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NIM : L200170155

Kelas : F

Laporan Praktikum DWDM

Modul 10

Tabel Data Nilai Ujian

NO_SISWA	NAMA	BIND	BING
S-101	JOKO	8.54	8.4
S-102	AGUS	9.98	6.81
S-103	SUSI	6.2	9.15
S-104	DYAH	5.24	7.26
S-105	WATI	5.7	5.71
S-106	IKA	8.57	5.87
S-107	EKO	7.7	7.71
S-108	YANTO	6.6	5.7
S-109	WAWAN	9	8.12
S-110	MAHMUD	9.81	9.58

Hasil proses clustering dengan algoritma K-Means.

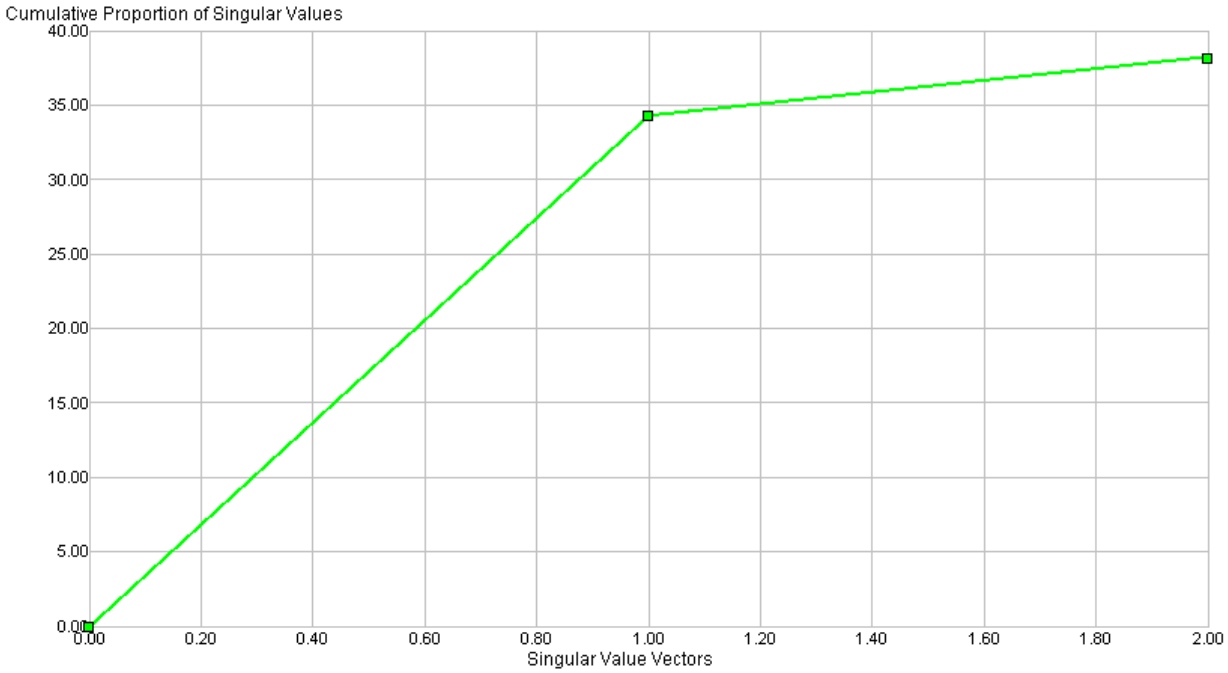
a. SVD (Singular Value Decomposition)
   i. Nilai Eigenvalue

Component	Singular Value	Proportion of Singular V...	Cumulative Singular Val...	Cumulative Proportion o...
SVD 1	34.340	0.898	34.340	0.898
SVD 2	3.906	0.102	38.246	1.000

   ii. Nilai SVD vectors

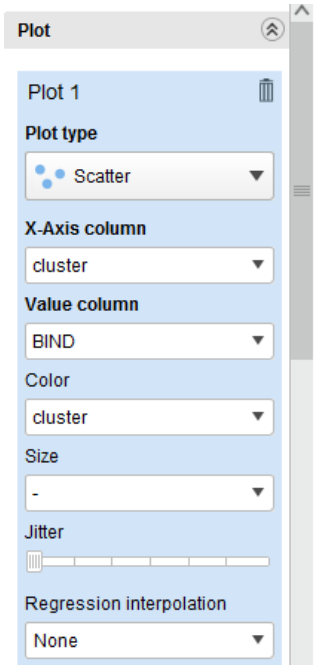
Attribute	SVD Vector 1
BIND	0.723
BING	0.690

iii. Nilai Cumulative Variance

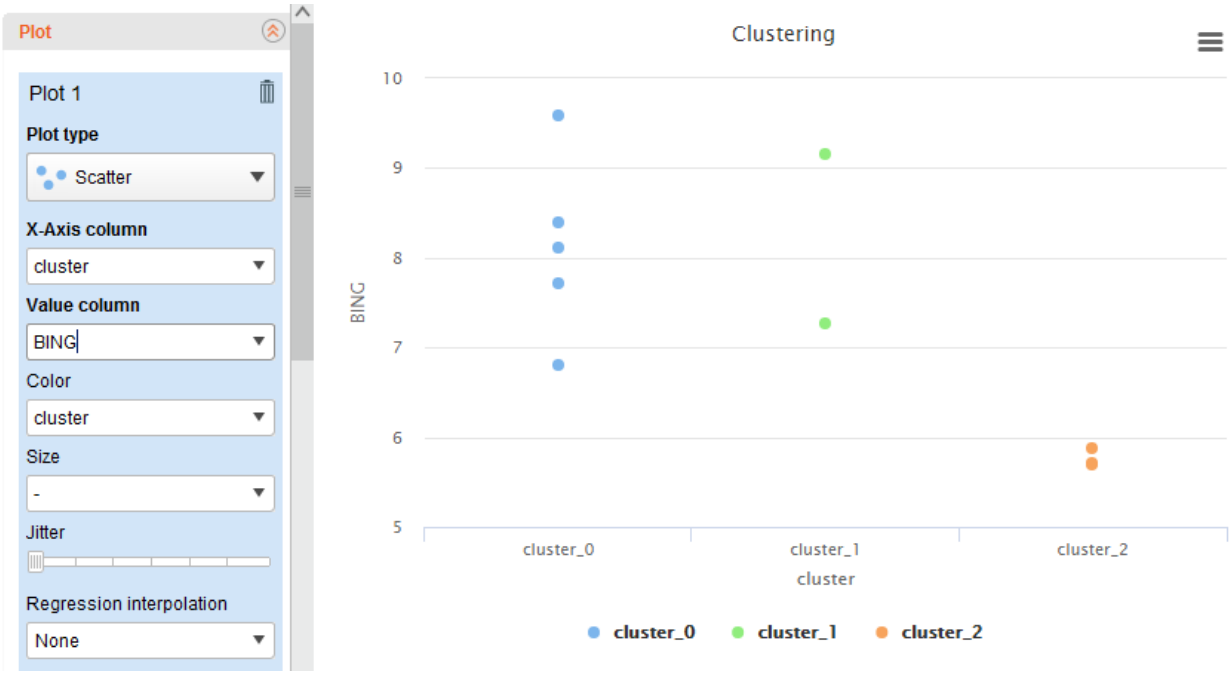


b. Example Set (k-Menas)

i. Kelompok siswa bidang B.Indonesia



ii. Kelompok siswa bidang B.Inggris



c. ExampleSet (SVD)

Open in Turbo Prep Auto Model

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

Cluster Model

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

TUGAS

1. Buatlah tabel berikut dengan menggunakan Excel!

Data Nilai Ujian 30 siswa :

	A	B	C	D	E	F
1	NO_SISWA	NAMA	BIND	BING	MTK	IPA
2	S-101	JOKO	6.2014	6.5069	6.9242	8.3564
3	S-102	AGUS	5.071	6.0974	7.5203	9.3861
4	S-103	SUSI	7.1919	9.2813	8.6322	6.5214
5	S-104	DYAH	7.5758	7.0866	9.5757	7.0545
6	S-105	WATI	9.9838	9.8962	8.3093	8.0971
7	S-106	IKA	8.6744	6.8306	8.768	5.0468
8	S-107	EKO	8.6224	7.979	7.4038	6.5428
9	S-108	YANTO	6.0273	5.9642	6.7326	5.9712
10	S-109	WAWAN	6.6865	7.6414	9.8346	7.3705
11	S-110	MAHMUD	8.8345	5.5324	5.5153	5.8806
12	S-111	BUDI	8.79	5.4079	8.2984	9.232
13	S-112	SANTI	8.7077	7.1091	8.2892	5.4927
14	S-113	DIAN	6.9639	8.6545	9.9628	8.0218
15	S-114	DANI	9.9464	5.3423	9.0912	6.1343
16	S-115	AHMAD	5.9874	9.6268	7.6146	5.2609
17	S-116	BAYU	8.5196	8.187	8.8239	5.4687
18	S-117	RISA	5.7564	9.4657	7.7803	8.9163
19	S-118	RANI	7.0135	9.7658	8.2929	5.9207
20	S-119	YANI	6.254	8.8847	5.5476	5.9958
21	S-120	RATIH	9.9206	7.6845	6.5245	7.2161
22	S-121	INDAH	7.8948	6.2001	6.771	5.0242
23	S-122	JONO	7.6924	9.2614	7.5558	7.6539
24	S-123	SARAH	5.9374	8.7523	8.5411	9.0749
25	S-124	RAMA	8.7996	8.1564	8.9162	9.1857
26	S-125	BAMBAN	7.5299	5.4061	5.1201	9.1138
27	S-126	HADI	8.3457	6.6085	5.675	6.648
28	S-127	HANA	8.5043	8.8866	6.016	9.3662
29	S-128	FEBRI	7.2865	7.0409	8.6015	8.943
30	S-129	DENI	5.6769	8.1948	5.3355	8.6287
31	S-130	TONI	5.0087	7.4839	7.9528	7.8316

2. Lakukan kembali kegiatan 10.4.1 dan 10.4.2 pada modul 10 decara lengkap menggunakan data yang terdapat pada table Data Nilai Ujian 30 siswa dengan ketentuan jumlah cluter = 4. Catat dan tulis hasilnya pada lembar jawaban anda.

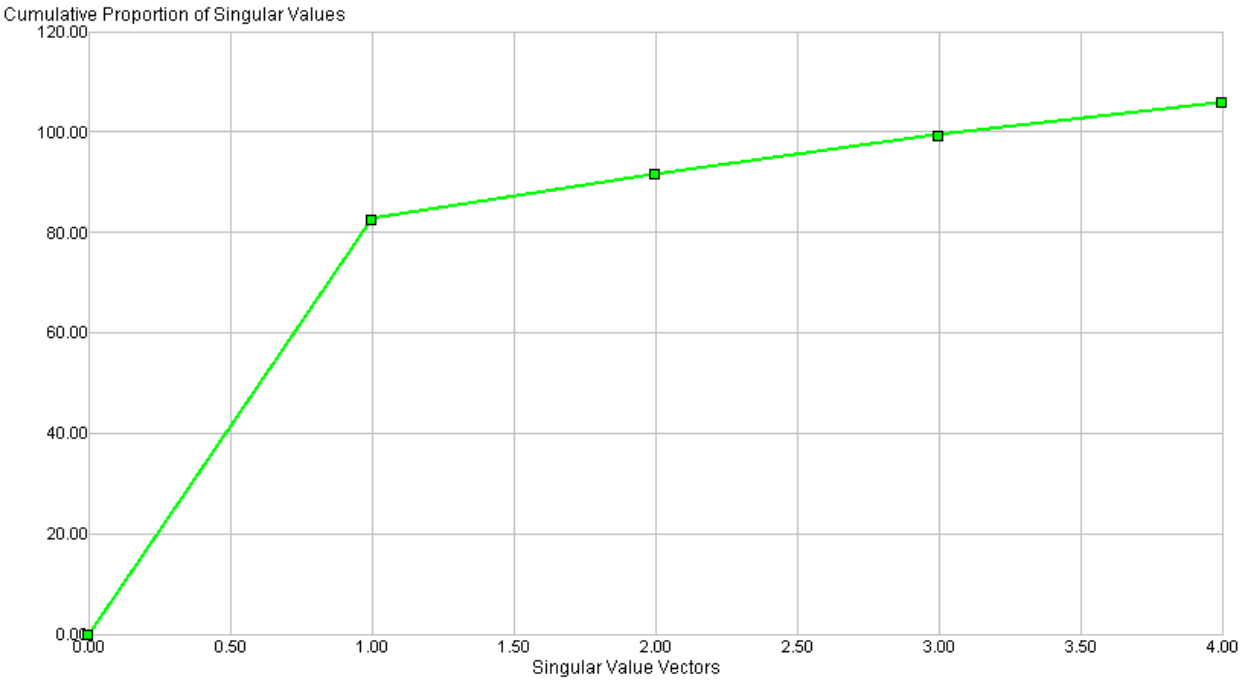
a. SVD (Singular Value Decompisition)
   i. Nilai Eigenvalue

Component	Singular Value	Proportion of Singular V...	Cumulative Singular Val...	Cumulative Proportion o...
SVD 1	82.844	0.781	82.844	0.781
SVD 2	8.869	0.084	91.712	0.865
SVD 3	7.841	0.074	99.553	0.939
SVD 4	6.488	0.061	106.041	1.000

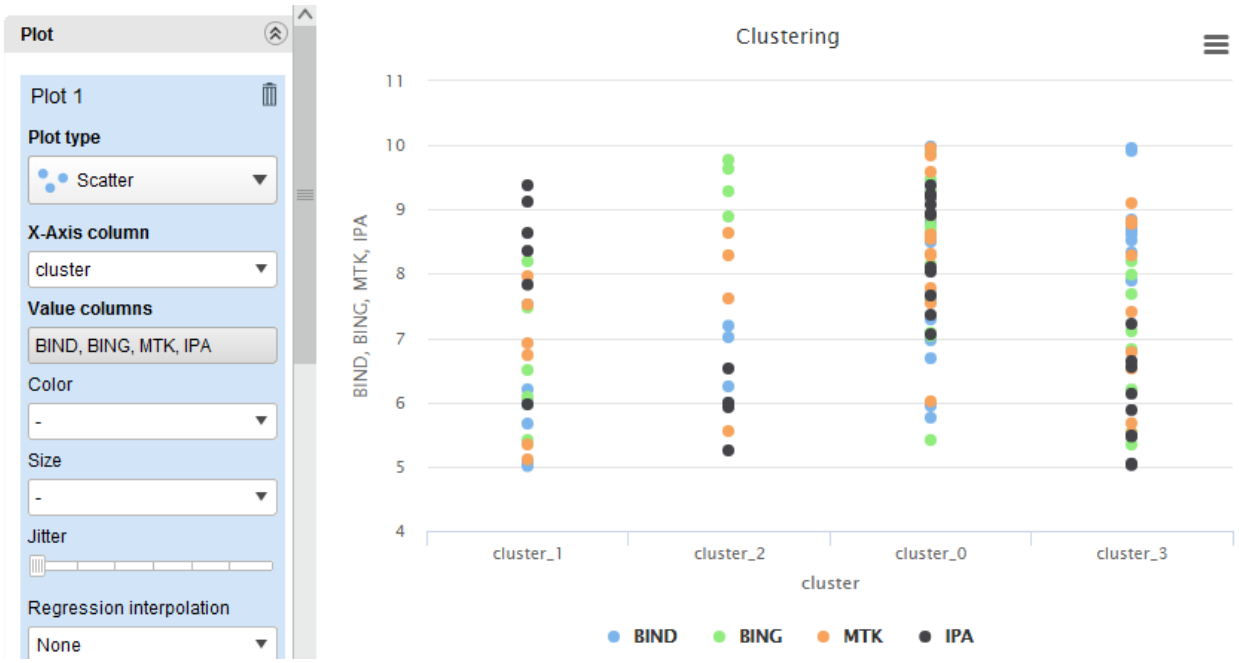
ii. Nilai SVD Vectors

Attribute	SVD Vector 1	SVD Vector 2	SVD Vector 3
BIND	0.498	-0.732	-0.348
BING	0.507	0.272	0.623
MTK	0.510	-0.136	0.315
IPA	0.485	0.610	-0.626

iii. Nilai Cumulative Variance



b. ExampleSet (k-Means)



c. ExampleSet(SVD)

Row No.	NAMA	cluster	svd_1
4	DYAH	cluster_0	0.189
5	WATI	cluster_0	0.219
9	WAWAN	cluster_0	0.191
11	BUDI	cluster_0	0.191
13	DIAN	cluster_0	0.203
17	RISA	cluster_0	0.193
22	JONO	cluster_0	0.194
23	SARAH	cluster_0	0.195
24	RAMA	cluster_0	0.211
27	HANA	cluster_0	0.197
28	FEBRI	cluster_0	0.192

1	JOKO	cluster_1	0.169
2	AGUS	cluster_1	0.169
8	YANTO	cluster_1	0.149
25	BAMBANG	cluster_1	0.163
29	DENI	cluster_1	0.168
30	TONI	cluster_1	0.171
3	SUSI	cluster_2	0.191
15	AHMAD	cluster_2	0.173
18	RANI	cluster_2	0.188
19	YANI	cluster_2	0.161
6	IKA	cluster_3	0.177
7	EKO	cluster_3	0.185
10	MAHMUD	cluster_3	0.155
12	SANTI	cluster_3	0.179
14	DANI	cluster_3	0.184
16	BAYU	cluster_3	0.188
20	RATIH	cluster_3	0.189
21	INDAH	cluster_3	0.156
26	HADI	cluster_3	0.164

d. Cluster Model (Clustering)

i. Description

Cluster Model

```
Cluster 0: 11 items
Cluster 1: 6 items
Cluster 2: 4 items
Cluster 3: 9 items
Total number of items: 30
```

ii. Graph