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1 C:\Users\Crystina\AppData\Local\Programs\Python\
  Python35\python.exe "D:/PycharmProjects/FYP/
  2_feature_extraction/sougo_word_kmeans.py"
2 200
3 extracting tf-idf feature...
4 Performance with 3 cluster:
5     silhouette_score: 0.2005129921270826
6     calinski_harabaz_score: 17.874477483710937
7 Performance with 4 cluster:
8     silhouette_score: 0.20846750515838205
9     calinski_harabaz_score: 12.783356298238685
10 Performance with 5 cluster:
11     silhouette_score: 0.21117837458774624
12     calinski_harabaz_score: 10.246656461623072
13 Performance with 6 cluster:
14     silhouette_score: 0.21097471724369077
15     calinski_harabaz_score: 8.50705641591463
16 Performance with 7 cluster:
17     silhouette_score: 0.2121785763090338
18     calinski_harabaz_score: 7.359086780628181
19 Performance with 8 cluster:
20     silhouette_score: 0.2083640567131139
21     calinski_harabaz_score: 6.524608513191569
22 Performance with 9 cluster:
23     silhouette_score: 0.2143683472936715
24     calinski_harabaz_score: 5.982759134156017
25 Performance with 10 cluster:
26     silhouette_score: 0.21576484961032158
27     calinski_harabaz_score: 5.500892302729172
28 Performance with 11 cluster:
29     silhouette_score: 0.2159589709480497
30     calinski_harabaz_score: 5.1137923847042375
31 Performance with 12 cluster:
32     silhouette_score: 0.2197048605963247
33     calinski_harabaz_score: 4.906625947895798
34 Performance with 13 cluster:
35     silhouette_score: 0.21848230275690306
36     calinski_harabaz_score: 4.537503007364862
37 Performance with 14 cluster:
38     silhouette_score: 0.21626023006021072
39     calinski_harabaz_score: 4.399839833879893
40 Performance with 15 cluster:
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41     silhouette_score: 0.22042590780874055
42     calinski_harabaz_score: 4.208040338346233
43 Performance with 16 cluster:
44     silhouette_score: 0.21685462496983082
45     calinski_harabaz_score: 4.040354486732023
46 Performance with 17 cluster:
47     silhouette_score: 0.21380381714808755
48     calinski_harabaz_score: 3.892331027817332
49 Performance with 18 cluster:
50     silhouette_score: 0.21330351726854424
51     calinski_harabaz_score: 3.691753180970353
52 Performance with 19 cluster:
53     silhouette_score: 0.21632418317541546
54     calinski_harabaz_score: 3.6478853092547205
55 Performance with 20 cluster:
56     silhouette_score: 0.22018188866484606
57     calinski_harabaz_score: 3.549396370846139
58 Performance with 21 cluster:
59     silhouette_score: 0.21518183277883046
60     calinski_harabaz_score: 3.4558250951106193
61 Performance with 22 cluster:
62     silhouette_score: 0.21551230716180358
63     calinski_harabaz_score: 3.3772225108646614
64 Performance with 23 cluster:
65     silhouette_score: 0.2223392874226973
66     calinski_harabaz_score: 3.308278271910004
67 Performance with 24 cluster:
68     silhouette_score: 0.21412715348556322
69     calinski_harabaz_score: 3.230249349681902
70 Performance with 25 cluster:
71     silhouette_score: 0.21534668927171338
72     calinski_harabaz_score: 3.1748239481983265
73 Performance with 26 cluster:
74     silhouette_score: 0.21580169512524155
75     calinski_harabaz_score: 3.1238712673713422
76 Performance with 27 cluster:
77     silhouette_score: 0.21381152032133982
78     calinski_harabaz_score: 3.067639581116195
79 Performance with 28 cluster:
80     silhouette_score: 0.21432883976718753
81     calinski_harabaz_score: 3.0244741267343493
82 Performance with 29 cluster:
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83     silhouette_score: 0.21701370941135942
84     calinski_harabaz_score: 2.981613874094329
85 Performance with 30 cluster:
86     silhouette_score: 0.22156893224575988
87     calinski_harabaz_score: 2.949400486611726
88 Performance with 31 cluster:
89     silhouette_score: 0.21465155829574709
90     calinski_harabaz_score: 2.9092488681333912
91 Performance with 32 cluster:
92     silhouette_score: 0.22135359033043714
93     calinski_harabaz_score: 2.875750478591507
94 Performance with 33 cluster:
95     silhouette_score: 0.21514628971364153
96     calinski_harabaz_score: 2.852021039337391
97 Performance with 34 cluster:
98     silhouette_score: 0.2207785568843276
99     calinski_harabaz_score: 2.823875302155509
100 Performance with 35 cluster:
101     silhouette_score: 0.2177222555429588
102     calinski_harabaz_score: 2.791833455116143
103 Performance with 36 cluster:
104     silhouette_score: 0.21531734364052135
105     calinski_harabaz_score: 2.7683454425657046
106 Performance with 37 cluster:
107     silhouette_score: 0.21638331966441604
108     calinski_harabaz_score: 2.7453094755088157
109 Performance with 38 cluster:
110     silhouette_score: 0.21574818926322947
111     calinski_harabaz_score: 2.72609738662267
112 Performance with 39 cluster:
113     silhouette_score: 0.21495201889420762
114     calinski_harabaz_score: 2.706857458909537
115 Performance with 40 cluster:
116     silhouette_score: 0.2162562213797475
117     calinski_harabaz_score: 2.685847530344192
118 Performance with 41 cluster:
119     silhouette_score: 0.2162493251094366
120     calinski_harabaz_score: 2.6766483534420633
121 Performance with 42 cluster:
122     silhouette_score: 0.21854633910340163
123     calinski_harabaz_score: 2.6613487109248433
124 Performance with 43 cluster:
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125     silhouette_score: 0.21917373303059398
126     calinski_harabaz_score: 2.6531525272926237
127 Performance with 44 cluster:
128     silhouette_score: 0.2178618040963383
129     calinski_harabaz_score: 2.636156858338264
130 Performance with 45 cluster:
131     silhouette_score: 0.21843558963434667
132     calinski_harabaz_score: 2.6227738964593117
133 Performance with 46 cluster:
134     silhouette_score: 0.21911206821007304
135     calinski_harabaz_score: 2.6172974002950053
136 Performance with 47 cluster:
137     silhouette_score: 0.22015429251661509
138     calinski_harabaz_score: 2.607835948208496
139 Performance with 48 cluster:
140     silhouette_score: 0.21868273626206153
141     calinski_harabaz_score: 2.5985460391137694
142 Performance with 49 cluster:
143     silhouette_score: 0.21971579874260538
144     calinski_harabaz_score: 2.5919919111902474
145
146 Process finished with exit code 0
147
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