

TABLE IV
THE RESULTS OF ACCESS TIME RATIO
IMAGE QUERY AND IMAGE QUERY WITH CLUSTER

Run Test	Ratio of Access Time IQ : IQC		
	2 Cluster	4 Cluster	8 Cluster
01	2.831	5.370	9.248
02	2.811	5.334	9.185
03	2.784	5.293	9.112
04	2.615	5.288	9.101
05	2.771	5.289	9.107
06	2.781	5.296	9.120
07	2.795	5.292	9.118
08	2.807	5.293	9.112
09	2.807	5.288	9.115
10	2.802	5.239	9.102
Minimum	2.615	5.239	9.101
Average	2.781	5.298	9.132
Maximum	2.831	5.370	9.248

A comparison of the access times of image query and image query with cluster showed that the greater the size of formed cluster, the higher the speed of needed access time. The ratio of average time access of image query to image query with cluster for 2 clusters was 2.781 or, in the other words, there was an increase of access time by 2.781 when the access used 2 clusters as compared to that of image query. For 4 and 8 clusters there occurred an increase of access time by averagely 5.298 times and 9.132 times, respectively.

VI. CONCLUSION

1. The image database record clustering used in this research was conducted based on the computation of minimum and maximum PSNR values of each image database record by using basic image.
2. The results of 10 times of testing on image query in image database by using records that was taken randomly by an amount of 4,000 showed that the average access time was 694.463 ms. The results of testing by using image query

with cluster for 2, 4, and 8 clusters were 249.864 ms, 131.074 ms, and 76.048 ms, respectively.

3. The ratio of the access time of image query to image query with cluster by using 2, 4, and 8 clusters showed significant increases in access time, that is, 3 times, 5 times, and 9 times for 2, 4, and 8 clusters, respectively.

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