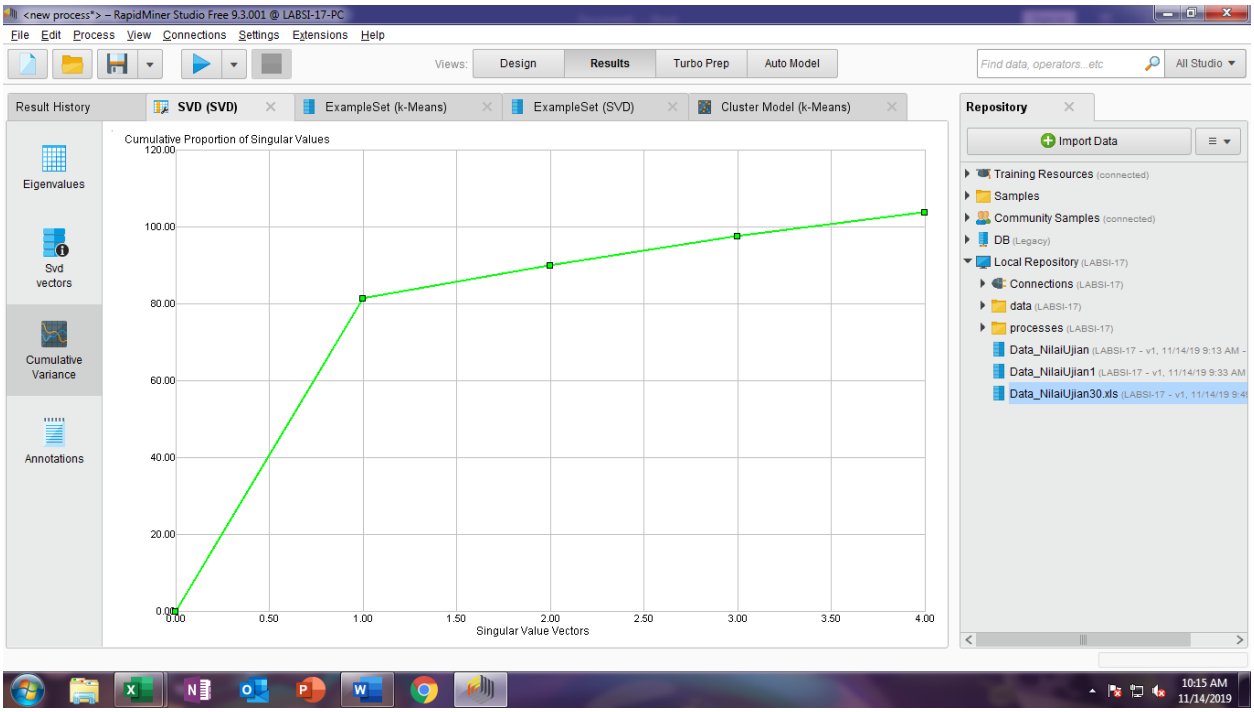
3. Result
   a. Eigenvalues



b. SVD Vector

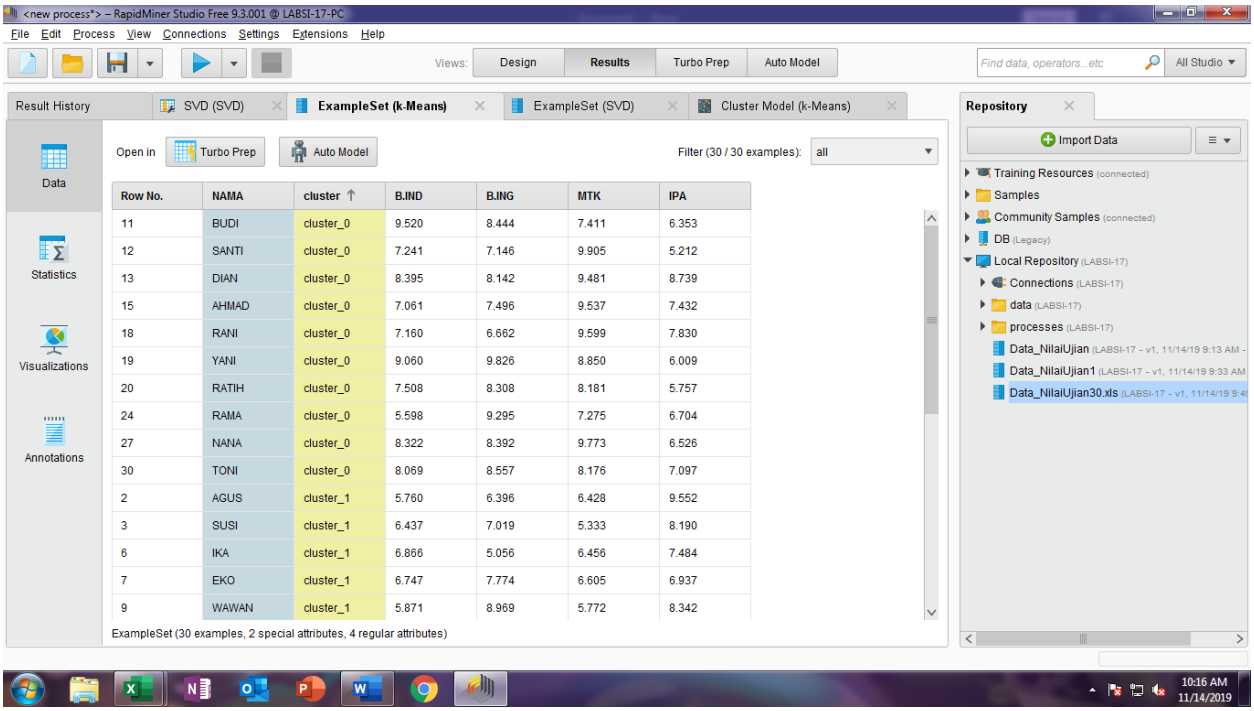


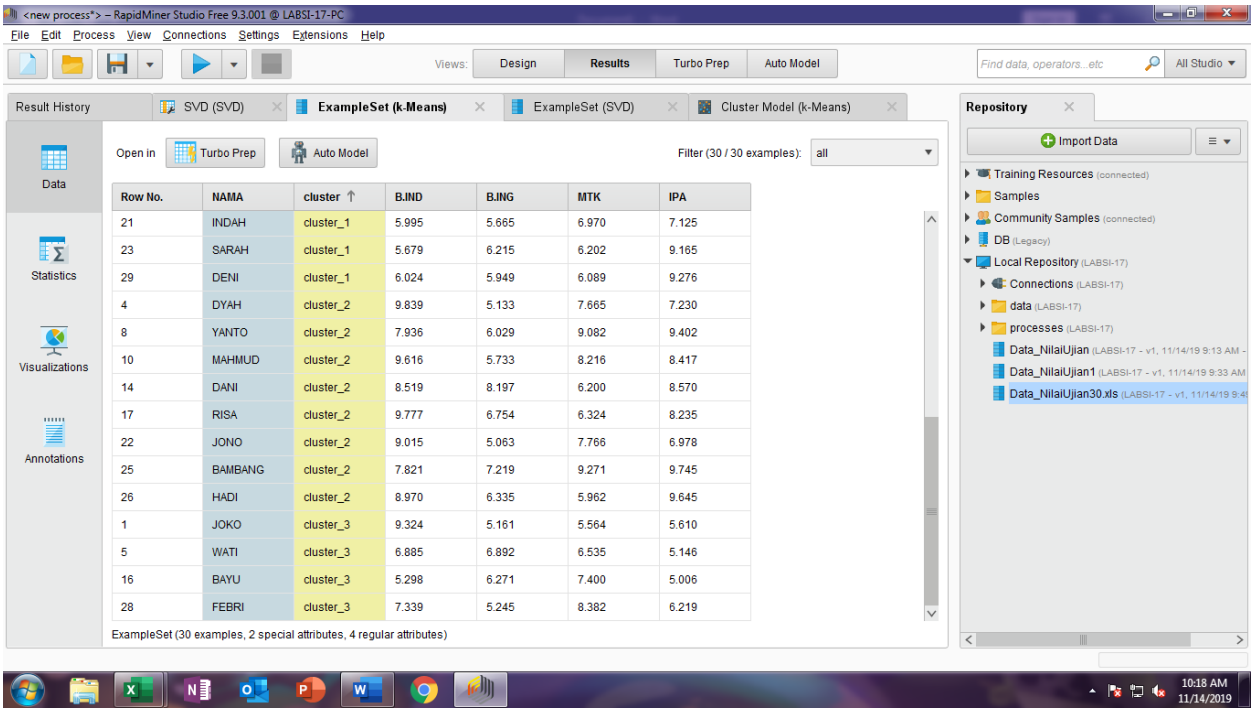
c. Cumulative variance



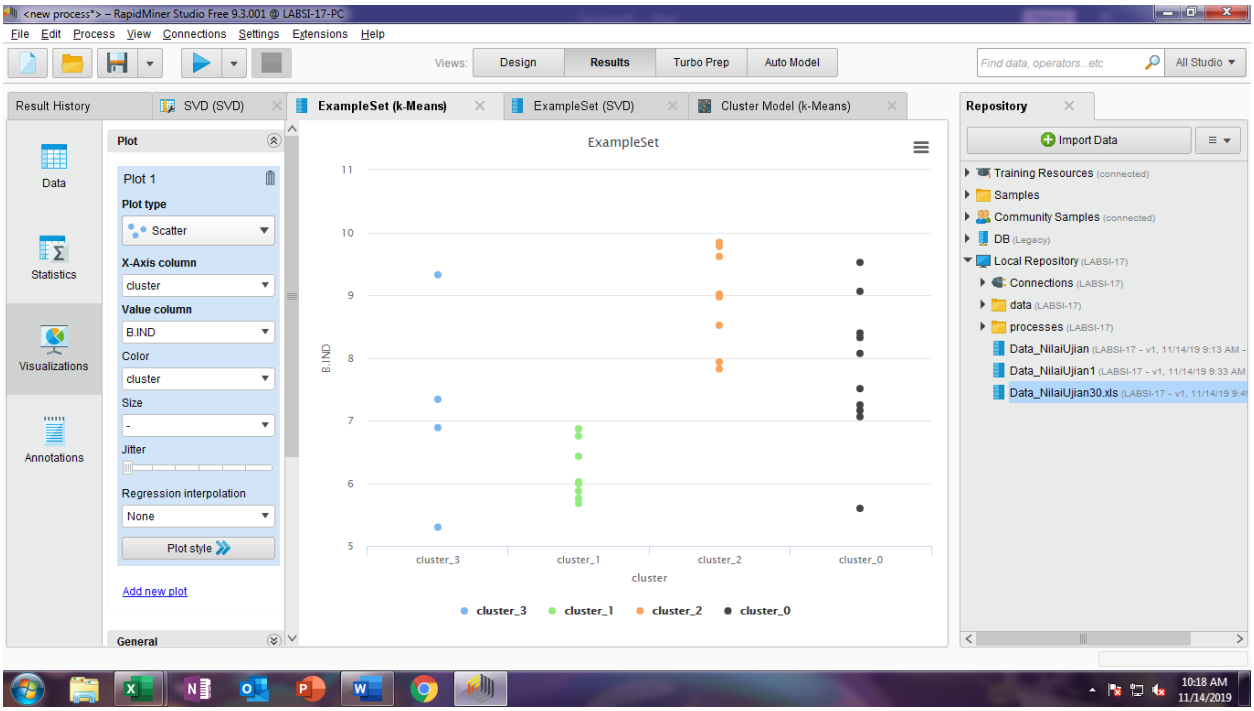
d. Example set (K-Means)

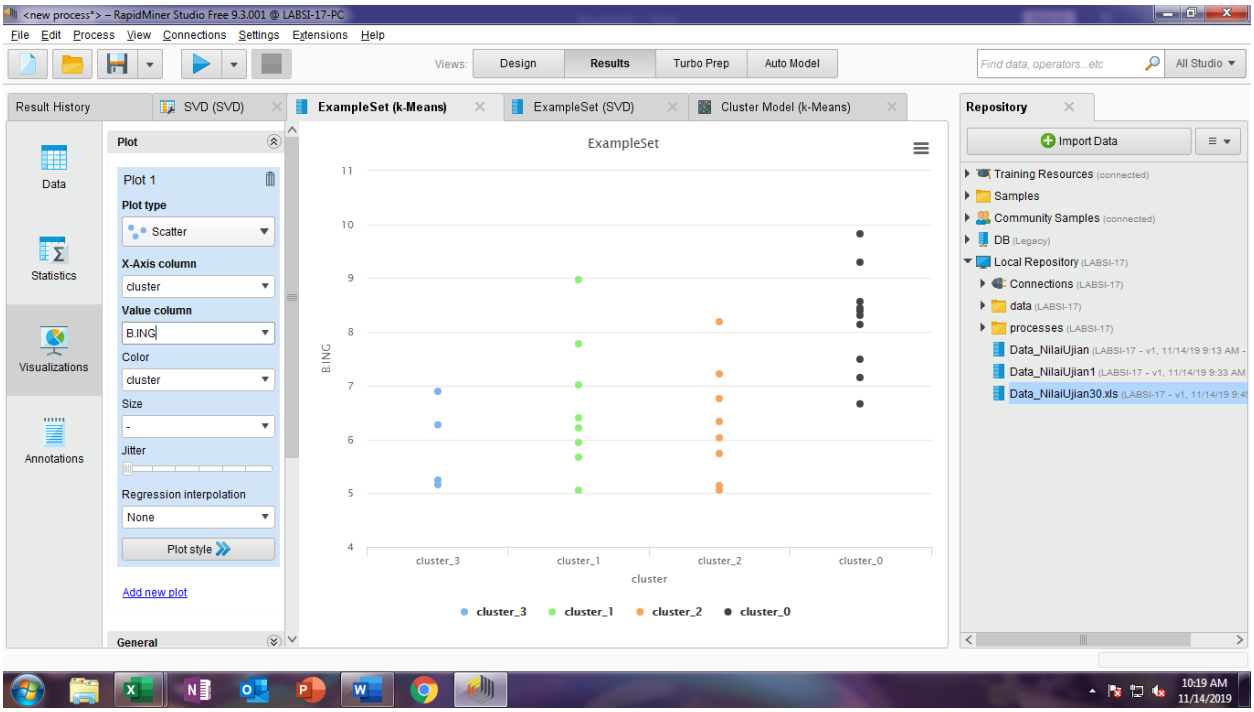
i. Data





ii. Visualization


<new process*> – RapidMiner Studio Free 9.3.001 @ LABSI-17-PC
File Edit Process View Connections Settings Extensions Help
Views: Design Results Turbo Prep Auto Model
Find data, operators...etc All Studio
Result History
SVD (SVD)
ExampleSet (k-Means)
ExampleSet (SVD)
Cluster Model (k-Means)
Data
Statistics
Visualizations
Annotations
Plot
Plot 1
Plot type
Scatter
X-Axis column
cluster
Value column
B.IND
Color
cluster
Size
-
Jitter
Regression interpolation
None
Plot style
Add new plot
General
ExampleSet
B.IND
cluster
cluster_3 cluster_1 cluster_2 cluster_0
Repository
Import Data
Training Resources (connected)
Samples
Community Samples (connected)
DB (Legacy)
Local Repository (LABSI-17)
Connections (LABSI-17)
data (LABSI-17)
processes (LABSI-17)
Data_NilaiUjian (LABSI-17 - v1, 11/14/19 9:13 AM -
Data_NilaiUjian1 (LABSI-17 - v1, 11/14/19 9:33 AM
Data_NilaiUjian30.xls (LABSI-17 - v1, 11/14/19 9:4
10:18 AM
11/14/2019


<new process*> – RapidMiner Studio Free 9.3.001 @ LABSI-17-PC
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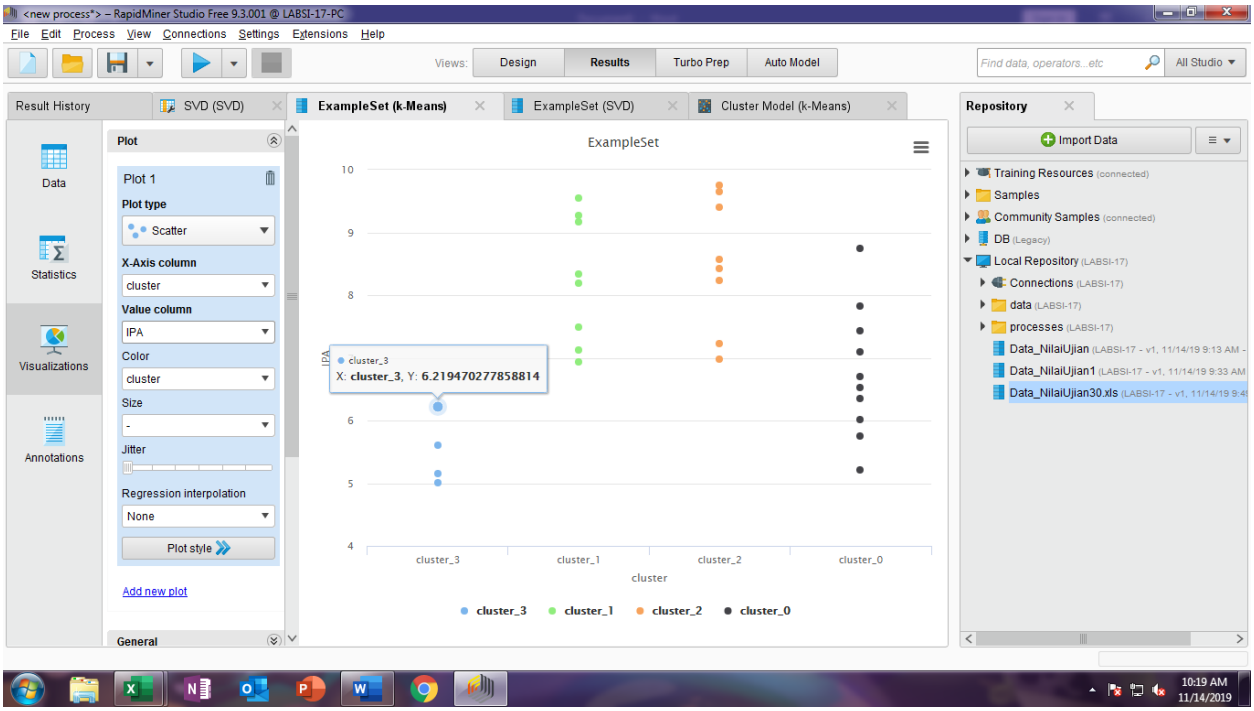
10:19 AM
11/14/2019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Plot 1
Plot type
Scatter
X-Axis column
cluster
Value column
IPA
Color
cluster
Size
-
Jitter
Regression interpolation
None
Plot style
Add new plot
General
ExampleSet
IPA
cluster
cluster_3
cluster_1
cluster_2
cluster_0
X: cluster_3, Y: 6.219470277858814
Repository
Import Data
Training Resources (connected)
Samples
Community Samples (connected)
DB (Legacy)
Local Repository (LABSI-17)
Connections (LABSI-17)
data (LABSI-17)
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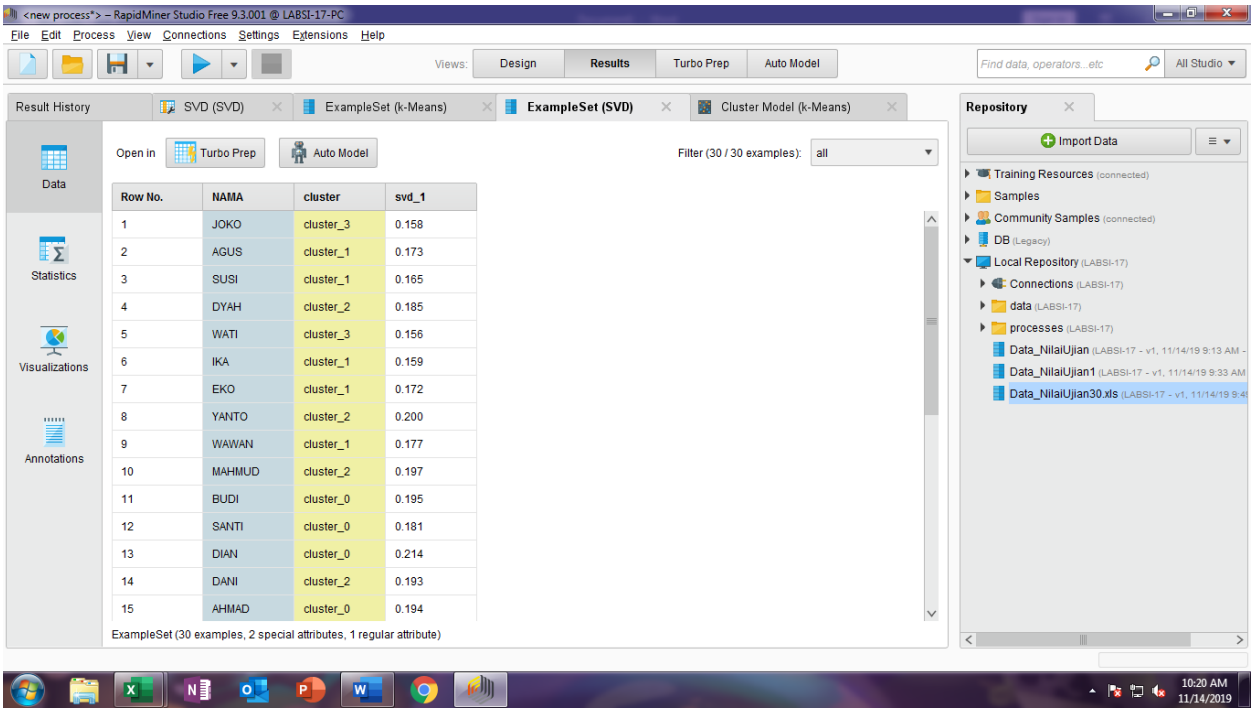
10:19 AM
11/14/2019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SVD (SVD)
ExampleSet (k-Means)
ExampleSet (SVD)
Cluster Model (k-Means)
Data
Statistics
Visualizations
Annotations
Open in Turbo Prep Auto Model
Filter (30 / 30 examples): all
Row No. NAMA cluster svd_1
1 JOKO cluster_3 0.158
2 AGUS cluster_1 0.173
3 SUSI cluster_1 0.165
4 DYAH cluster_2 0.185
5 WATI cluster_3 0.156
6 IKA cluster_1 0.159
7 EKO cluster_1 0.172
8 YANTO cluster_2 0.200
9 WAWAN cluster_1 0.177
10 MAHMUD cluster_2 0.197
11 BUDI cluster_0 0.195
12 SANTI cluster_0 0.181
13 DIAN cluster_0 0.214
14 DANI cluster_2 0.193
15 AHMAD cluster_0 0.194
ExampleSet (30 examples, 2 special attributes, 1 regular attribute)
Repository
Import Data
Training Resources (connected)
Samples
Community Samples (connected)
DB (Legacy)
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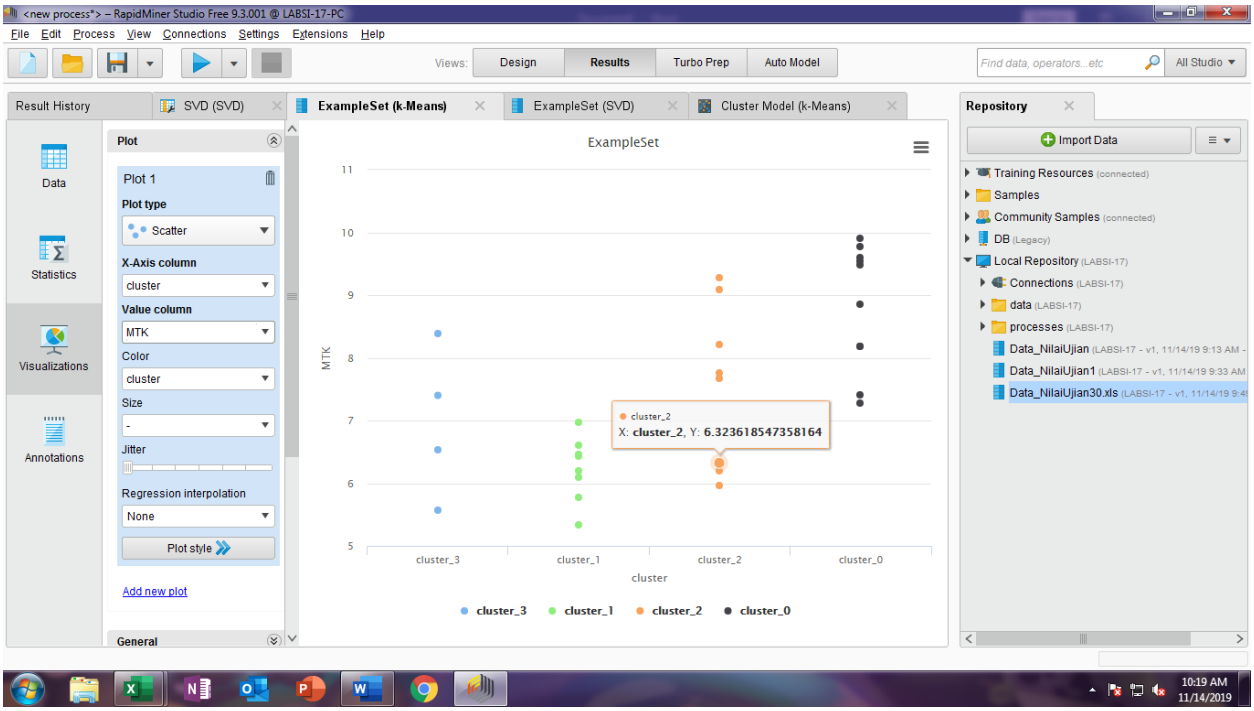
Data_NilaiUjian1 (LABSI-17 - v1, 11/14/19 9:33 AM
Data_NilaiUjian30.xls (LABSI-17 - v1, 11/14/19 9:4
10:20 AM
11/14/2019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ExampleSet (SVD)
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Annotations
Plot
Plot 1
Plot type
Scatter
X-Axis column
cluster
Value column
MTK
Color
cluster
Size
-
Jitter
Regression interpolation
None
Plot style
Add new plot
General
ExampleSet
MTK
cluster_2
X: cluster_2, Y: 6.323618547358164
cluster_3
cluster_1
cluster_2
cluster_0
cluster
Repository
Import Data
Training Resources (connected)
Samples
Community Samples (connected)
DB (Legacy)
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Data_NilaiUjian30.xls (LABSI-17 - v1, 11/14/19 9:4
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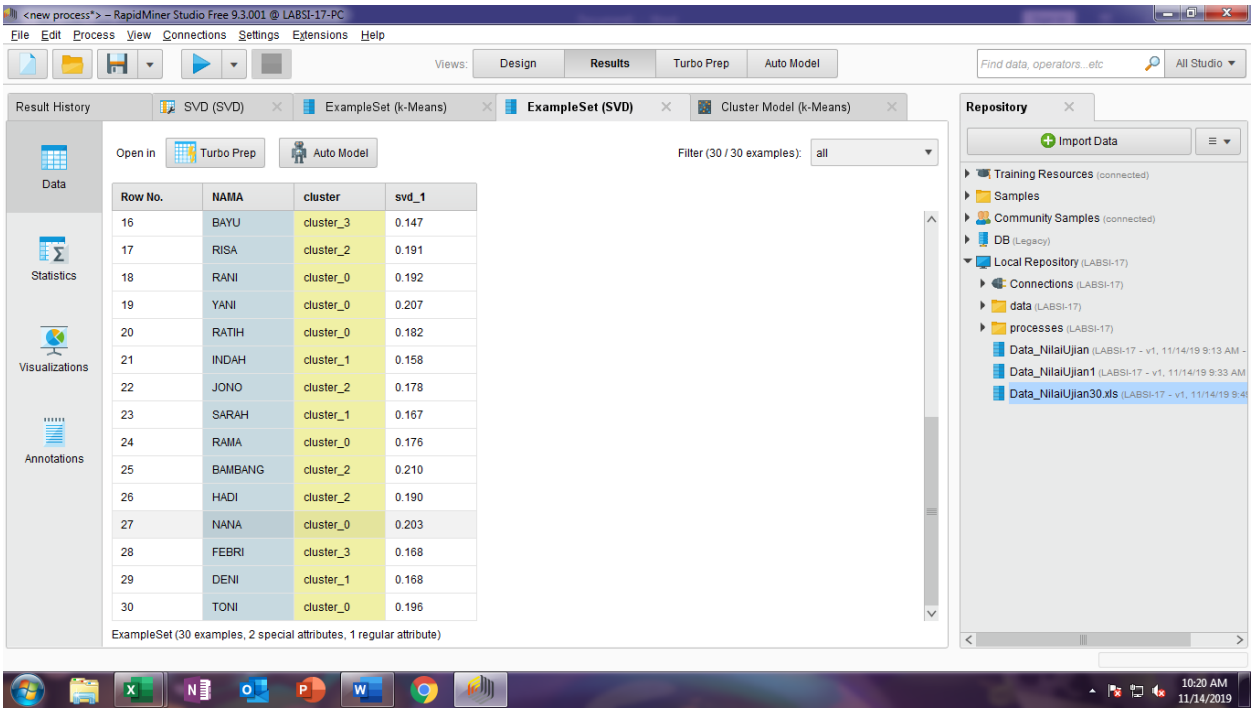
11/14/2019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ExampleSet (k-Means)
ExampleSet (SVD)
Cluster Model (k-Means)
Data
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Annotations
Open in Turbo Prep Auto Model
Filter (30 / 30 examples): all
Row No. NAMA cluster svd_1
16 BAYU cluster_3 0.147
17 RISA cluster_2 0.191
18 RANI cluster_0 0.192
19 YANI cluster_0 0.207
20 RATIH cluster_0 0.182
21 INDAH cluster_1 0.158
22 JONO cluster_2 0.178
23 SARAH cluster_1 0.167
24 RAMA cluster_0 0.176
25 BAMBANG cluster_2 0.210
26 HADI cluster_2 0.190
27 NANA cluster_0 0.203
28 FEBRI cluster_3 0.168
29 DENI cluster_1 0.168
30 TONI cluster_0 0.196
ExampleSet (30 examples, 2 special attributes, 1 regular attribute)
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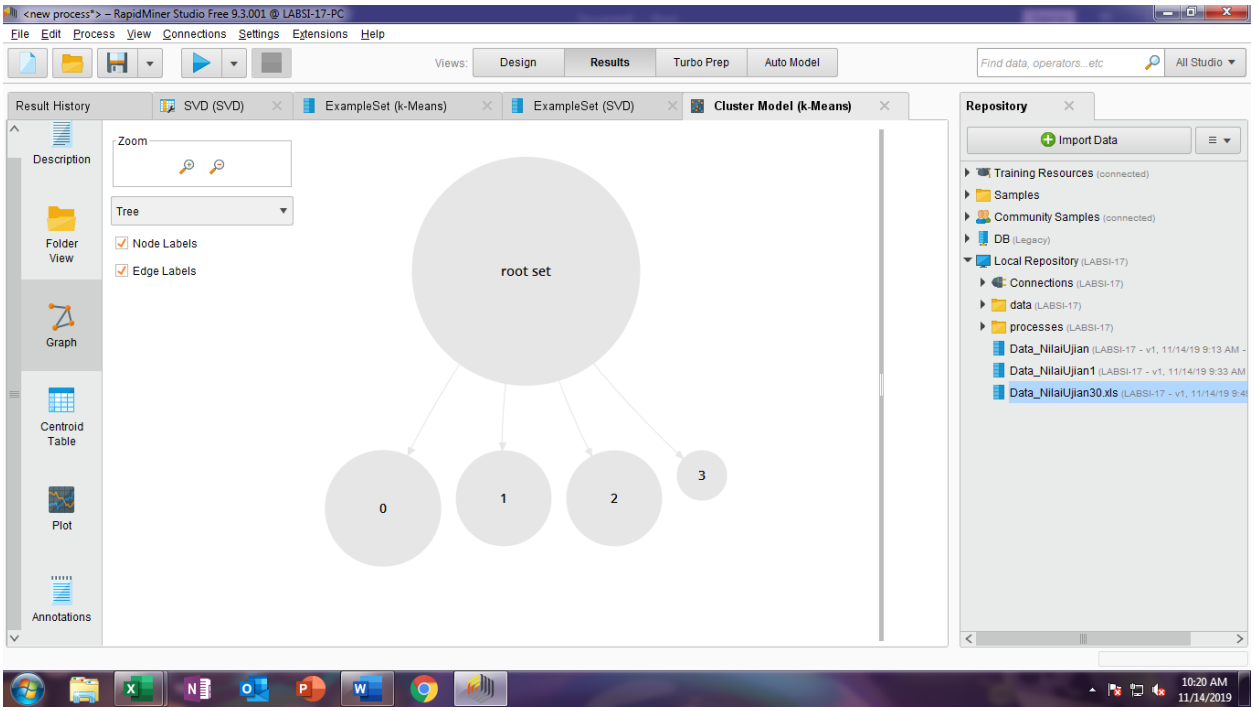
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Find data, operators...etc
All Studio
Result History
SVD (SVD)
ExampleSet (k-Means)
ExampleSet (SVD)
Cluster Model (k-Means)
Description
Folder View
Graph
Centroid Table
Plot
Annotations
Zoom
Tree
Node Labels
Edge Labels
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