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HUMAN COMPUTER INTERACTION

Q.1] Study of visual perception helps in designing efficient interfaces.

- Understanding the basic construction of the eye goes somewhere to explaining the physical mechanism of the vision is what visual perception can give a solution to.
- The information obtained from visual apparatus must be filtered & passed to elements that can further process the results which enable to recognize coherent scenes & differentiate color.

→ **Perceiving size and depth:-**

- Eye perceives size, and depth by considering how the image appears on the retina. The size of the image is specified as a visual angle.
- Visual angle is affected by both the size of the object and distance from the eye.

→ **Perception of size:-**

- Visual angle of object is reduced as it gets away, we might expect that we might perceive this object as smaller.
- Our perception remains constant even if its visual angle changes. So a person's height is constant even though they move away from us.
- This is the law of size constancy & it indicates that our perception of size relies on factors other than visual angle.

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→ Perception of depth:

- If objects overlap the object which is partially covered is perceived to be in the background hence far away.
- Similarly on the size & height of object in our field of view provides a hint of distance. and hence we can judge the distance accordingly.

→ Perception of Brightness:-

- It is subject to reaction to levels of light. It is affected by luminance which is the amount of light falling on the object surface and its reflective properties.
- Contrast is relative to luminance, it is a function of the luminance of an object and the luminance of the background. Visual acuity increases with increased luminance.

→ Perceiving Color:-

Color is usually made up of three components Hue, Intensity and Saturation.

1. Hue is determined by the spectral wavelength of light
2. Intensity is the brightness of a color.
3. Saturation is the whiteness of a color.

By varying these two we can perceive 7 million different colors however the identification without training can be done by very few.

- Hence all the above reasons justify why the use of visual perception is crucial in developing of efficient user interfaces.