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COURSE TITLE: HUMAN COMPUTER INTERACTION

QUESTION

1. What is colour harmony? Discuss why colour harmony is important in HCI.
2. Explain the following using examples: (I) Components of Colour (II) Primary Colours (III) Secondary Colours (IV) Tertiary Colours

ANSWERS

1. Colour harmony refers to the property that certain aesthetically pleasing colour combinations have. These combinations create pleasing contrasts and consonances that are said to be harmonious.

IMPORTANCE

Colour and accessibility are indelibly linked to one another, bad colour combinations create bad user environments. The right colours can show users that they are doing the right thing or the wrong thing. Colour can be used as a grouping method or to draw attention to certain aspects of the system. There are several traditional colour schemes known to enhance usability including but not limited to: monochromatic, analogous, complementary, triad and split complementary. Some common issues with colour use are: too many colours, complementary colours placed too close together, excessive saturation, inadequate contrast and inadequate attention to colour impairment. Colour can be used to create images that appear 3-D and is one of the most effective tools a developer has in their arsenal.

Colour schemes have a large impact on human-computer interaction, colour can greatly improve user interfaces if used correctly, but can also reduce the functionality of the interface if used inappropriately. Important factors of designing colour interfaces include simplicity, consistency, and clarity. Firstly, you want to keep the colour scheme fairly simple. Simplicity can be achieved by using the four primary colours, which are red, green, yellow, and blue. Consistency is also another important factor when designing an interface. Colours should be assigned to a particular type of concept or to help classify information. This technique helps users to retain more information in their short-term memory. Clarity and the concise use of colour aids in helping users identify items more efficiently.

1. 1. Components of Colour: As we now know all perceived colours can be represented by three independent variables, either the LMS responses, or the tristimulus values under the primaries of a given colour system, such as RGB or XYZ. In many situations (e.g., computer image processing), it is more convenient to represent a colour by a different set of three independent variables HSL (or HSI, HSV). These are defined as components of colour. Hue is what most people think of when using the term ‘colour.’ It corresponds to its position in the spectrum. Examples of hues are: red, orange, yellow, green, blue, violet.

2. Primary Colours:  set of primary colours is a set of colourants or coloured lights that can be combined in varying amounts to produce a gamut of colours. This is the essential method used in applications that are intended to elicit the perception of diverse sets of colour, e.g. electronic displays, colour printing, and paintings. Primary colours include red, blue and yellow. Primary colours cannot be mixed from other colours. They are the source of all other colours.

3. Secondary Colours: secondary colours—green, orange, and purple—are created by mixing two primary colours. The ratio of primary colours you use when you mix will determine the final hue of the secondary colours.

* Blue and yellow make green.
* Yellow and red make orange.
* Red and blue make purple.

4. Tertiary Colours: A tertiary colour or intermediate colour is a colour made by mixing full saturation of one primary colour with half saturation of another primary colour and none of a third primary colour, in a given colour space such as RGB, CMYK or RYB. Tertiary colours are red-purple, red-orange, blue-green, blue-purple, yellow-green, and yellow-orange. There are six tertiary colours and they are the result from mixing equal parts of a primary colour with a secondary colour.

• Yellow + Orange = YELLOW/ORANGE

• Red + Orange = RED/ORANGE

• Red + Purple = RED/PURPLE

• Blue + Purple = BLUE/PURPLE

• Blue + Green = BLUE/GREEN

• Yellow + Green = YELLOW/GREEN