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~~Soal~~

Tugas Kita

Soal Nomor 3.

Buat index setiap pixel berdasar Color palette

213, 80, 155	24, 60, 122	212, 9, 19
211, 200, 155	158, 155, 194	8, 8, 100
213, 222, 12	15, 25, 155	143, 100, 123

Color palette :

→ Warna hitam (0) = (RGB : 0, 0, 0)

→ Warna merah (1) = (RGB : 255, 0, 0)

→ Warna Hijau (2) = (RGB : 0, 255, 0)

→ Warna Biru (3) = (RGB : 0, 0, 255)

① Pixel (1,1) = (213, 80, 155)

$$\begin{aligned}\rightarrow \text{Hitam (0)} &= \sqrt{(213-0)^2 + (80-0)^2 + (155-0)^2} \\ &= \sqrt{45369 + 6400 + 24025} \\ &= \sqrt{75794} \\ &= 275,30\end{aligned}$$

$$\begin{aligned}\rightarrow \text{Merah (1)} &= \sqrt{(213-255)^2 + (80-0)^2 + (155-0)^2} \\ &= \sqrt{1764 + 6400 + 24025} \\ &= \sqrt{32189} \\ &= 179,41\end{aligned}$$

$$\begin{aligned}\rightarrow \text{Hijau (2)} &= \sqrt{(213-0)^2 + (80-255)^2 + (155-0)^2} \\ &= \sqrt{45369 + 30625 + 24025} \\ &= \sqrt{100019} \\ &= 316,25\end{aligned}$$

$$\begin{aligned}\rightarrow \text{Biru (3)} &= \sqrt{(213-0)^2 + (80-0)^2 + (155-255)^2} \\ &= \sqrt{45369 + 6400 + 10000} \\ &= \sqrt{61769} \\ &= 248,53\end{aligned}$$

$$\textcircled{2} \text{ Pixel } (1,2) = (24, 60, 122)$$

$$\begin{aligned} \Rightarrow \text{Hitam } (0) &= \sqrt{(24-0)^2 + (60-0)^2 + (122-0)^2} \\ &= \sqrt{576 + 3600 + 14884} \\ &= \sqrt{19060} \\ &= 138,05 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Merah } (1) &= \sqrt{(24-255)^2 + (60-0)^2 + (122-0)^2} \\ &= \sqrt{53361 + 3600 + 14884} \\ &= \sqrt{71845} \\ &= 268,03 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Hijau } (2) &= \sqrt{(24-0)^2 + (60-255)^2 + (122-0)^2} \\ &= \sqrt{576 + 38025 + 14884} \\ &= \sqrt{53485} \\ &= 231,26 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Biru } (3) &= \sqrt{(24-0)^2 + (60-0)^2 + (122-255)^2} \\ &= \sqrt{576 + 3600 + 17689} \\ &= \sqrt{21865} \\ &= 147,86 \end{aligned}$$

$$\textcircled{3} \text{ Pixel } (1,3) = (212, 9, 19)$$

$$\begin{aligned} \Rightarrow \text{Hitam } (0) &= \sqrt{(212-0)^2 + (9-0)^2 + (19-0)^2} \\ &= \sqrt{44944 + 81 + 361} \\ &= \sqrt{45386} \\ &= 213,03 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Merah } (1) &= \sqrt{(212-255)^2 + (9-0)^2 + (19-0)^2} \\ &= \sqrt{1849 + 81 + 361} \\ &= \sqrt{2291} \\ &= 47,85 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Hijau } (2) &= \sqrt{(212-0)^2 + (9-255)^2 + (19-0)^2} \\ &= \sqrt{44944 + 60516 + 361} \\ &= \sqrt{105821} \\ &= 325,31 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Biru } (3) &= \sqrt{(212-0)^2 + (9-0)^2 + (19-255)^2} \\ &= \sqrt{44944 + 81 + 55696} \\ &= \sqrt{100721} \\ &= 317,36 \end{aligned}$$

④ Pixel (2,1) = (211, 200, 155)

$$\begin{aligned}\Rightarrow \text{Hitam (0)} &= \sqrt{(211-0)^2 + (200-0)^2 + (155-0)^2} \\ &= \sqrt{44521 + 40000 + 24025} \\ &= \sqrt{108546} \\ &= 329,47\end{aligned}$$

$$\begin{aligned}\Rightarrow \text{Merah (1)} &= \sqrt{(211-255)^2 + (200-0)^2 + (155-0)^2} \\ &= \sqrt{1936 + 40000 + 24025} \\ &= \sqrt{65961} \\ &= 256,84\end{aligned}$$

$$\begin{aligned}\Rightarrow \text{Hijau (2)} &= \sqrt{(211-0)^2 + (200-255)^2 + (155-0)^2} \\ &= \sqrt{44521 + 3025 + 24025} \\ &= \sqrt{71571} \\ &= 267,53\end{aligned}$$

$$\begin{aligned}\Rightarrow \text{Biru (3)} &= \sqrt{(211-0)^2 + (200-0)^2 + (155-255)^2} \\ &= \sqrt{44521 + 40000 + 10000} \\ &= \sqrt{94521} \\ &= 307,47\end{aligned}$$

⑤ Pixel (2,2) = (153, 155, 154)

$$\begin{aligned}\Rightarrow \text{Hitam (0)} &= \sqrt{(153-0)^2 + (155-0)^2 + (154-0)^2} \\ &= \sqrt{23409 + 24025 + 23716} \\ &= \sqrt{71150} \\ &= 266,80\end{aligned}$$

$$\begin{aligned}\Rightarrow \text{Merah (1)} &= \sqrt{(153-255)^2 + (155-0)^2 + (154-0)^2} \\ &= \sqrt{10404 + 24025 + 23716} \\ &= \sqrt{58145} \\ &= 241,15\end{aligned}$$

$$\begin{aligned}\Rightarrow \text{Hijau (2)} &= \sqrt{(153-0)^2 + (155-255)^2 + (154-0)^2} \\ &= \sqrt{23409 + 10000 + 23716} \\ &= \sqrt{57125} \\ &= 240\end{aligned}$$

$$\begin{aligned}\Rightarrow \text{Biru (3)} &= \sqrt{(153-0)^2 + (155-0)^2 + (154-255)^2} \\ &= \sqrt{23409 + 24025 + 10201} \\ &= \sqrt{57635} \\ &= 240,2\end{aligned}$$

$$\textcircled{6} \text{ Pixel } (2,3) = (8, 8, 100)$$

$$\begin{aligned} \Rightarrow \text{Hitam } (0) &= \sqrt{(8-0)^2 + (8-0)^2 + (100-0)^2} \\ &= \sqrt{64 + 64 + 10000} \\ &= \sqrt{10128} \\ &= 100,64 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Merah } (1) &= \sqrt{(8-255)^2 + (8-0)^2 + (100-0)^2} \\ &= \sqrt{61009 + 64 + 10000} \\ &= \sqrt{71073} \\ &= 266,59 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Hijau } (2) &= \sqrt{(8-0)^2 + (8-255)^2 + (100-0)^2} \\ &= \sqrt{64 + 61009 + 10000} \\ &= \sqrt{71073} \\ &= 266,59 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Biru } (3) &= \sqrt{(8-0)^2 + (8-0)^2 + (100-255)^2} \\ &= \sqrt{64 + 64 + 24025} \\ &= \sqrt{24153} \\ &= 155,43 \end{aligned}$$

$$\textcircled{7} \text{ pixel } (3,1) = (213, 222, 12)$$

$$\begin{aligned} \Rightarrow \text{Hitam } (0) &= \sqrt{(213-0)^2 + (222-0)^2 + (12-0)^2} \\ &= \sqrt{45369 + 49284 + 144} \\ &= \sqrt{94797} \\ &= 307,90 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Merah } (1) &= \sqrt{(213-255)^2 + (222-0)^2 + (12-0)^2} \\ &= \sqrt{1764 + 49284 + 144} \\ &= \sqrt{51192} \\ &= 226,27 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Hijau } (2) &= \sqrt{(213-0)^2 + (222-255)^2 + (12-0)^2} \\ &= \sqrt{45369 + 1089 + 144} \\ &= \sqrt{46602} \\ &= 215,87 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Biru } (3) &= \sqrt{(213-0)^2 + (222-0)^2 + (12-255)^2} \\ &= \sqrt{45369 + 49284 + 59049} \\ &= \sqrt{153702} \\ &= 392,05 \end{aligned}$$

$$\textcircled{8} \text{ Pixel } (3,2) = (15, 25, 155)$$

$$\begin{aligned} \Rightarrow \text{Hitam (0)} &= \sqrt{(15-0)^2 + (25-0)^2 + (155-0)^2} \\ &= \sqrt{225 + 625 + 24025} \\ &= \sqrt{24875} \\ &= 157,73 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Merah (1)} &= \sqrt{(15-255)^2 + (25-0)^2 + (155-0)^2} \\ &= \sqrt{57600 + 625 + 24025} \\ &= \sqrt{82250} \\ &= 286,80 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Hijau (2)} &= \sqrt{(15-0)^2 + (25-255)^2 + (155-0)^2} \\ &= \sqrt{225 + 52900 + 24025} \\ &= \sqrt{77150} \\ &= 277,74 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Biru (3)} &= \sqrt{(15-0)^2 + (25-0)^2 + (155-255)^2} \\ &= \sqrt{225 + 625 + 10000} \\ &= \sqrt{10850} \\ &= 104,17 \end{aligned}$$

$$\textcircled{9} \text{ pixel } (3,3) = (143, 100, 123)$$

$$\begin{aligned} \Rightarrow \text{Hitam (0)} &= \sqrt{(143-0)^2 + (100-0)^2 + (123-0)^2} \\ &= \sqrt{20449 + 10000 + 15129} \\ &= \sqrt{45578} \\ &= 213,50 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Merah (1)} &= \sqrt{(143-255)^2 + (100-0)^2 + (123-0)^2} \\ &= \sqrt{12544 + 10000 + 15129} \\ &= \sqrt{37673} \\ &= 194,10 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Hijau (2)} &= \sqrt{(143-0)^2 + (100-255)^2 + (123-0)^2} \\ &= \sqrt{20449 + 24025 + 15129} \\ &= \sqrt{59603} \\ &= 244,15 \end{aligned}$$

$$\begin{aligned} \Rightarrow \text{Biru (3)} &= \sqrt{(143-0)^2 + (100-0)^2 + (123-255)^2} \\ &= \sqrt{20449 + 10000 + 17424} \\ &= \sqrt{47873} \\ &= 218,83 \end{aligned}$$