

**NAMA = CORRY LUQMA ZUNIRA**

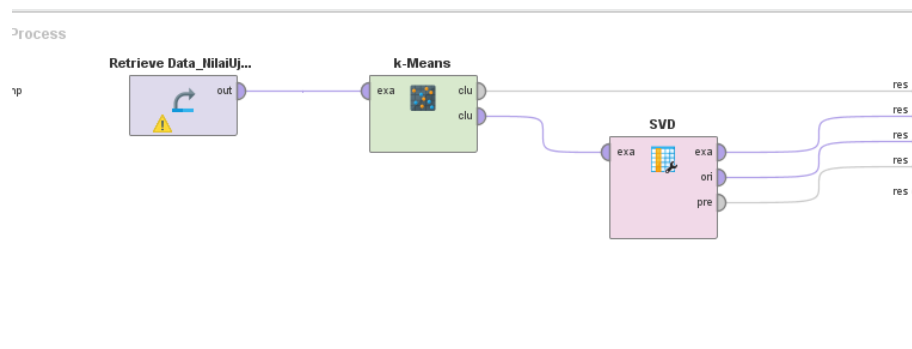
**NIM = L200170152**

**KELAS = F**

## **PRAKTIKUM MODUL 10**

### **K-MEANS**

Kegiatan Praktikum.



a) SVD(Singular Value Decomposition)

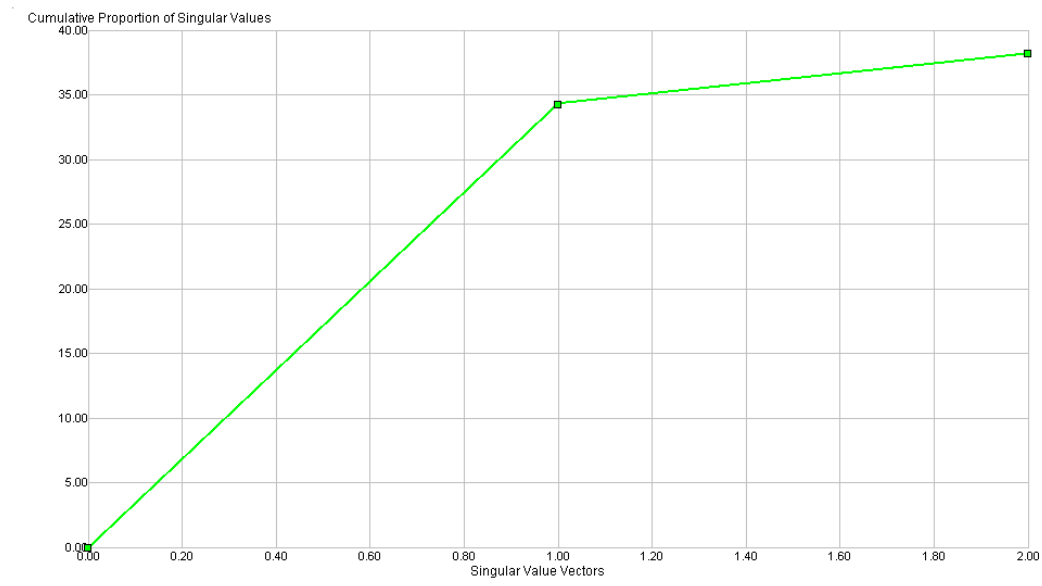
i) Nilai Eigenvalue

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

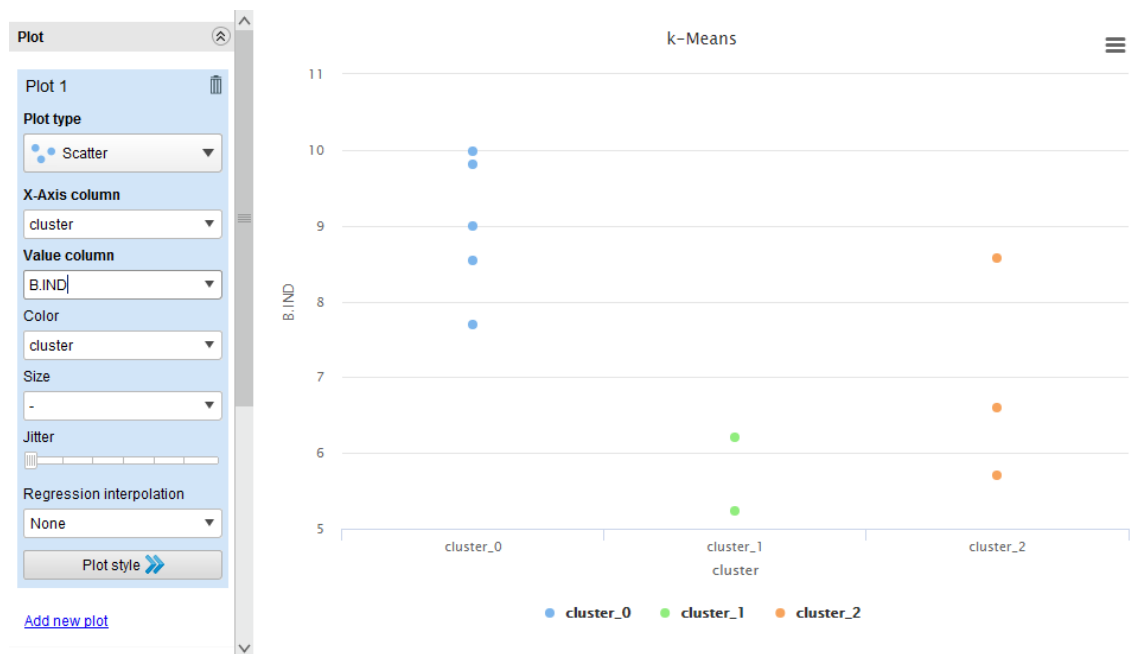
ii) Nilai svd vectors

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

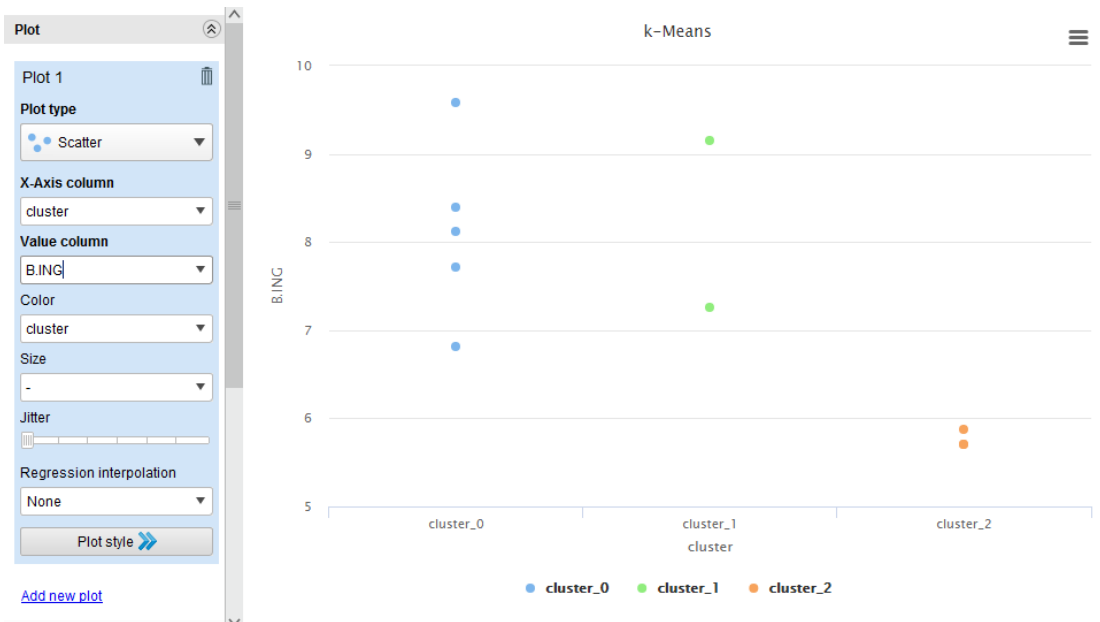
iii) Nilai cumulative variance



i) Kelompok Siswa Bidang B.inggris



ii) Kelompok siswa bidang b.inggris



b) ExampleSet(svd)

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

c) Cluster model

i) Description

## Cluster Model

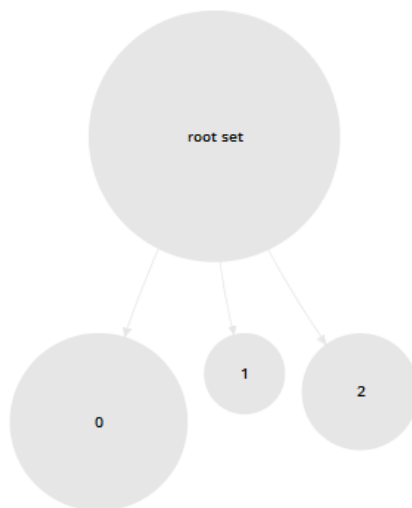
Cluster 0: 5 items

Cluster 1: 2 items

Cluster 2: 3 items

Total number of items: 10

ii) Graph



## TUGAS

1. Buatlah table berikut dengan menggunakan Microsoft Excel!

NO_SISWA	NAMA	B.IND	B.ING	MTK	IPA
S-101	JOKO	6.39103832	9.87556023	9.72981993	8.8692655
S-102	AGUS	7.11093392	6.550204568	9.03827945	8.4605997
S-103	SUSI	8.74719356	5.313745924	5.3758926	5.133552
S-104	DIYAH	7.9435798	5.165919465	7.61737535	7.5637215
S-105	WATI	7.65412844	7.968833628	5.38446229	6.5374074
S-106	IKA	5.91677168	7.083393691	6.22121404	9.9268326
S-107	EKO	7.76829119	7.79053078	5.15714747	5.7327144
S-108	YANTO	9.86947726	7.01359521	6.26221202	8.6965756
S-109	WAWAN	9.1906049	7.184054775	8.6298861	9.0979594
S-110	MAHMUD	6.10138025	7.949986102	5.61236396	7.5479669
S-111	BUDI	8.00891257	5.830162674	6.3119328	5.4158067
S-112	SANTI	7.42080484	6.003881439	9.77162037	7.3515805
S-113	DIAN	9.92780601	5.525696694	8.22609566	5.743784
S-114	DANI	8.37541355	6.092339467	9.30599902	6.1400888
S-115	AHMAD	6.94781901	7.588361805	9.79719472	8.0454313
S-116	BAYU	7.7263439	5.651190988	6.39371788	7.8793117
S-117	RISA	7.42145048	9.447548252	9.90563436	8.9380875
S-118	RANI	7.40326372	6.231450755	7.94051218	7.1824779
S-119	YANI	7.62802464	5.853221654	8.89058972	6.6720783
S-120	RATIH	6.09196317	6.028139342	9.78963118	5.3747235
S-121	INDAH	5.29226871	7.437777159	6.81481332	7.3083898
S-122	JONO	8.46857612	8.429182639	8.89392083	6.1579233
S-123	SARAH	5.42958718	5.909818667	6.37146663	5.8117976
S-124	RAMA	7.14297935	7.587083634	7.16394313	9.0982662
S-125	BAMBAN	5.6224487	7.988179762	7.45089825	8.2295639
S-126	HADI	8.19582583	6.342539278	9.75531137	7.2807662
S-127	NANA	8.81975299	9.198269326	9.02796331	5.9244713
S-128	FEBRI	8.50459534	6.743505645	7.64674682	9.0091743
S-129	DENI	5.18934092	8.972233976	9.57814501	9.6673018
S-130	TONI	5.41016609	6.568587258	8.58809256	5.2763698

2. Lakukan kembali kegiatan 10.4.1 dan 10.4.2 pada modul 10 ini secara lengkap menggunakan data yang terdapat pada table.

a) SVD ( Singular Value Decomposition )

a. Nilai Eigenvalue

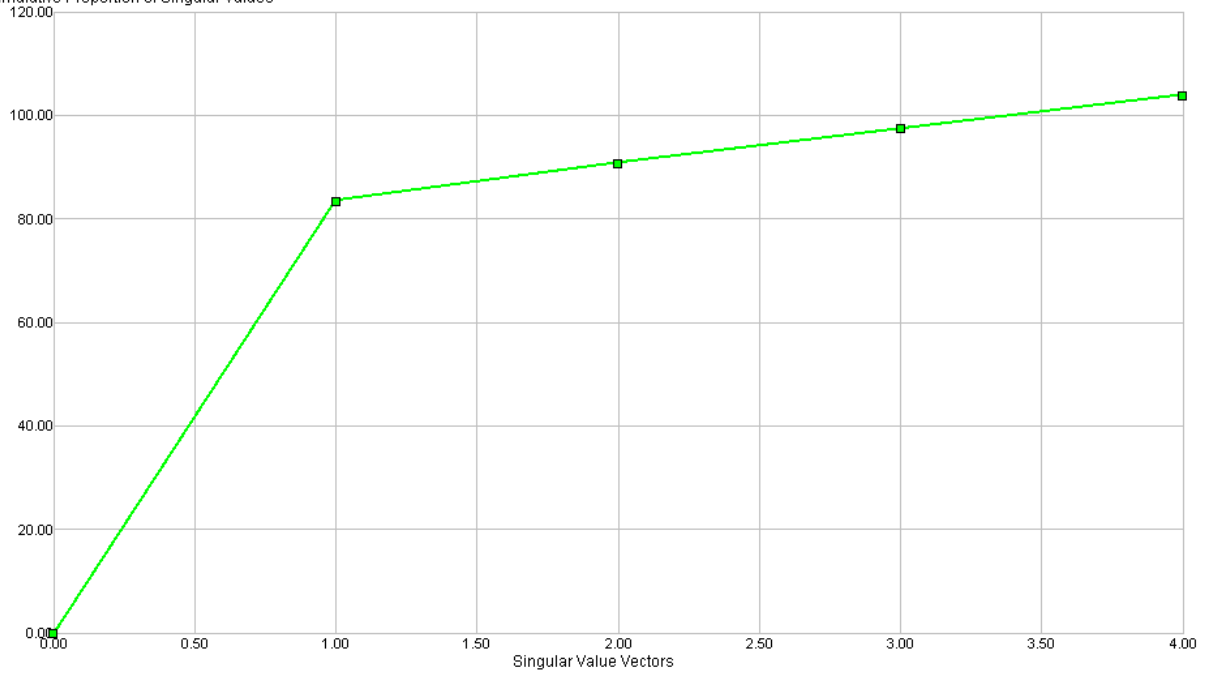
Component	Singular Value	Proportion of Singular Values	Cumulative Singular Values	Cumulative Proportion of Sin...
SVD 1	83.590	0.804	83.590	0.804
SVD 2	7.288	0.070	90.877	0.874
SVD 3	6.697	0.064	97.574	0.939
SVD 4	6.358	0.061	103.932	1.000

b. Nilai Svd vectors

Attribute	SVD Vector 1	SVD Vector 2	SVD Vector 3
B.IND	0.492	-0.382	0.755
B.ING	0.486	0.348	-0.337
MTK	0.503	0.632	0.146
IPA	0.518	-0.578	-0.543

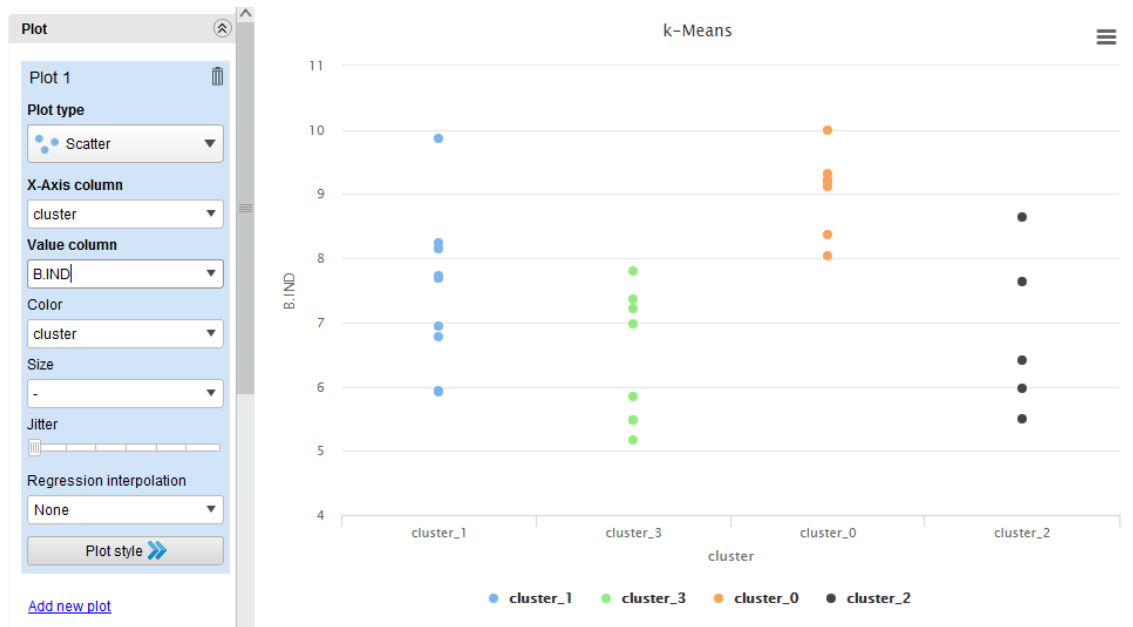
c. Nilai Cumulative Variance

Cumulative Proportion of Singular Values

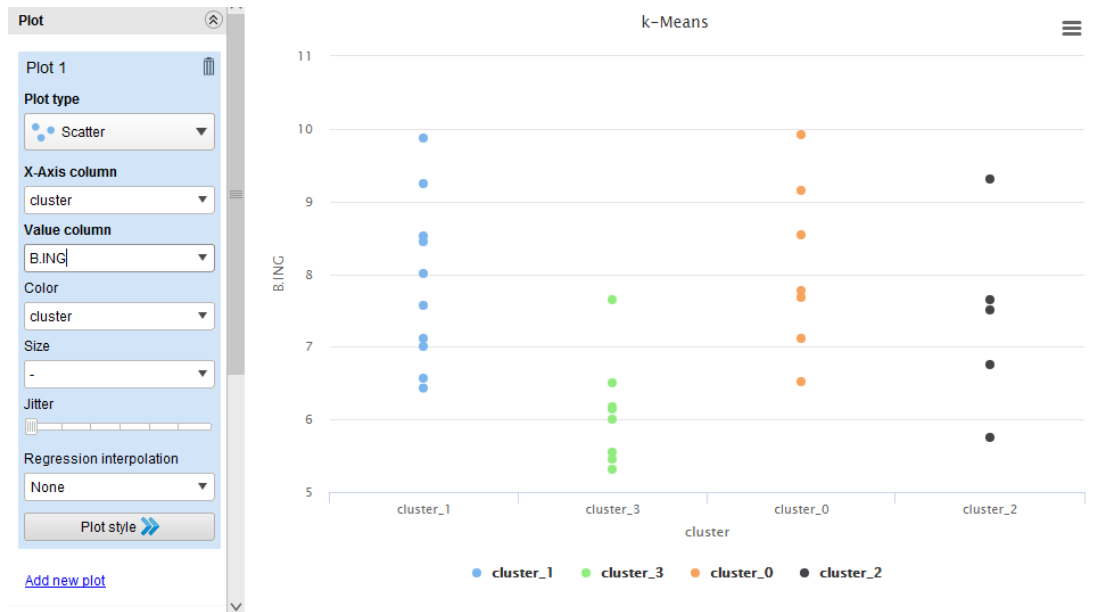


## b) ExampleSet(k-Means)

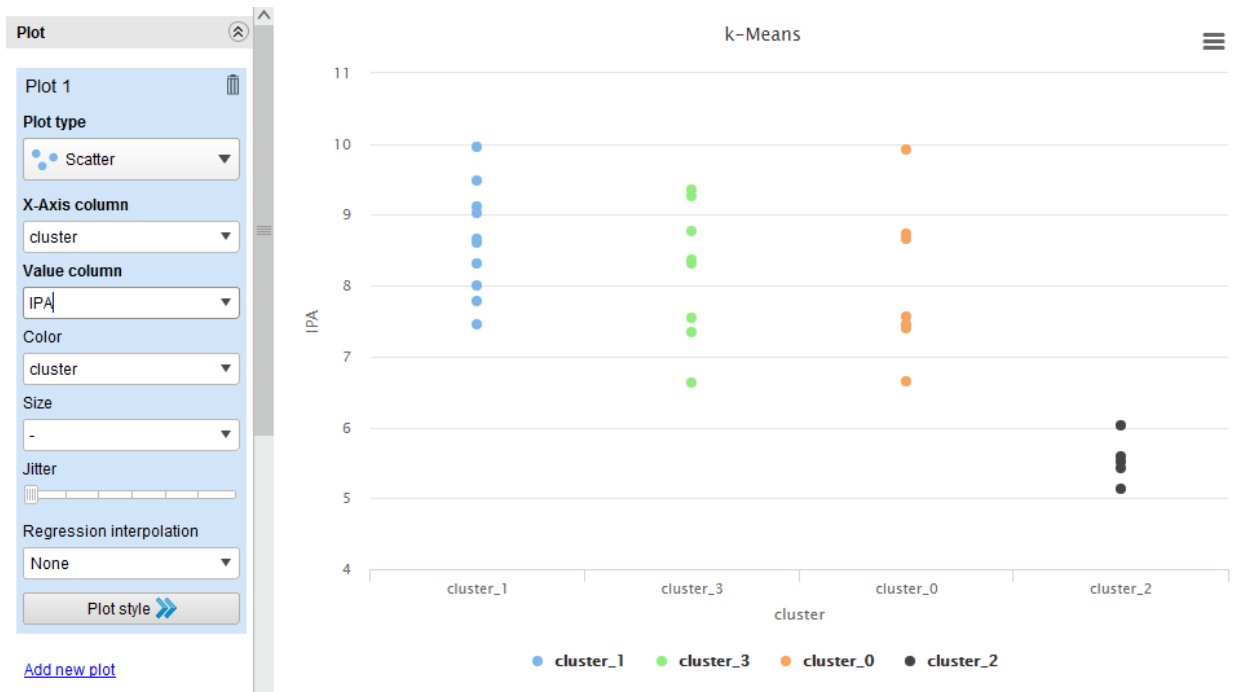
### a. B.indonesia



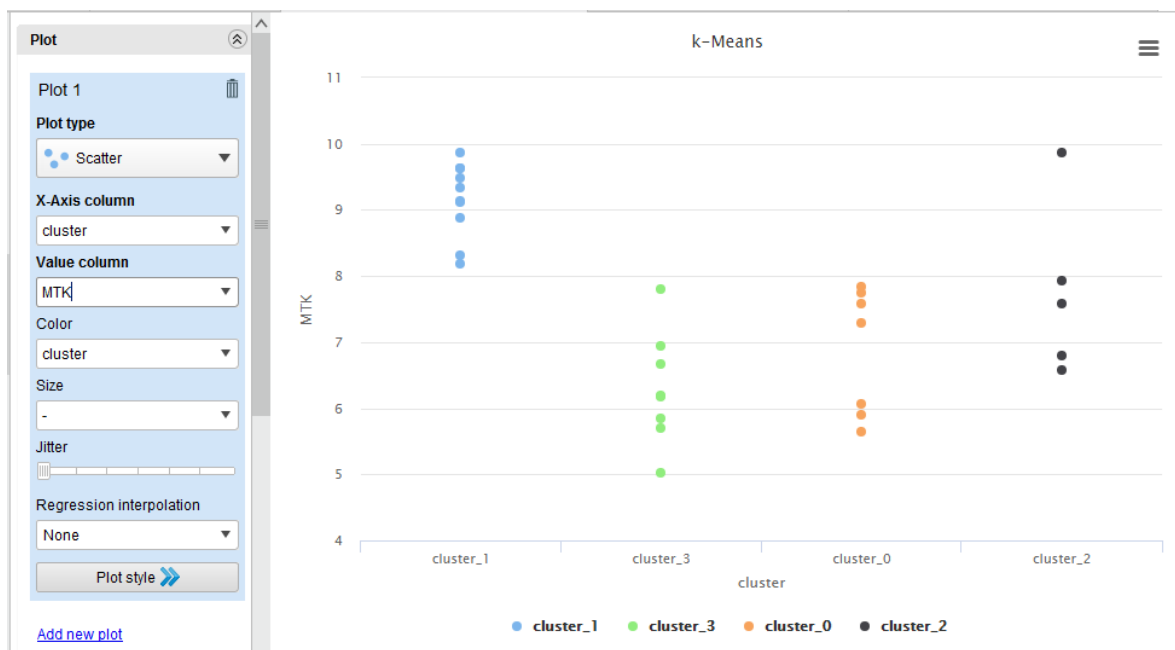
### b. B.inggris



### c. IPA



### d. MTK





c) ExampleSet(SVD)

Row No.	NAMA	cluster ↑	svd_1
4	DYAH	cluster_0	0.199
17	RISA	cluster_0	0.167
18	RANI	cluster_0	0.192
23	SARAH	cluster_0	0.208
26	HADI	cluster_0	0.175
27	NANA	cluster_0	0.203
30	TONI	cluster_0	0.196
1	JOKO	cluster_1	0.211
7	EKO	cluster_1	0.209
9	WAWAN	cluster_1	0.188
11	BUDI	cluster_1	0.191
12	SANTI	cluster_1	0.194
19	YANI	cluster_1	0.206
20	RATIH	cluster_1	0.196

Row No.	NAMA	cluster ↑	svd_1
22	JONO	cluster_1	0.191
24	RAMA	cluster_1	0.218
29	DENI	cluster_1	0.183
6	IKA	cluster_2	0.157
10	MAHMUD	cluster_2	0.182
13	DIAN	cluster_2	0.160
15	AHMAD	cluster_2	0.164
28	FEBRI	cluster_2	0.159
2	AGUS	cluster_3	0.162
3	SUSI	cluster_3	0.166
5	WATI	cluster_3	0.162
8	YANTO	cluster_3	0.175
14	DANI	cluster_3	0.180
16	BAYU	cluster_3	0.148
21	INDAH	cluster_3	0.146
25	BAMBANG	cluster_3	0.157

- d) Cluster Model(Clustering)
- a. Description

## Cluster Model

```
Cluster 0: 7 items
Cluster 1: 10 items
Cluster 2: 5 items
Cluster 3: 8 items
Total number of items: 30
```

b. Graph



3. Tulislah masing masing nama siswa yang terdapat dalam Kelompok Cluster 0, Cluster 1, Cluster 2, Cluster 3.

cluster 0	cluster 1	cluster 2	cluster 3
DYAH	JOKO	IKA	AGUS
RISA	EKO	MAHMUD	SUSI
RANI	WAWAN	DIAN	WATI
SARAH	BUDI	AHMAD	YANTO
HADI	SANTI	FEBRI	DANI
NANA	YANI		BAYU
TONI	RATIH		INDAH
	JONO		BAMBANG
	RAMA		
	DENI		

Row No.	NAMA	cluster ↑	B.IND	B.ING	MTK	IPA
4	DYAH	cluster_0	9.199	8.535	5.636	9.913
17	RISA	cluster_0	8.360	7.114	5.903	6.646
18	RANI	cluster_0	9.234	7.780	7.745	7.463
23	SARAH	cluster_0	9.123	9.154	7.832	8.667
26	HADI	cluster_0	9.327	6.514	6.070	7.405
27	NANA	cluster_0	8.033	9.926	7.299	8.730
30	TONI	cluster_0	9.989	7.684	7.576	7.562

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Row No.	NAMA	cluster ↑	B.IND	B.ING	MTK	IPA
1	JOKO	cluster_1	9.870	7.013	9.335	9.030
7	EKO	cluster_1	8.238	8.530	9.623	8.614
9	WAWAN	cluster_1	7.694	6.571	9.620	7.455
11	BUDI	cluster_1	7.723	6.431	9.872	7.789
12	SANTI	cluster_1	6.949	8.014	8.319	9.119
19	YANI	cluster_1	8.145	7.562	9.123	9.479
20	RATIH	cluster_1	6.784	9.865	8.189	7.996
22	JONO	cluster_1	5.923	8.446	8.879	8.653
24	RAMA	cluster_1	7.684	9.241	9.490	9.956
29	DENI	cluster_1	5.934	7.118	9.139	8.306

6	IKA	cluster_2	5.973	7.648	6.570	6.024
10	MAHMUD	cluster_2	7.628	7.505	9.865	5.524
13	DIAN	cluster_2	6.419	6.762	7.938	5.598
15	AHMAD	cluster_2	8.648	5.751	7.591	5.427
28	FEBRI	cluster_2	5.495	9.311	6.794	5.140

2	AGUS	cluster_3	5.482	6.176	6.952	8.313
3	SUSI	cluster_3	6.980	5.541	5.704	9.352
5	WATI	cluster_3	7.807	6.151	5.842	7.351
8	YANTO	cluster_3	7.225	6.007	6.663	9.270
14	DANI	cluster_3	7.356	6.496	7.805	8.364
16	BAYU	cluster_3	5.477	5.461	6.175	7.544
21	INDAH	cluster_3	5.164	7.652	5.017	6.626
25	BAMBANG	cluster_3	5.840	5.311	6.198	8.774