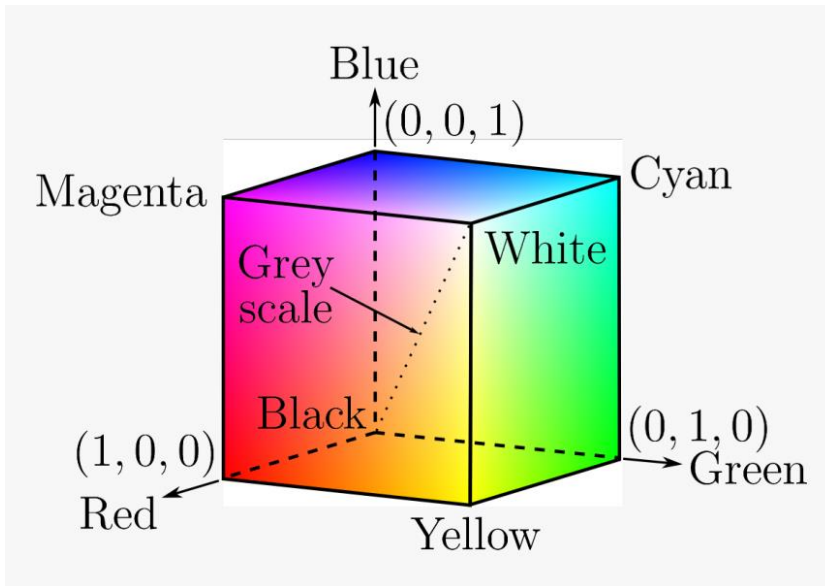
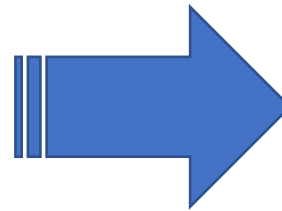


# Quiz 3, problem 1: what if color image?

- What is a color histogram?

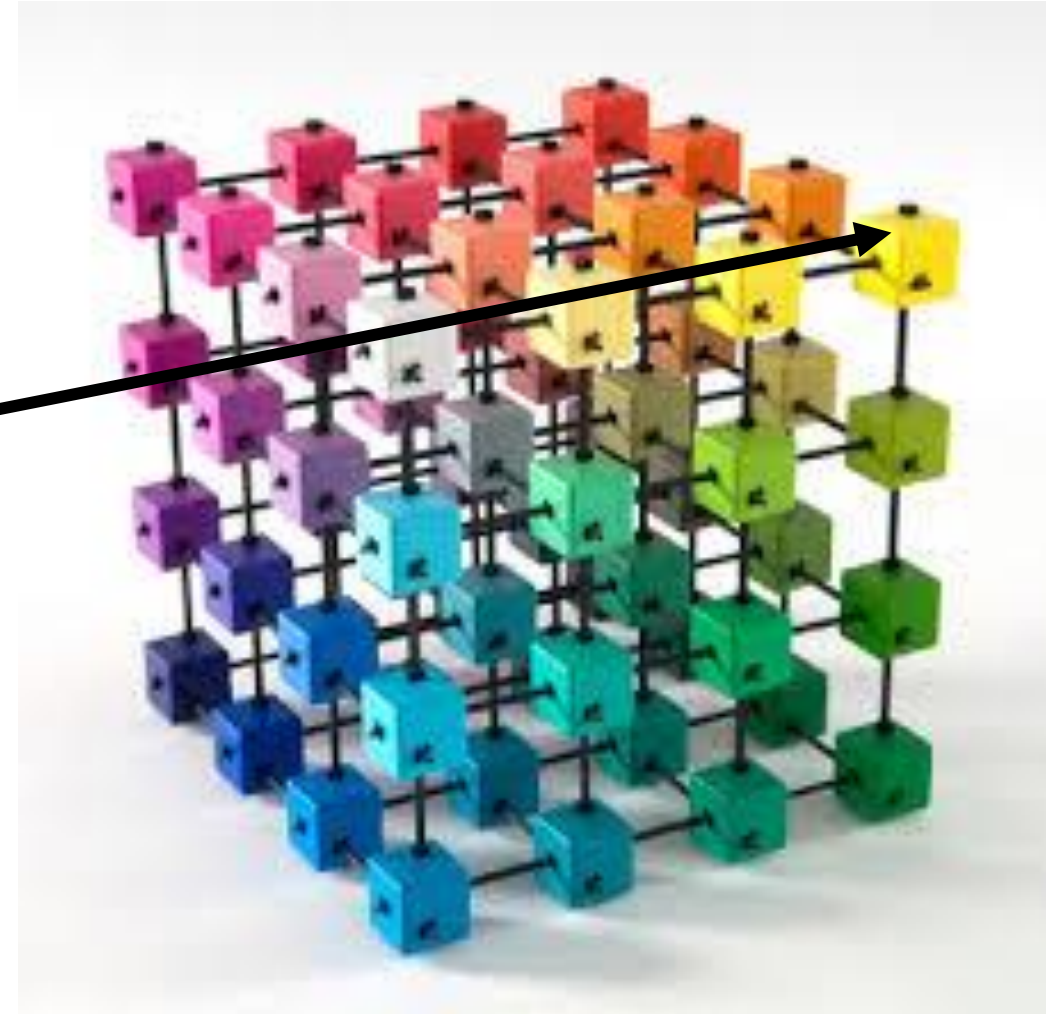


**3D RGB Color Cube**

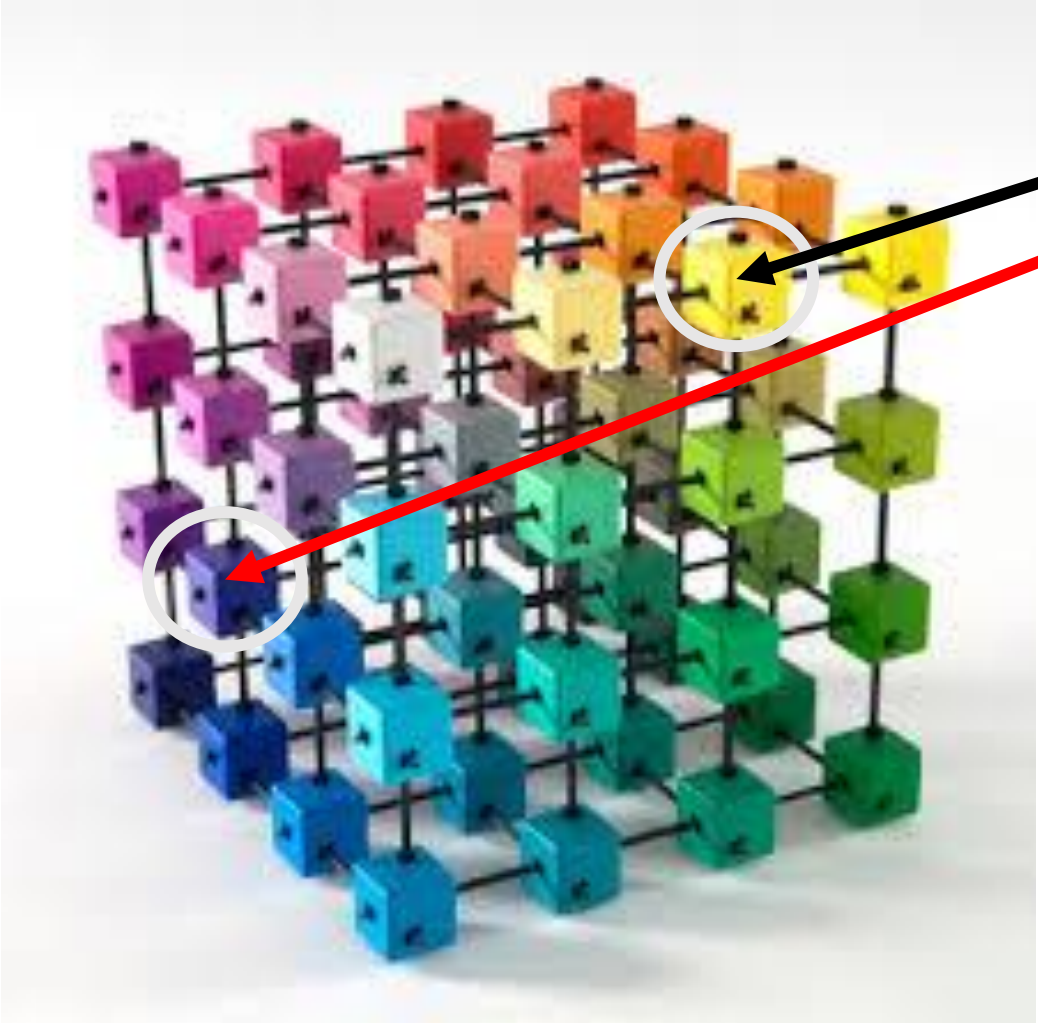


**Discretize into 3D Histogram (accumulators)**

To compute histogram of color image,  
go to every pixel and increment its accumulator in histogram

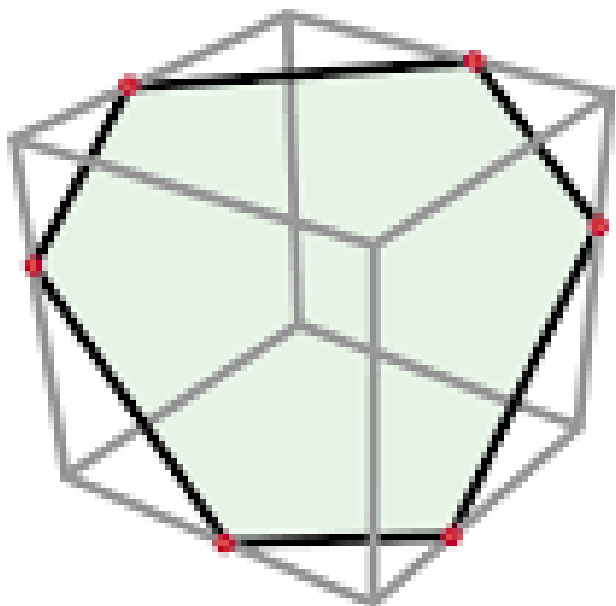
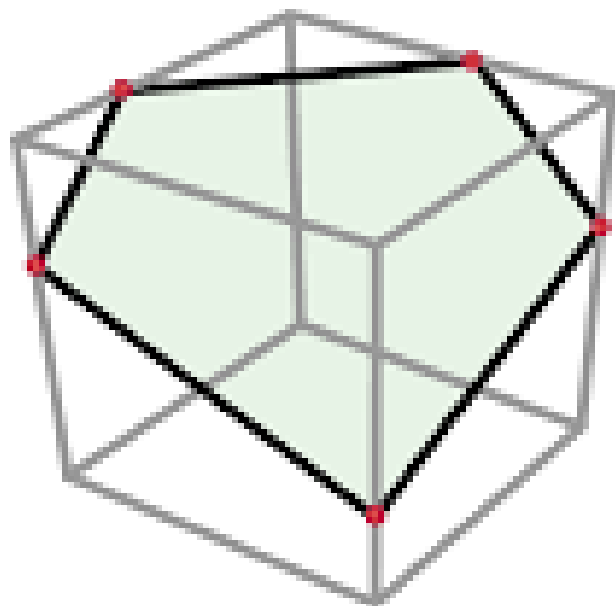
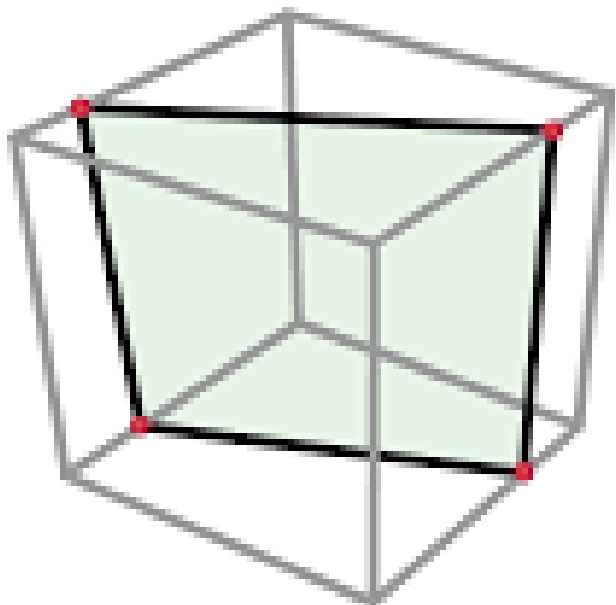
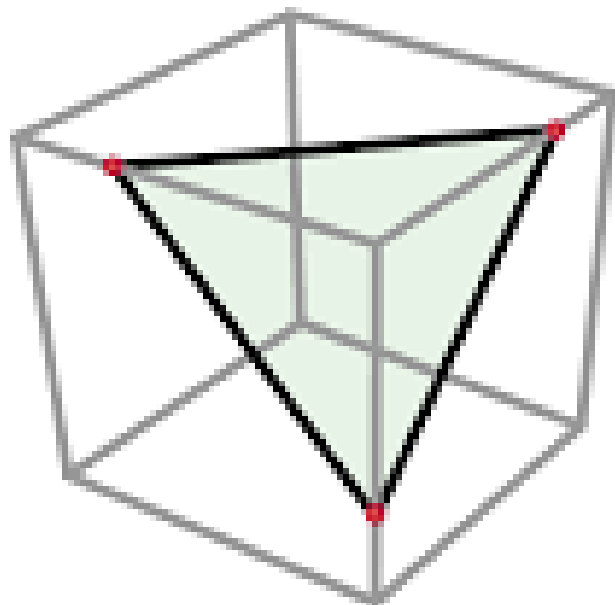


$$H(R = 1; G = 1; B = 0) = H(R = 1; G = 1; B = 0) + 1$$



Suppose these are two peaks in 3D histogram

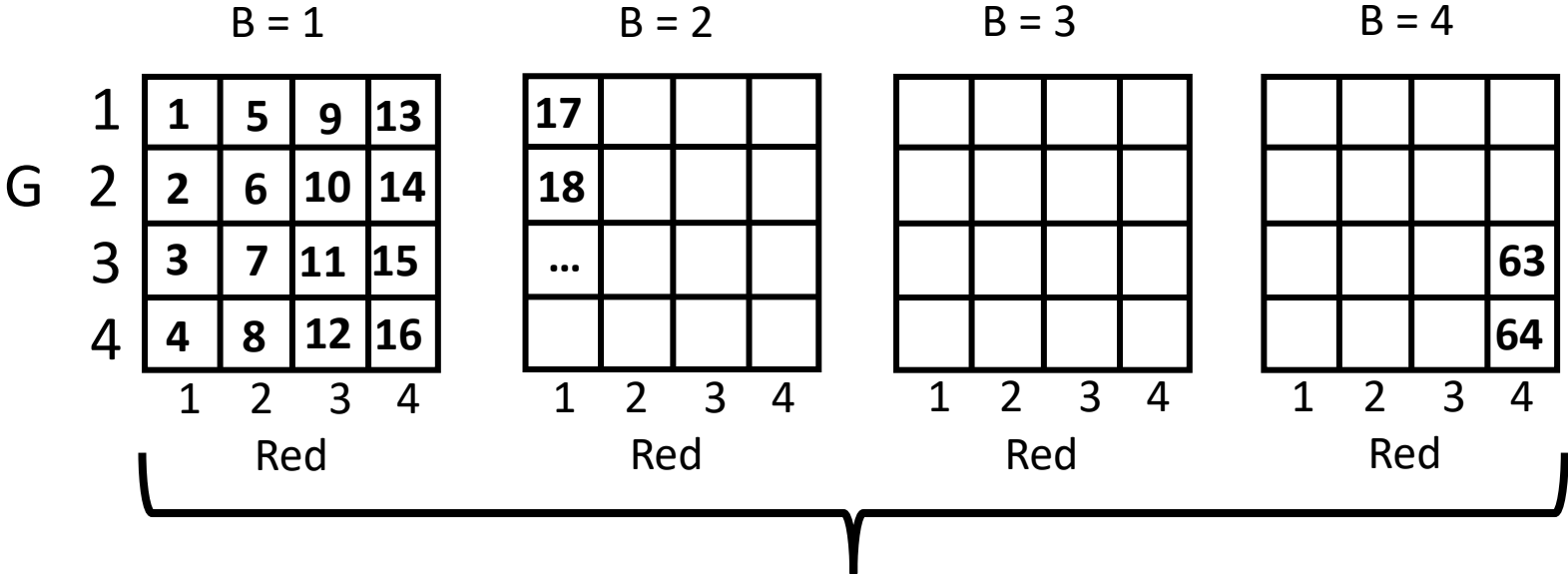
Then to "threshold" them means?



**Separate them with a  
slicing plane**

**→ Requires more than  
a threshold**

# But you say, why don't we use hist\_color to make it 1D??



Linear map (like hist\_color)



First bin is [1,1,1] ← Very close in color → 17<sup>th</sup> bin is [1,1,2]  
Very far on line