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**QUESTION**

Define Visual Perception and write on the three factors associated with visual perception.

**ANSWER**

Computers communicate with their human users largely through their visual (and auditory) displays. Visual perception is the ability to perceive our surroundings through the light that enters our eyes. The visual perception of colours, patterns and structures has been of particular interest in relation to graphical user interfaces because these are perceived exclusively through vision. An understanding of visual perception therefore enables designers to create more effective user interfaces.

The three factors associated with visual perception are:-

1. Perceiving size and depth: Size and depth perception is the visual ability to perceive the world in three dimensions, coupled with the ability to gauge how far away an object is. For example, David is standing on a hilltop. Beside him on the summit he can see rocks, cows and a small tree. On the hillside is a farmhouse with outbuilding and farm vehicles. Someone is on the track, walking toward the summit.

Note that the notions of size and distance are predominate in describing such a scene. Our visual system is easily able to interpret the images, which it receives to take account of these things. We can identify similar objects regardless of the fact that they appear to us to be vastly different sizes. In fact, we can use this information to judge distance. Factors to consider in this perception are visual acuity and law of size constancy.

1. Perceiving brightness: A second step of visual perception is the perception of brightness. Brightness is in fact a subjective reaction to level of light. It is affected by luminance, which is the amount of light emitted by an object. The luminance of an object is dependent on the amount of light falling on the object’s surface and its reflective prosperities. Contrast is related to luminance: it is a function of the luminance of an object and the luminance of its background.

Although brightness is a subjective response, it can be described in terms of the amount of luminance that gives a just noticeable difference in brightness. However, the visual system itself also compensates for changes in brightness. In dim lighting, the rods predominate vision. Since there are fewer rods on the fovea, object in low lighting can be seen easily when fixated upon, and are more visible in peripheral vision. In normal lighting, the cones take over.

1. Perceiving colour: It is the factor of visual perception by which a person can distinguish among stimuli based on differences in the spectral composition of energy radiating from them. From the perceptual perspective, colour is the attribute of vision consisting of chromatic and achromatic content in any combination, described by words such as red, white, etc. Colour is usually regarded as being made up of three components:
2. Hue: Hue is determined by the spectral wavelength of the light. In scientific terms, hue is the spectral wavelength composition of a colour that produces the perception of being red, yellow, blue, and so on. Blues have short wavelength, greens medium and reds long. Approximately 150 different hues can be discriminated by the average person.
3. Intensity: Intensity is the brightness of the colour. It is the degree to which a stimulus appears to reflect or transmit either more or less light, that is, appears light or dark.
4. Saturation: The saturation of a colour is its degree of richness, intensity, purity, or grayness. Saturation is the amount of whiteness in the colours. The eye perceives colour because the cones are sensitive to light of different wavelengths.