COMPUTER VISION COMPETITION

Team name: RESISTO

Project name: Resistor Value Computation

Team member	B.N.	Section
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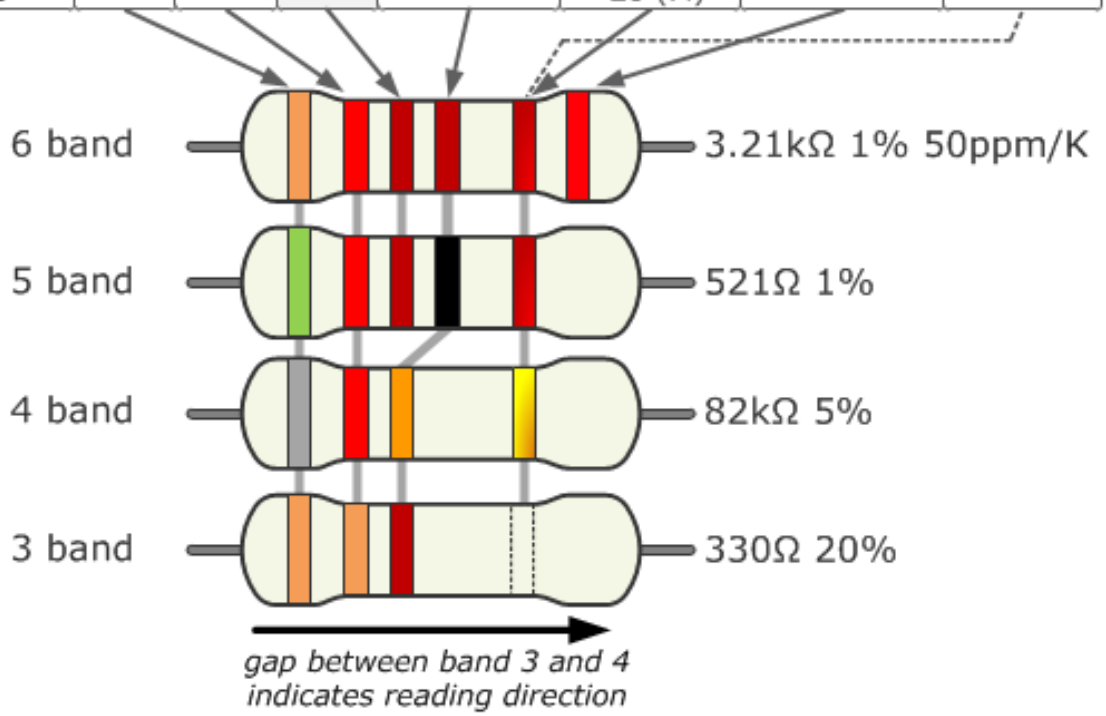
Background:

www.resistorguide.com

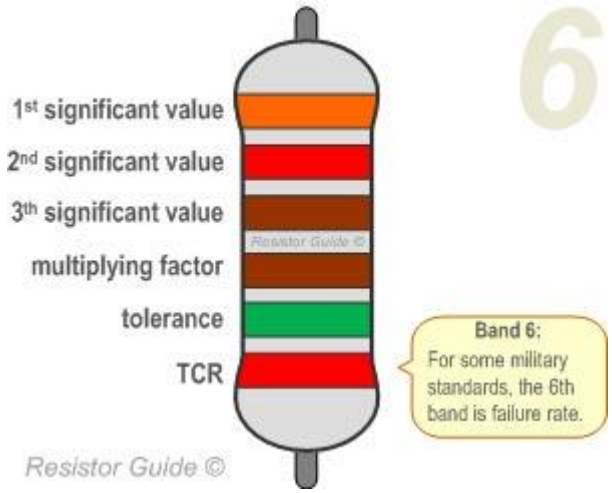
	Color	Signficant figures			Multiply	Tolerance (%)	Temp. Coeff. (ppm/K)	Fail Rate (%)
Bad	black	0	0	0	x 1		250 (U)	
Beer	brown	1	1	1	x 10	1 (F)	100 (S)	1
Rots	red	2	2	2	x 100	2 (G)	50 (R)	0.1
Our	orange	3	3	3	x 1K		15 (P)	0.01
Young	yellow	4	4	4	x 10K		25 (Q)	0.001
Guts	green	5	5	5	x 100K	0.5 (D)	20 (Z)	
But	blue	6	6	6	x 1M	0.25 (C)	10 (Z)	
Vodka	violet	7	7	7	x 10M	0.1 (B)	5 (M)	
Goes	grey	8	8	8	x 100M	0.05 (A)	1(K)	
Well	white	9	9	9	x 1G			
Get	gold			3th digit only for 5 and 6 bands	x 0.1	5 (J)		
Some	silver				x 0.01	10 (K)		
Now!	none					20 (M)		



-How to read 6-band resistor code example:

Resistors with 6 bands are usually for high precision resistors that have an additional band to specify the temperature coefficient (ppm/K). The most common color for the sixth band is brown (100 ppm/K). This means that for a temperature change of 10 ˚C, the resistance value can change 0.1%. For special applications where temperature coefficient is critical other colors

Shown example: orange (3), red (2), brown (1), green (x10), brown (1%), red(50 ppm/K): 3.21 k Ω 1% 50 ppm/K.



Project Description:

Resisto is mobile application, you can use it by simply provide an image of your resistor and you will know the value of this resistor from Resisto application.

The Resisto app uses the color key which is provided on the resistor to know what the value is.

Project Implementation and Team members roles:

We are planning to use otsu thresholding and canny edge detection to extract the resistor from the image, then we need to draw a line along the resistor body to extract the color key, making some algorithm to get the value from the color key and display the value of the resistor.

Role	Team members
Use cv functions to extract the key color	Beshoy-Peter
Algorithm to get the value from key color	Mina Rizk
Develop an Android packaging for the app	Mina Talaat

Note: this plan may change due to time limitation and our progress, the final plan will be provided on github repo.

Sample for input images:

Expected o/p: 220

Expected o/p: 10K

Github repo link:

https://github.com/ETBMina/Resisto

Note: this is a private repo and we will make it public after the end imp. phase.

References:

For more info about resistor color code check this link.