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L200170183

G

DWDM Modul 10

A. KEGIATAN PRAKTIKUM
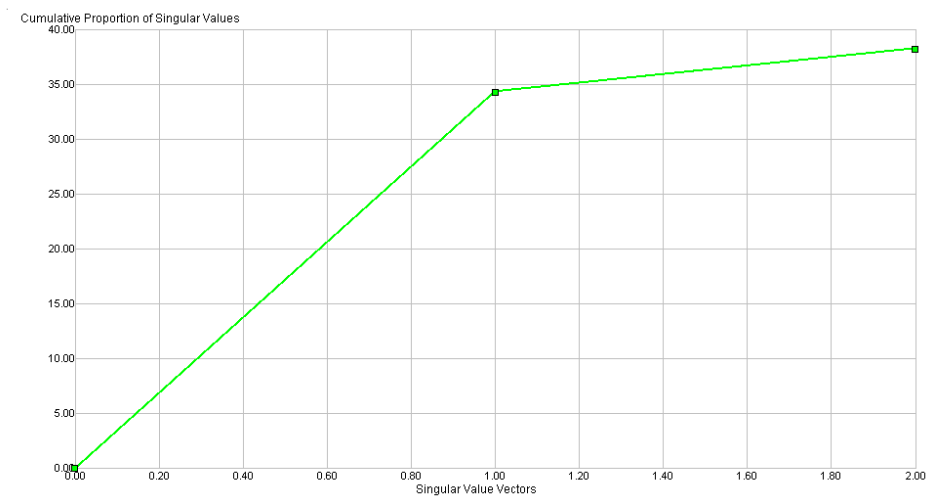
1. a. Nilai Eigenvalue

Component	Singular Value	Proportion of Singular Values	Cumulative Singular Values	Cumulative Proportion of Si...
SVD 1	34.340	0.898	34.340	0.898
SVD 2	3.906	0.102	38.246	1.000

b. Nilai SVD Vectors

Attribute	SVD Vector 1
B.IND	0.723
B.ING	0.690

c. Nilai Cumulative Variance

d. ExampleSet (k-Means) B.Ind dan B.Ing
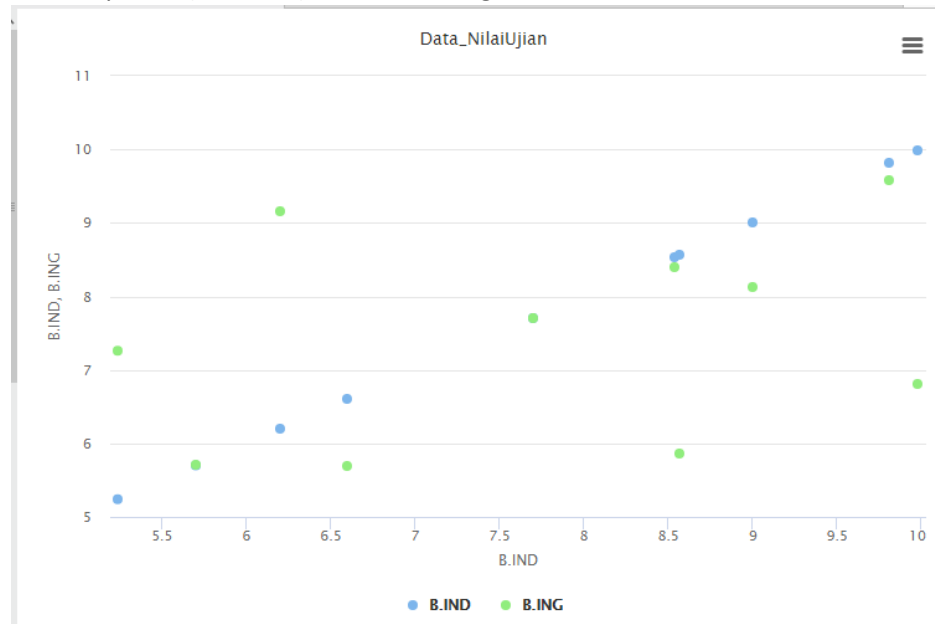
Data_NilaiUjian

e. ExampleSet (SVD)

Row No.	NAMA	cluster	svd_1
1	JOKO	cluster_0	0.349
2	AGUS	cluster_0	0.347
3	SUSI	cluster_1	0.315
4	DYAH	cluster_1	0.256
5	WATI	cluster_2	0.235
6	IKA	cluster_2	0.299
7	EKO	cluster_0	0.317
8	YANTO	cluster_2	0.254
9	WAWAN	cluster_0	0.353
10	MAHMUD	cluster_0	0.399

f. Cluster Model (Clustering)
i).Description

Cluster Model

```
Cluster 0: 5 items
Cluster 1: 2 items
Cluster 2: 3 items
Total number of items: 10
```

ii). Graph

## g. Interprestasi Hasil Algoritma K-MEANS

Row No.	NAMA	cluster ↑	svd_1
1	JOKO	cluster_0	0.349
2	AGUS	cluster_0	0.347
7	EKO	cluster_0	0.317
9	WAWAN	cluster_0	0.353
10	MAHMUD	cluster_0	0.399
3	SUSI	cluster_1	0.315
4	DYAH	cluster_1	0.256
5	WATI	cluster_2	0.235
6	IKA	cluster_2	0.299
8	YANTO	cluster_2	0.254

B. TUGAS

1. Data 30 Siswa dengan rumus =5+RAND()*5

|	A	B	C	D	E	F
1	NO_SISWA	NAMA	B.IND	B.ING	MTK	IPA
2	S-101	JOKO	5.292380102	6.18464023	7.340769527	8.014493728
3	S-102	AGUS	6.87179145	7.291743414	9.581804445	5.42951228
4	S-103	SUSI	5.578854476	5.753529008	8.179219386	6.096959262
5	S-104	DYAH	8.697221599	7.288574427	9.729181748	9.907049
6	S-105	WATI	8.662614684	9.985693966	9.910006419	7.529451318
7	S-106	IKA	6.772307704	8.031687008	5.391441764	6.79570062
8	S-107	EKO	7.511132474	7.19118989	6.910742226	7.626447414
9	S-108	YANTO	8.874056675	8.302788022	9.980998009	6.352760635
10	S-109	WAWAN	9.197267496	6.895843665	5.942284877	6.315687921
11	S-110	MAHMUD	5.620687441	6.055528905	7.270274555	7.962500779
12	S-111	BUDI	5.548686109	9.128478823	5.264766596	5.257039187
13	S-112	SANTI	8.421657151	8.016902034	7.758604935	6.661652872
14	S-113	DIAN	6.271992307	8.66073038	7.597317861	9.003101964
15	S-114	DANI	7.614097065	9.203156022	7.297336948	5.827056545
16	S-115	AHMAD	7.841528393	7.831237872	5.129861767	9.066061905
17	S-116	BAYU	5.666734862	8.992366306	5.73023886	5.851580022
18	S-117	RISA	7.29462784	9.009200878	6.049316127	8.597445068
19	S-118	RANI	9.753019585	5.378000148	8.962647347	7.632192243
20	S-119	YANI	6.108963502	5.395538919	6.368310368	9.231964423
21	S-120	RATIH	5.020656668	5.107172117	5.361175301	8.991170114
22	S-121	INDAH	8.565188009	7.428038033	6.856022062	8.741873665
23	S-122	JONO	5.897039662	8.57701315	7.787764987	8.533057005
24	S-123	SARAH	8.534582259	8.055026767	6.748157195	9.454578123
25	S-124	RAMA	9.185918535	6.824736896	8.253673341	6.238946543
26	S-125	BAMBANG	5.306992401	6.470477215	7.766223569	7.104469062
27	S-126	HADI	9.300717797	7.770390901	5.681358885	8.761440338
28	S-127	NANA	5.504388608	9.996609575	9.399918096	7.314616029
29	S-128	FEBRI	9.472389679	6.290170522	8.429941653	8.995353926
30	S-129	DENI	7.035828379	6.141142593	5.562866163	7.268055618
31	S-130	TONI	5.741676946	6.461089579	9.260536197	7.525272233

2. Design
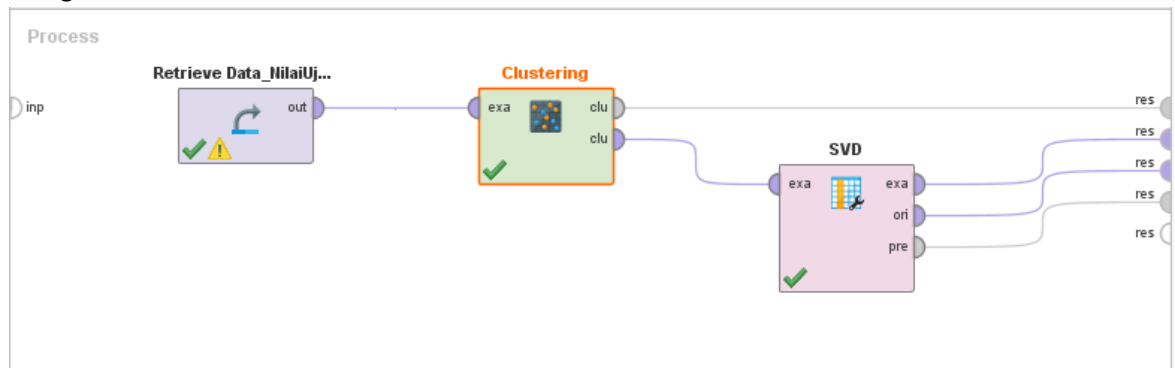
a. Nilai Eigenvalue

Component	Singular Value	Proportion of Singular Values	Cumulative Singular Values	Cumulative Proportion of Si...
SVD 1	81.711	0.781	81.711	0.781
SVD 2	8.213	0.079	89.924	0.860
SVD 3	7.623	0.073	97.547	0.933
SVD 4	7.024	0.067	104.572	1.000

b. Nilai SVD vectors

Attribute	SVD Vector 1	SVD Vector 2	SVD Vector 3
B.IND	0.490	-0.240	-0.252
B.ING	0.501	0.446	0.739
MTK	0.499	0.503	-0.614
IPA	0.510	-0.700	0.116

c. Nilai Comulative variance
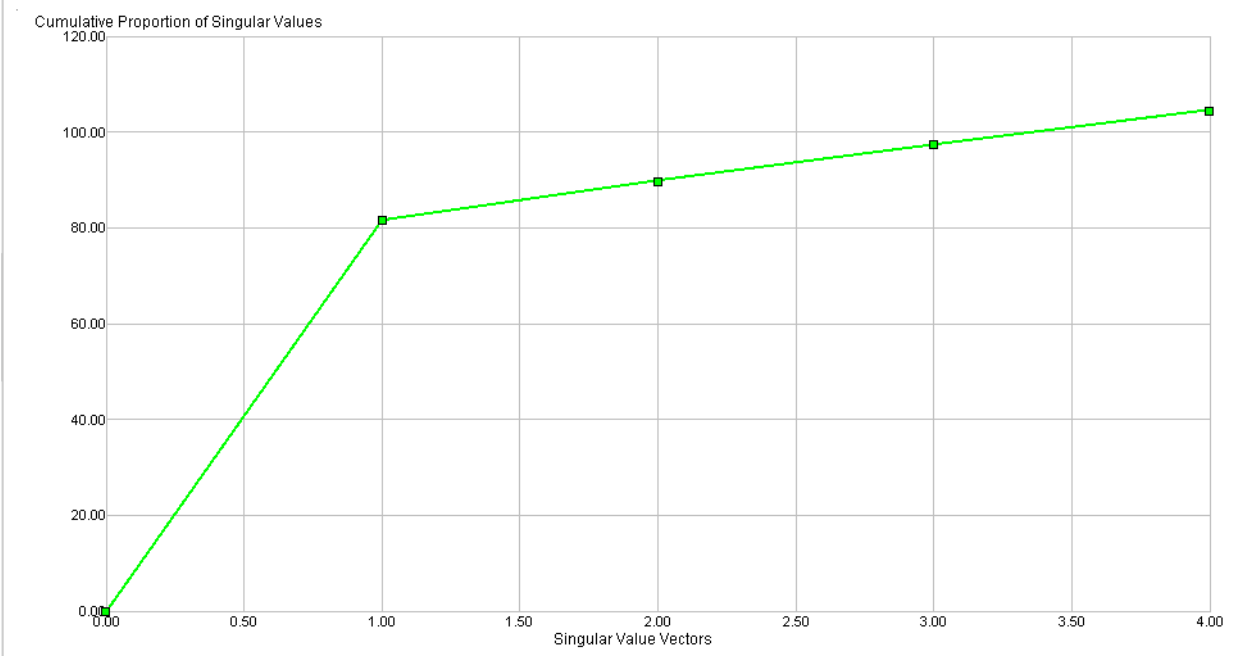
d. ExampleSet (k-means)
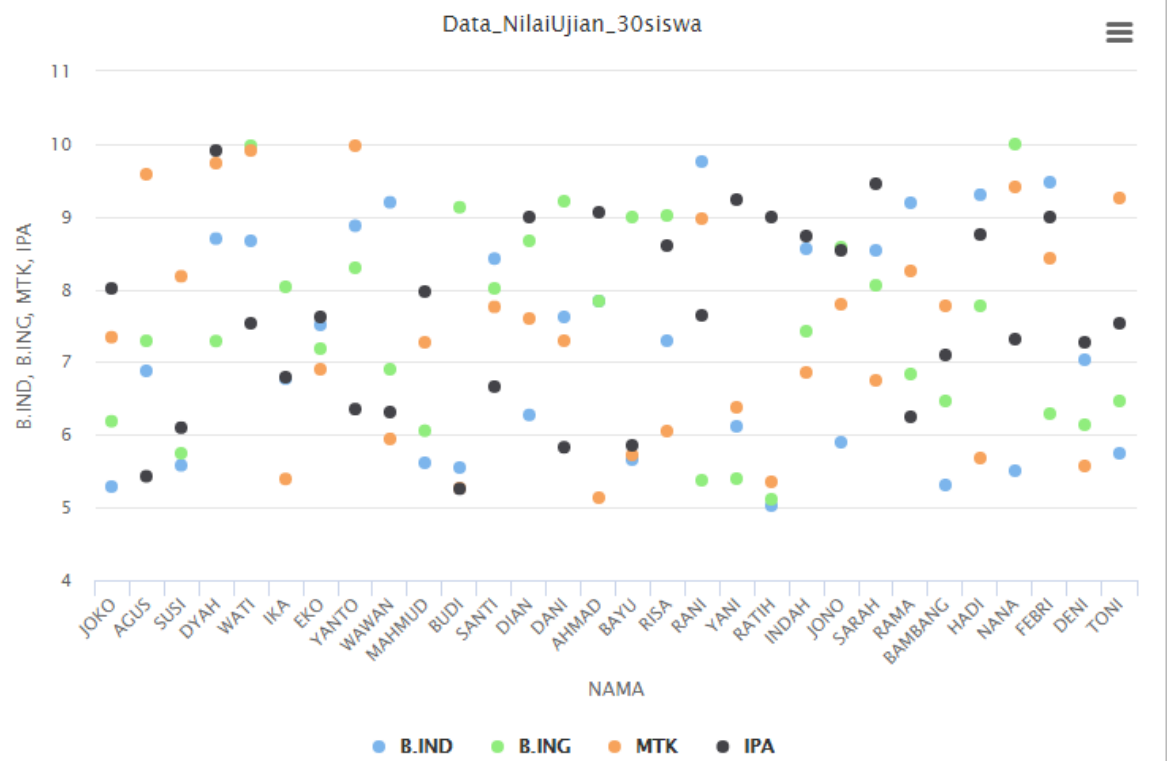
e. ExampleSet (SVD)

Row No.	NAMA	cluster	svd_1
1	JOKO	cluster_2	0.164
2	AGUS	cluster_0	0.178
3	SUSI	cluster_2	0.157
4	DYAH	cluster_1	0.218
5	WATI	cluster_1	0.221
6	IKA	cluster_0	0.165
7	EKO	cluster_3	0.179
8	YANTO	cluster_1	0.205
9	WAWAN	cluster_3	0.173
10	MAHMUD	cluster_2	0.165
11	BUDI	cluster_0	0.154
12	SANTI	cluster_1	0.189
13	DIAN	cluster_3	0.193

14	DANI	cluster_0	0.183
15	AHMAD	cluster_3	0.183
16	BAYU	cluster_0	0.161
17	RISA	cluster_3	0.190
18	RANI	cluster_1	0.194
19	YANI	cluster_2	0.166
20	RATIH	cluster_2	0.150
21	INDAH	cluster_3	0.193
22	JONO	cluster_3	0.189
23	SARAH	cluster_3	0.201
24	RAMA	cluster_1	0.186
25	BAMBANG	cluster_2	0.163
26	HADI	cluster_3	0.193
27	NANA	cluster_0	0.197
28	FEBRI	cluster_1	0.203
29	DENI	cluster_2	0.159
30	TONI	cluster_2	0.178

f. Cluster Model
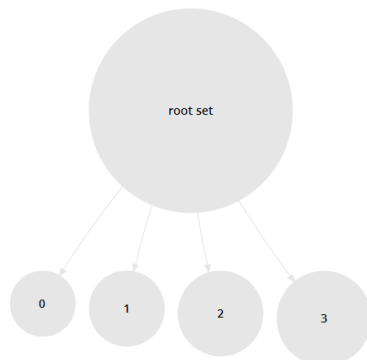
Cluster Model

```
Cluster 0: 6 items
Cluster 1: 7 items
Cluster 2: 8 items
Cluster 3: 9 items
Total number of items: 30
```

g. Graph

3. Interprestasi Hasil Algoritma K-MEANS

Row No.	NAMA	cluster ↑	B.IND	B.ING	MTK	IPA
2	AGUS	cluster_0	6.872	7.292	9.582	5.430
6	IKA	cluster_0	6.772	8.032	5.391	6.796
11	BUDI	cluster_0	5.549	9.128	5.265	5.257
14	DANI	cluster_0	7.614	9.203	7.297	5.827
16	BAYU	cluster_0	5.667	8.992	5.730	5.852
27	NANA	cluster_0	5.504	9.997	9.400	7.315
4	DYAH	cluster_1	8.697	7.289	9.729	9.907
5	WATI	cluster_1	8.663	9.986	9.910	7.529
8	YANTO	cluster_1	8.874	8.303	9.981	6.353
12	SANTI	cluster_1	8.422	8.017	7.759	6.662
18	RANI	cluster_1	9.753	5.378	8.963	7.632
24	RAMA	cluster_1	9.186	6.825	8.254	6.239
28	FEBRI	cluster_1	9.472	6.290	8.430	8.995
1	JOKO	cluster_2	5.292	6.185	7.341	8.014
3	SUSI	cluster_2	5.579	5.754	8.179	6.097
10	MAHMUD	cluster_2	5.621	6.056	7.270	7.963
19	YANI	cluster_2	6.109	5.396	6.368	9.232
20	RATIH	cluster_2	5.021	5.107	5.361	8.991
25	BAMBANG	cluster_2	5.307	6.470	7.766	7.104
29	DENI	cluster_2	7.036	6.141	5.563	7.268
30	TONI	cluster_2	5.742	6.461	9.261	7.525
7	EKO	cluster_3	7.511	7.191	6.911	7.626
9	WAWAN	cluster_3	9.197	6.896	5.942	6.316
13	DIAN	cluster_3	6.272	8.661	7.597	9.003
15	AHMAD	cluster_3	7.842	7.831	5.130	9.066
17	RISA	cluster_3	7.295	9.009	6.049	8.597
21	INDAH	cluster_3	8.565	7.428	6.856	8.742
22	JONO	cluster_3	5.897	8.577	7.788	8.533
23	SARAH	cluster_3	8.535	8.055	6.748	9.455
26	HADI	cluster_3	9.301	7.770	5.681	8.761