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Kelas : D
Modul : 10

TUGAS

1. Tabel Data Nilai Ujian

	A	B	C	D	E	F	G
1	NO_SISWA	NAMA	B.IND	B.ING	MTK	IPA	
2	S_101	JOKO	9,95	5,40	7,41	8,32	
3	S_102	AGUS	9,37	5,91	8,56	6,43	
4	S_103	SUSI	8,77	5,14	5,38	5,94	
5	S_104	DYAH	7,62	6,02	5,38	9,02	
6	S_105	WATI	9,61	6,45	7,94	8,39	
7	S_106	IKA	7,72	7,22	6,24	8,89	
8	S_107	EKO	5,07	8,25	5,73	7,81	
9	S_108	YANTO	7,42	9,97	8,87	9,70	
10	S_109	WAWAN	5,50	7,04	8,91	8,33	
11	S_110	MAHMUD	8,82	9,13	8,51	9,64	
12	S_111	BUDI	9,17	8,05	5,74	5,55	
13	S_112	SANTI	6,77	5,11	5,52	6,80	
14	S_113	DIAN	7,85	9,90	9,37	5,10	
15	S_114	DANI	8,60	6,21	7,38	7,83	
16	S_115	AHMAD	6,31	8,64	9,23	6,14	
17	S_116	BAYU	8,86	6,67	8,81	5,35	
18	S_117	RISA	6,18	6,86	6,42	7,78	
19	S_118	RANI	9,04	8,00	9,82	7,16	
20	S_119	YANI	5,20	5,24	5,59	8,50	
21	S_120	RATIH	7,96	5,64	8,72	6,15	
22	S_121	INDAH	7,45	6,29	8,15	9,06	
23	S_122	JONO	6,76	8,89	6,39	8,09	
24	S_123	SARAH	8,51	7,64	6,95	6,06	
25	S_124	RAMA	6,42	6,07	7,63	5,89	
26	S_125	BAMBANG	9,06	7,71	8,52	7,41	
27	S_126	HADI	5,41	5,65	6,66	5,48	
28	S_127	NANA	5,81	8,43	7,01	6,43	
29	S_128	FEBRI	7,56	7,84	8,25	7,67	
30	S_129	DENI	9,51	9,82	7,64	6,70	

2. Process di RapidMiner

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

- Repository:** Shows a local repository with a folder named 'data' containing a file 'Tugas_NilaiUjian'.
- Process:** A workflow diagram showing the sequence of operations: 'Retrieve Tugas_NilaiUjian' (input) → 'Clustering' (operator) → 'SVD' (operator). The 'SVD' operator has multiple output ports labeled 'res', 'exa', 'ort', and 'pre'.
- Parameters:** A panel on the right showing the configuration for the 'SVD (Singular Value Decomposition)' operator. The 'dimensionality red...' is set to 'fixed number' and 'dimensions' is set to '1'.
- Help:** A panel on the right providing information about 'Singular Value Decomposition', including its purpose and related concepts like PCA, Components, Orthogonal, Eigenvectors, Decompositions, Reduction, Multicollinearity, SVD, and Dimensionality Reduction.

3. Hasil Proses Clustering dengan Algoritma K-Means

a) SVD (Singular Value Decomposition)

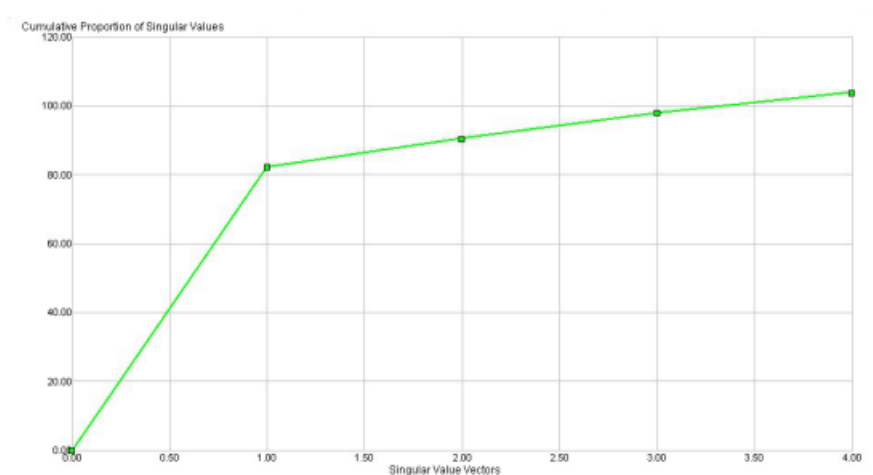
i. Nilai Eigenvalue

Component	Singular Value	Proportion of Singular Values	Cumulative Singular Values	Cumulative Proportion of Singular Values
SVD 1	82.312	0.792	82.312	0.792
SVD 2	8.172	0.079	90.484	0.871
SVD 3	7.462	0.072	97.947	0.943
SVD 4	5.968	0.057	103.914	1.000

ii. Nilai SVD Vectors

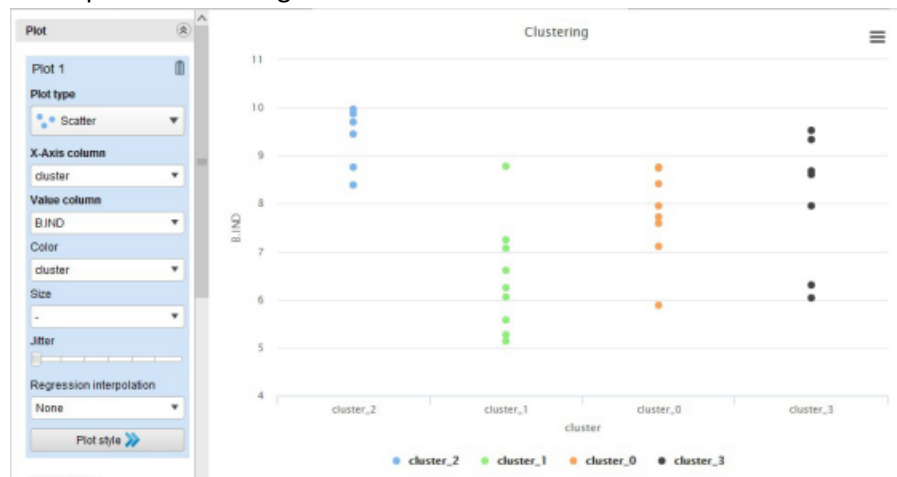
Attribute	SVD Vector 1	SVD Vector 2	SVD Vector 3
B.IND	0.520	-0.111	0.489
B.ING	0.470	-0.770	-0.075
MTK	0.524	0.581	0.325
IPA	0.483	0.238	-0.806

iii. Nilai Cumulative Variance

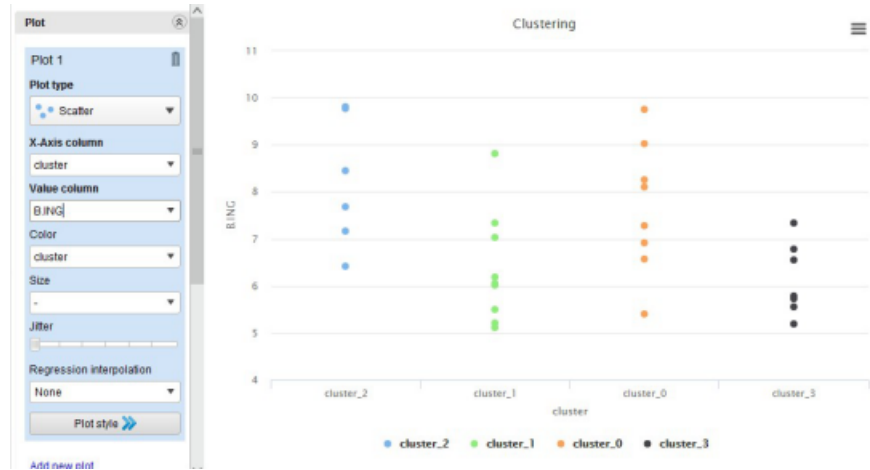


b) ExampleSet (K-Means)

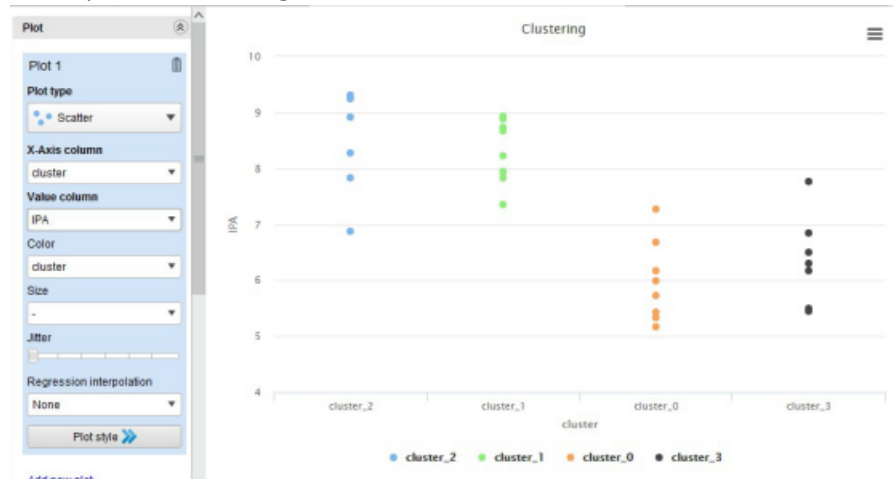
I. Kelompok Siswa Bidang B.Indonesia



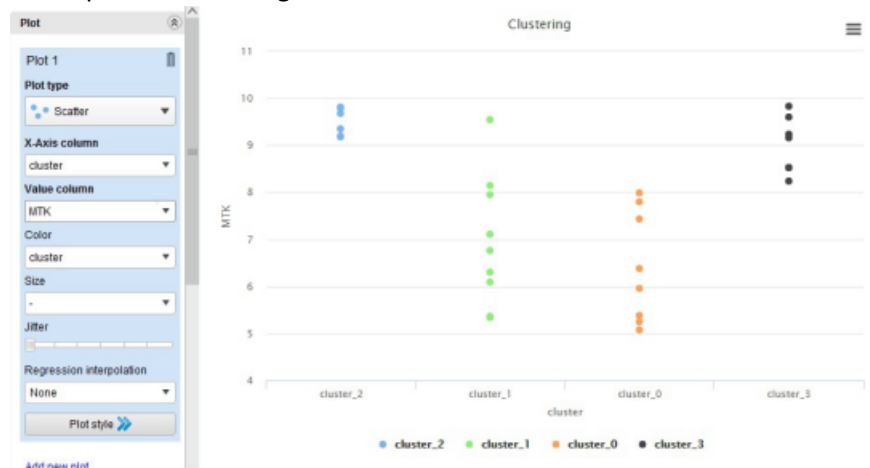
II. Kelompok Siswa Bidang B.Inggris



III. Kelompok Siswa Bidang IPA



IV. Kelompok Siswa Bidang MTK



c) ExampleSet (SVD)

Row No.	NAMA	cluster ↑	BJND	BJNG	MTK	IPA
3	SUSI	cluster_0	8.751	9.029	5.078	5.329
5	WATI	cluster_0	7.729	6.909	6.373	7.272
6	IKA	cluster_0	7.108	8.251	5.954	5.434
7	EKO	cluster_0	5.887	7.280	7.988	5.985
9	WAWAN	cluster_0	8.412	5.404	5.243	5.728
18	RANI	cluster_0	8.742	8.111	7.799	6.174
20	RATIH	cluster_0	7.584	9.748	5.375	6.686
23	SARAH	cluster_0	7.948	6.575	7.434	5.172
2	AGUS	cluster_1	8.766	6.193	6.296	8.662
8	YANTO	cluster_1	5.266	7.035	6.096	8.886
10	MAHMUD	cluster_1	5.568	5.494	6.760	7.929
12	SANTI	cluster_1	7.247	6.046	7.104	7.838
13	DIAN	cluster_1	6.235	8.819	7.954	8.229
16	BAYU	cluster_1	7.061	6.022	8.134	8.938
22	JONO	cluster_1	6.607	7.338	5.336	7.949
24	RAMA	cluster_1	5.135	5.214	5.364	7.357
26	HADI	cluster_1	6.056	5.108	9.539	8.736
1	JOKO	cluster_2	8.384	9.815	9.782	6.875
11	BUDI	cluster_2	9.062	7.676	9.172	7.827
14	DANI	cluster_2	9.699	7.158	9.680	8.909
15	AHMAD	cluster_2	8.748	8.450	9.205	8.268
28	FEBRI	cluster_2	9.453	9.779	9.820	9.317
30	TONI	cluster_2	9.960	6.408	9.359	9.251
4	DIYAH	cluster_3	9.338	6.785	9.153	5.438
17	RISA	cluster_3	8.679	5.779	8.231	7.768
19	YANI	cluster_3	9.516	6.542	9.608	6.306
21	INDAH	cluster_3	7.959	5.186	8.518	6.843
25	BAMBANG	cluster_3	6.303	5.548	8.530	5.503
27	NANA	cluster_3	8.606	5.720	9.228	6.506
29	DENI	cluster_3	6.038	7.337	9.835	6.172

d) Cluster Model (Clustering)

- Description

Cluster Model

```
Cluster 0: 8 items
Cluster 1: 8 items
Cluster 2: 6 items
Cluster 3: 7 items
Total number of items: 30
```

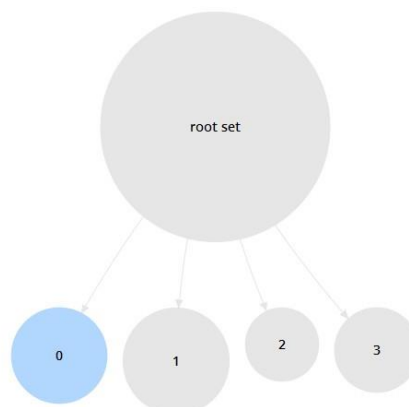
- Graph

Zoom

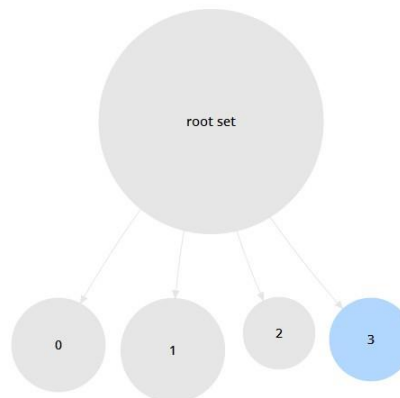
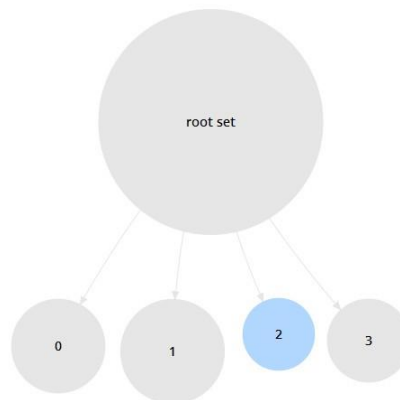
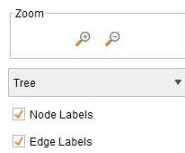
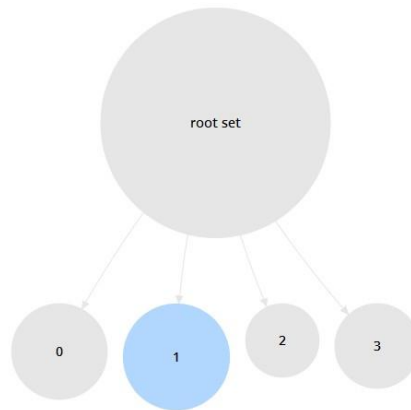
Tree

☒ Node Labels

☒ Edge Labels



SUSI
WATI
IKA
EKO
WAWAN
RANI
RATIH
SARAH



AGUS
YANTO
MAHMUD
SANTI
DIAN
BAYU
JONO
RAMA
HADI

JOKO
BUDI
DANI
AHMAD
FEBRI
TONI

DIYAH
RISA
YANI
INDAH
BAMBANG
NANA
DENI

Nama siswa yang terdapat dalam cluster :

- Cluster 0 : Susi, Wati, Ika, Eko, Wawan, Rani, Ratih, Sarah
- Cluster 1 : Agus, Yanto, Mahmud, Santi, Dian, Bayu, Jono, Rama, Hadi
- Cluster 2 : Joko, Budi, Dani, Ahmad, Febri, Toni
- Cluster 3 : Dyah, Risa, Yani, Indah, Bambang, Nana, Deni