

ESDI / UERJ

COR e Estruturas Bidimensionais

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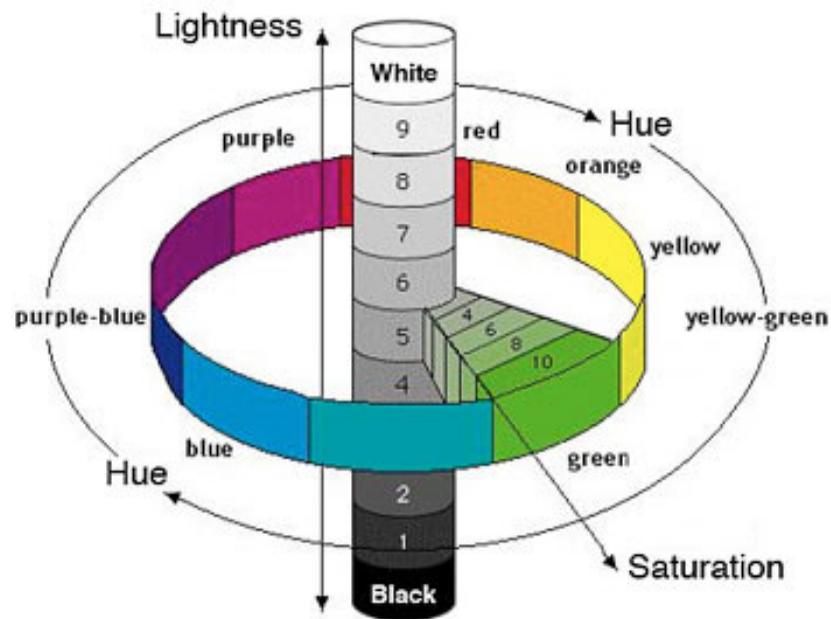
HSB

(muito semelhante ao sistema Munsell)

H = matiz (*Hue*): é a cor pura, baseada nas primárias e secundárias. Medida em graus

S = saturação (*Saturation*): variando a saturação, a cor vai ficando menos intensa e tornando-se acinzentada. Medida em porcentagem.

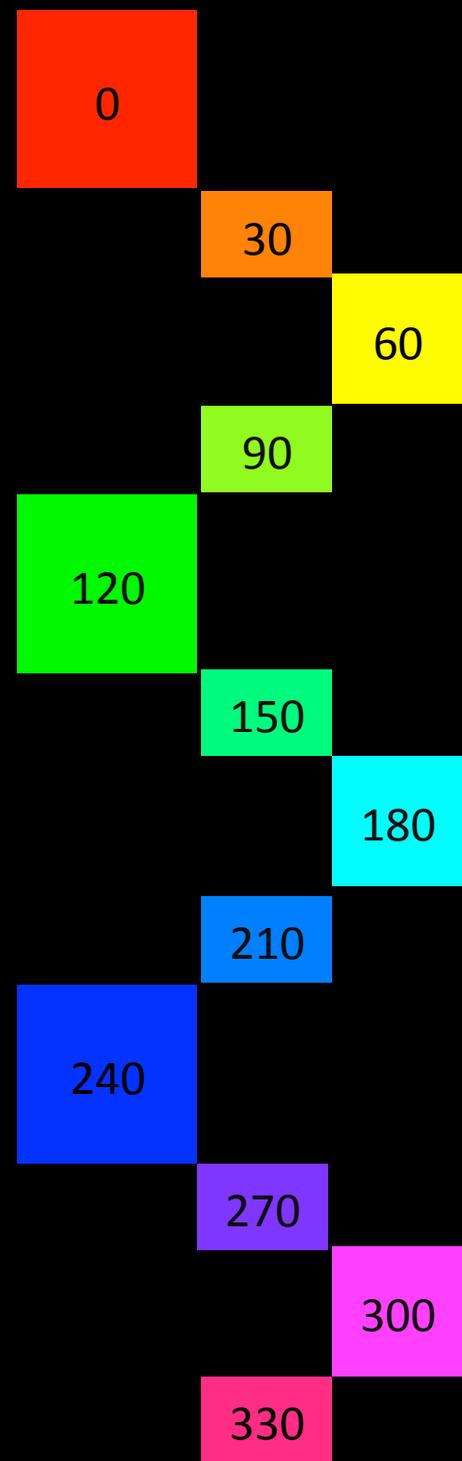
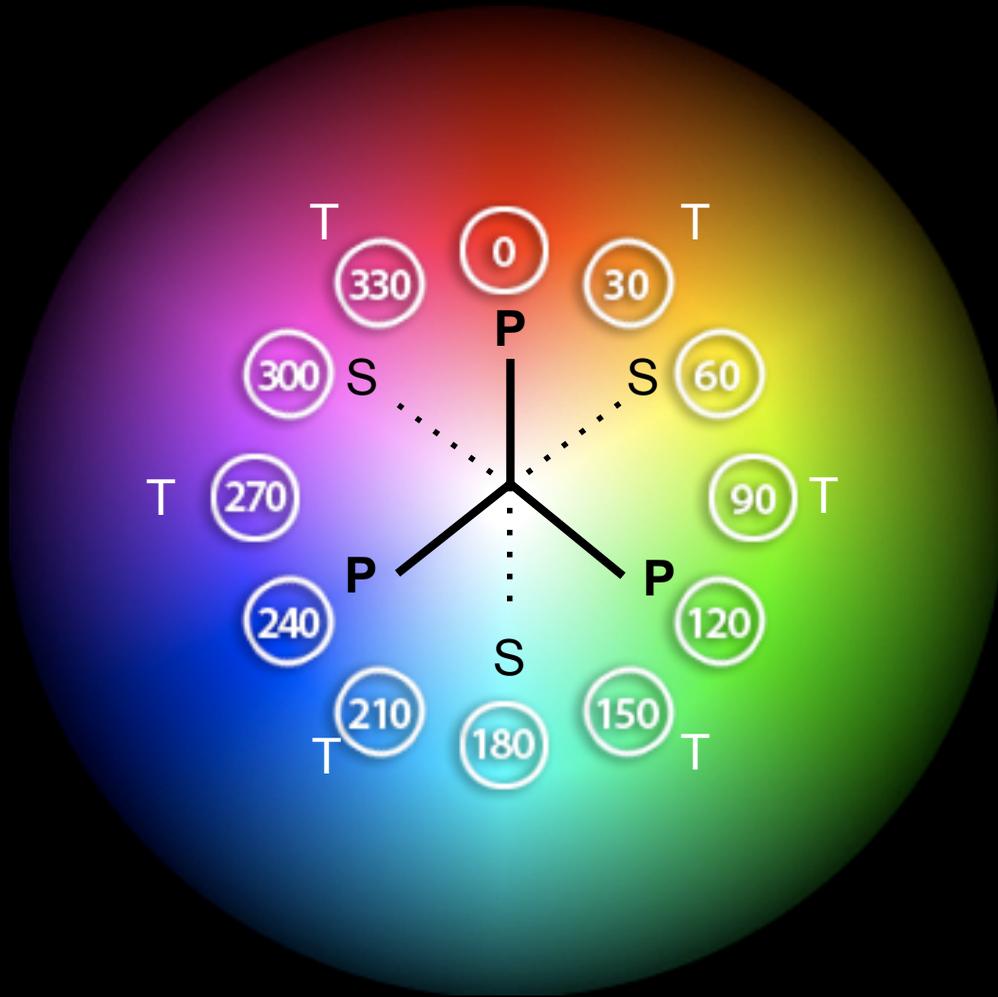
B = brilho (*Brightness*): é a luminosidade da cor, comparada a uma escala do branco ao preto. Medida em porcentagem.

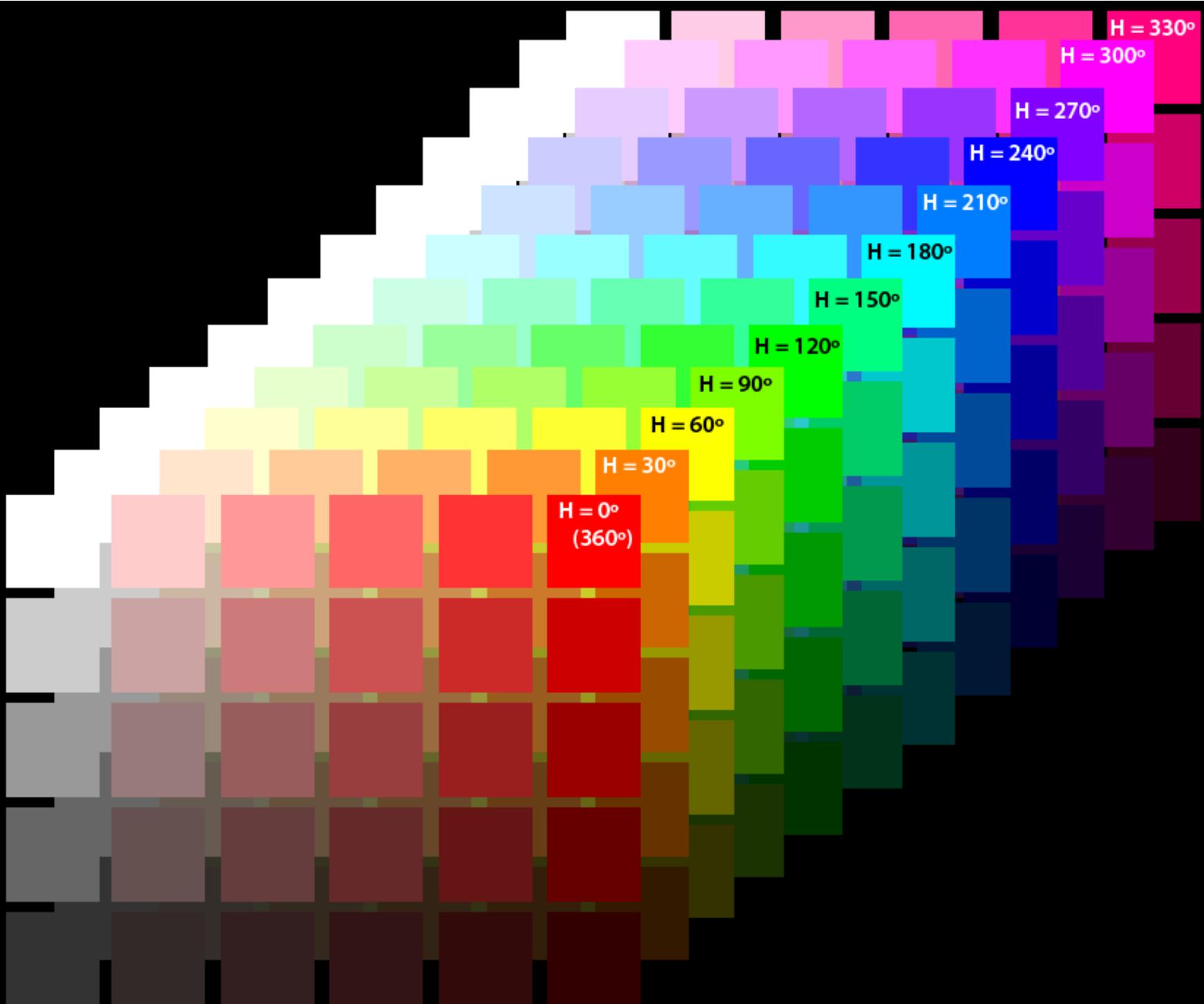


Hue: - color, tone and shade
- changes around the color wheel

Lightness: - light and dark colors
- changes vertically

Saturation: - vivid and dull colors
- changes horizontally

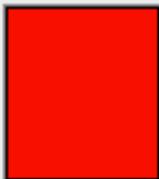




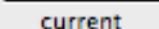
Color Picker (Foreground Color)



new



current



OK

Cancel

Add To Swatches

Color Libraries

H: °

S: %

B: %

R:

G:

B:

#

L:

a:

b:

C: %

M: %

Y: %

K: %

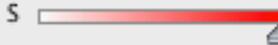
Only Web Colors

Color X Swatches Styles



H  0 °



S  99 %



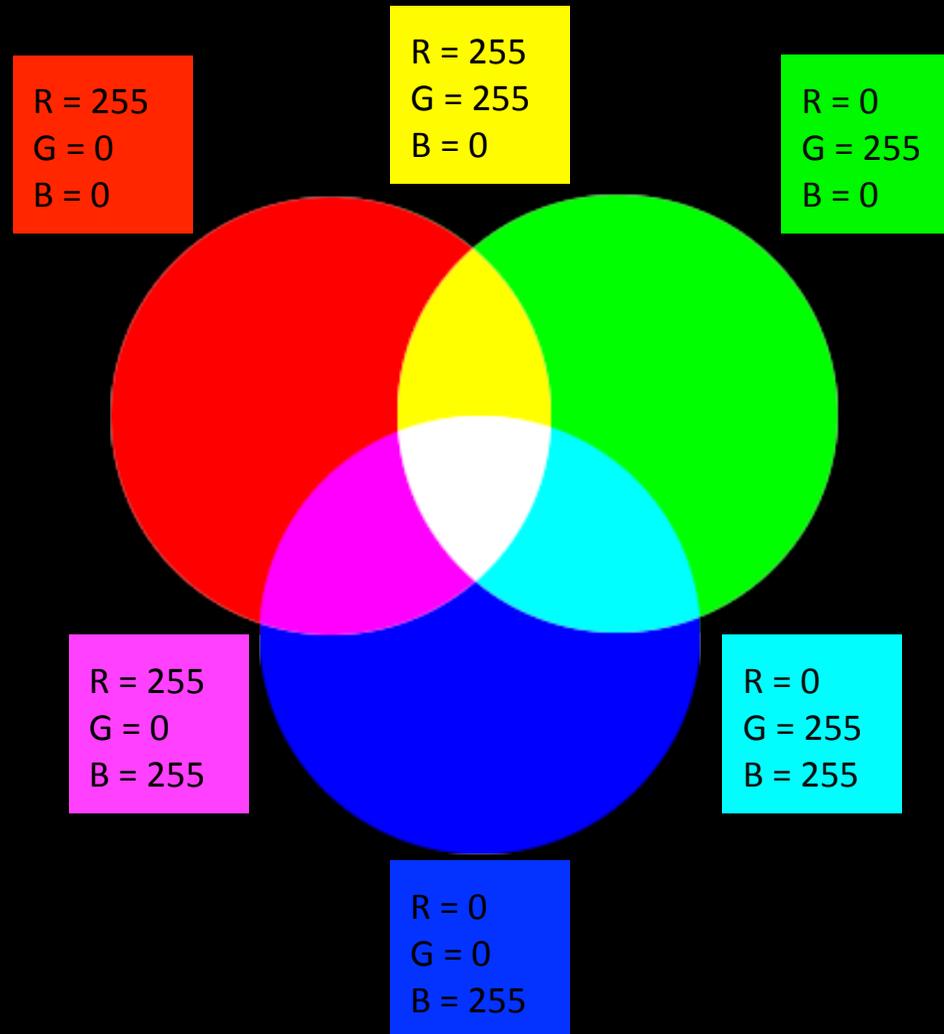
B  99 %



Hist Layers X Inets Paths tions

RGB

As cores são compostas por uma combinação de três valores, um para cada canal (R, G e B)
Esses valores vão 0 (sem cor) a 255.



R 255
G 237
B 237



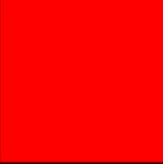
R 255
G 192
B 192



R 255
G 102
B 102



R 255
G 0
B 0



R 153
G 0
B 0



R 51
G 0
B 0



R 255
G 237
B 237



R 237
G 255
B 237



R 237
G 237
B 255



R 255
G 192
B 192



R 192
G 255
B 192



R 192
G 192
B 255



R 255
G 102
B 102



R 102
G 255
B 102



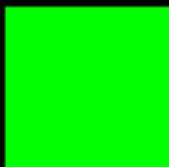
R 102
G 102
B 255



R 255
G 0
B 0



R 0
G 255
B 0



R 0
G 0
B 255



R 153
G 0
B 0



R 0
G 153
B 0



R 0
G 0
B 153



R 51
G 0
B 0



R 0
G 51
B 0



R 0
G 0
B 51



R 255
G 237
B 237



R 255
G 255
B 237



R 237
G 255
B 237



R 237
G 255
B 255



R 237
G 237
B 255



R 255
G 237
B 255



R 255
G 192
B 192



R 255
G 255
B 192



R 192
G 255
B 192



R 192
G 255
B 255



R 192
G 192
B 255



R 255
G 192
B 255



R 255
G 102
B 102



R 255
G 255
B 102



R 102
G 255
B 102



R 102
G 255
B 255



R 102
G 102
B 255



R 255
G 102
B 255



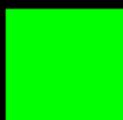
R 255
G 0
B 0



R 255
G 255
B 0



R 0
G 255
B 0



R 0
G 255
B 255



R 0
G 0
B 255



R 255
G 0
B 255



R 153
G 0
B 0



R 153
G 153
B 0



R 0
G 153
B 0



R 0
G 153
B 153



R 0
G 0
B 153



R 153
G 0
B 153



R 51
G 0
B 0



R 51
G 51
B 0



R 0
G 51
B 0



R 0
G 51
B 51



R 0
G 0
B 51

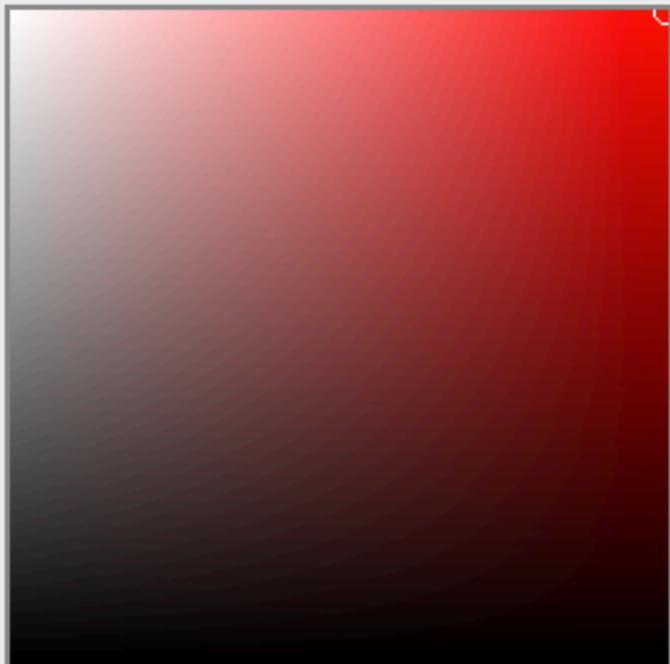


R 51
G 0
B 51

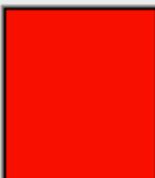


| | | | | | | | | | | | |
|--|-------------------------|-------------------------|-------------------------|--|-------------------------|-------------------------|-------------------------|--|-------------------------|-------------------------|-------------------------|
| R 255 G 237 B 237 | R 255 G 247 B 237 | R 255 G 255 B 237 | R 247 G 255 B 237 | R 237 G 255 B 237 | R 237 G 255 B 247 | R 237 G 255 B 255 | R 237 G 247 B 255 | R 237 G 237 B 255 | R 247 G 237 B 255 | R 255 G 237 B 255 | R 255 G 237 B 247 |
| R 255 G 192 B 192 | R 255 G 217 B 192 | R 255 G 255 B 192 | R 217 G 255 B 192 | R 192 G 255 B 192 | R 192 G 255 B 217 | R 192 G 255 B 255 | R 192 G 255 B 192 | R 192 G 192 B 255 | R 217 G 192 B 255 | R 255 G 192 B 255 | R 192 G 192 B 217 |
| R 255 G 102 B 102 | R 255 G 153 B 102 | R 255 G 255 B 102 | R 153 G 255 B 102 | R 102 G 255 B 102 | R 102 G 255 B 153 | R 102 G 255 B 255 | R 102 G 255 B 102 | R 102 G 102 B 255 | R 153 G 102 B 255 | R 255 G 102 B 255 | R 102 G 102 B 153 |
| R 255 G 0 B 0 | R 255 G 128 B 0 | R 255 G 255 B 0 | R 128 G 255 B 0 | R 0 G 255 B 0 | R 0 G 255 B 128 | R 0 G 255 B 255 | R 0 G 255 B 0 | R 0 G 0 B 255 | R 128 G 0 B 255 | R 255 G 0 B 255 | R 0 G 0 B 128 |
| R 153 G 0 B 0 | R 153 G 77 B 0 | R 153 G 153 B 0 | R 77 G 153 B 0 | R 0 G 153 B 0 | R 0 G 153 B 77 | R 0 G 153 B 153 | R 0 G 153 B 0 | R 0 G 0 B 153 | R 77 G 0 B 153 | R 153 G 0 B 153 | R 0 G 0 B 77 |
| R 51 G 0 B 0 | R 51 G 26 B 0 | R 51 G 51 B 0 | R 51 G 51 B 0 | R 0 G 51 B 0 | R 0 G 51 B 26 | R 0 G 51 B 51 | R 0 G 51 B 0 | R 0 G 0 B 51 | R 26 G 0 B 51 | R 51 G 0 B 51 | R 0 G 0 B 26 |

Color Picker (Foreground Color)



new



current



OK

Cancel

Add To Swatches

Color Libraries

H: 360 °

S: 100 %

B: 100 %

R: 255

G: 0

B: 0

ff0000

L: 54

a: 81

b: 70

C: 0 %

M: 99 %

Y: 100 %

K: 0 %

Only Web Colors

Color X Swatches Styles

H 0 °

S 99 %

B 99 %

Hist Layers X Inets Paths Tions

profundidade de cor e profundidade de bit

bit = unidade básica de informação computacional.
Dois valores apenas: 0 ou 1

pixel = unidade básica de construção de
imagens rasterizadas

bits por pixel = quantidade de bits usados para
descrever a cor de um pixel, em uma imagem

profundidade de cor

bpp = bits por pixel

cores
indexadas
em tabela

1 bpp = 2 valores apenas (0 ou 1) = 2^1

2 bpp = 4 valores (00, 01, 10, 11) = 2^2

3 bpp = 8 valores (000, 001, 010...111) = 2^3

4 bpp = 16 valores (0000, 0001...1111) = 2^4

5 bpp = 32 valores = 2^5

6 bpp = 64 valores = 2^6

7 bpp = 128 valores = 2^7

8 bpp = 256 valores = 2^8

composição
RGB direta

16 bpp = 65.536 valores = 2^{16}

24 bpp = 16.777.216 valores = 2^{24}

32 bpp = 4.294.967.296 valores = 2^{32}

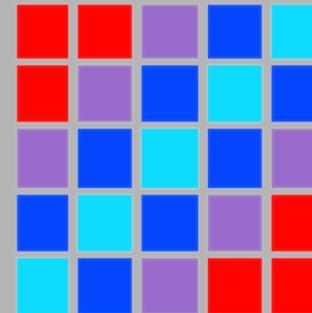
profundidade de cor

bpp = bits por pixel

cores indexadas em tabela

0 = 
1 = 
2 = 
3 = 

| | | | | |
|---|---|---|---|---|
| 0 | 0 | 1 | 2 | 3 |
| 0 | 1 | 2 | 3 | 2 |
| 1 | 2 | 3 | 2 | 1 |
| 2 | 3 | 2 | 1 | 0 |
| 3 | 2 | 1 | 0 | 0 |





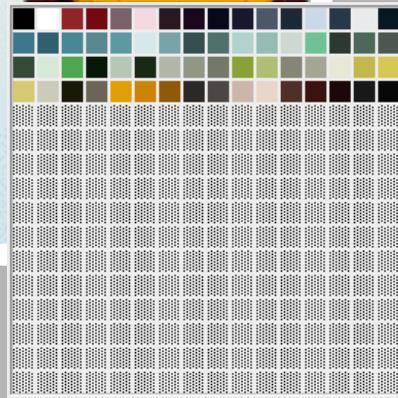
24 bpp (16.777.216 cores) ('true color')



8 bpp (256 cores)



6 bpp (64 cores)





5 bpp (32 cores)



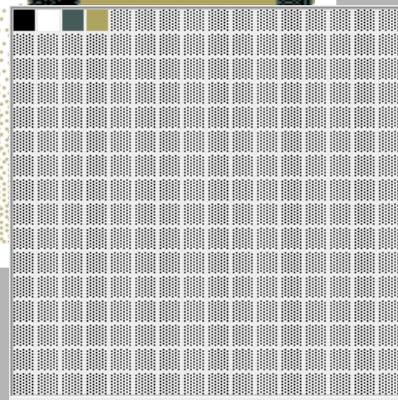
4 bpp (16 cores)



3 bpp (8 cores)

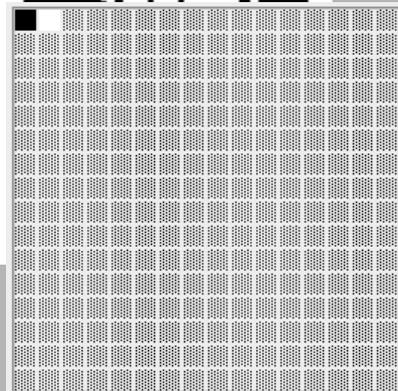


2 bpp (4 cores)





1 bpp (2 cores)



profundidade de cor

bits por canal

imagens com 8 bits por canal $2^8R \ 2^8G \ 2^8B + 2^8A$
256 valores para cada canal (R, G, B e Alfa)

sem alfa 24 bpp = 16.777.216 valores por pixel = 2^{24} , $2^8R \ 2^8G \ 2^8B$

com alfa 32 bpp = 4.294.967.296 valores por pixel = 2^{32} $2^8A \ 2^8R \ 2^8G \ 2^8B$

imagens com 16 bits por canal = $2^{16}R \ 2^{16}G \ 2^{16}B + 2^{16}A$
65.536 valores para cada canal (R, G, B e Alfa)

sem alfa 48 bpp = 281.5 trilhões de valores por pixel = 2^{48} , $2^{16}R \ 2^{16}G \ 2^{16}B$

com alfa 64 bpp = 18.446.7 trilhões de valores por pixel = 2^{64} $2^{16}A \ 2^{16}R \ 2^{16}G \ 2^{16}B$



imagens com 16 bits por canal após processamento de 'levels'

(fonte: Steve Patterson)



imagens com 8 bits por canal após processamento de 'levels'

(fonte: Steve Patterson)