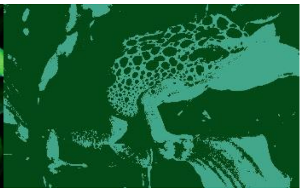
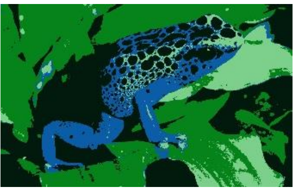
CMPE537 ASSIGNMENT1

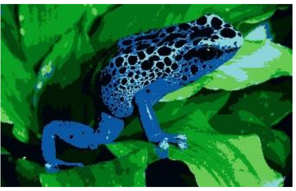
Original



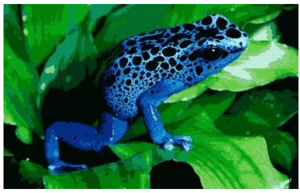
K = 2(clicked)



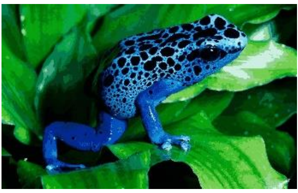
K = 4(clicked)



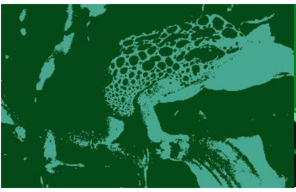
K = 8(clicked)



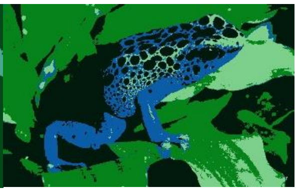
K = 16(clicked)



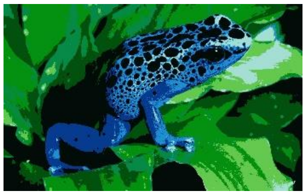
K = 32(clicked)



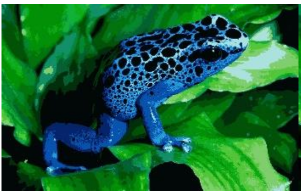
K = 2(random)



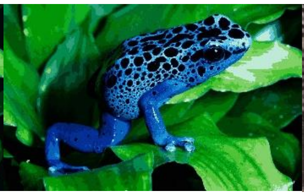
K = 4(random)



K = 8(random)

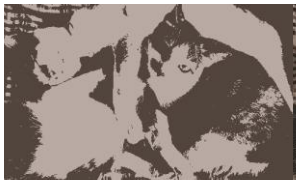


K = 16(random)

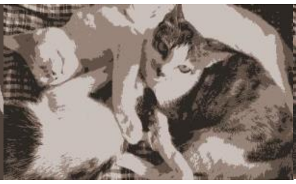


K = 32(random)

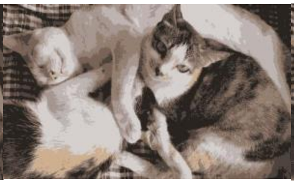
Original



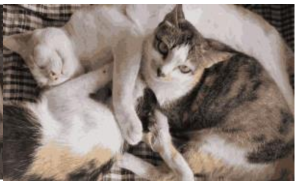
K = 2(clicked)



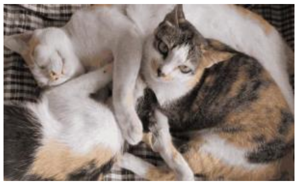
K = 4(clicked)



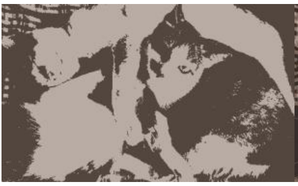
K = 8(clicked)



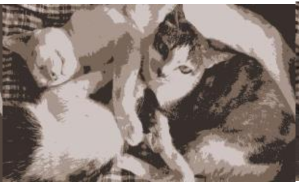
K = 16(clicked)



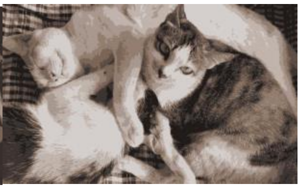
K = 32(clicked)



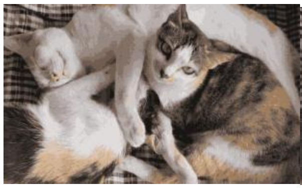
K = 2(random)



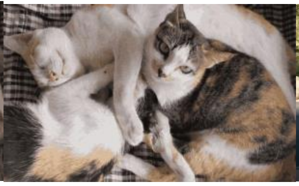
K = 4(random)



K = 8(random)

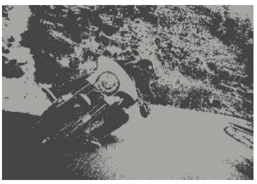


K = 16(random)

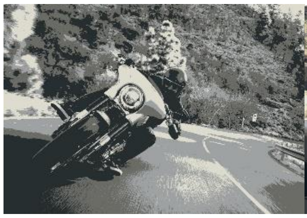


K = 32(random)

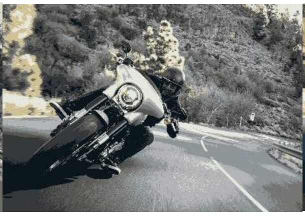
Original



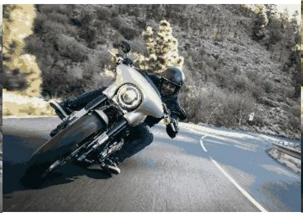
K = 2(clicked)



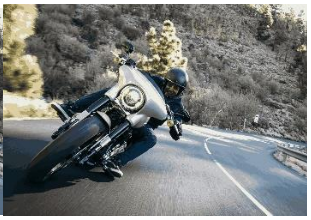
K = 4(clicked)



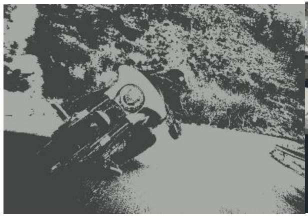
K = 8(clicked)



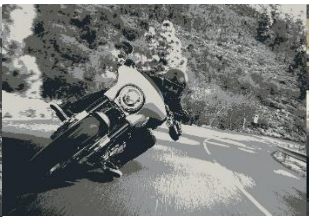
K = 16(clicked)



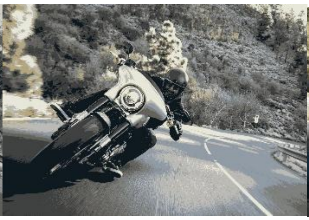
K = 32(clicked)



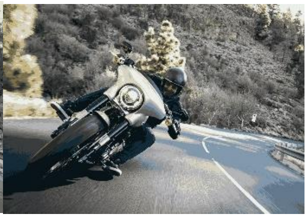
K = 2(random)



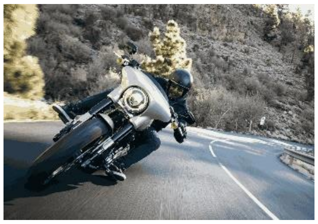
K = 4(random)



K = 8(random)



K = 16(random)



K = 32(random)

How To Run: python main.py <path of image> <K> <mode>

Mode : 0 for clicking 1 for random

Ex: python main.py 3.jpg 2 1

Description: Quantize function gets the points first and their rgb values are stored in an array(cluster_rgbs). Points are determined by the mode. If mode is 0, then points are determined by clicking. Otherwise, the points are found randomly. Pixel_values store the rgb values of every pixel in image. Cluster_rgbs store the rgb values of each cluster. Then for each cluster, the color distance from the image pixel is found and the closest cluster is assigned to that pixel. Cluster_ids store the closest cluster. Then, the sum of rgb values in each cluster is found and cluster rgbs are updated. This process is repeated for 10 times in total. Then the image is formed from the array and saved.

Comment: As the K value gets bigger, the colors get more distinctive and image looks more like the original picture. In random point selection, the bias is decreased at first iteration. But since the iteration runs for 10 times, the rgb values change and the point selection doesn’t really make much difference.

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