ASSIGNMENT 4

1. Colour Harmony is the term for colours that are thought to match. In other words, colours that look aesthetically pleasing side-by-side. This is more an art than science as colour perception is influenced by cognitive factors, emotion and culture.
2. 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.

### b) i) Colour consists of three main components:

1) Hue: Hue is more specifically described by the dominant wavelength and is the first item we refer to (i.e. “yellow”) when adding in the three components of a colour. Hue is also a term which describes a dimension of colour we readily experience when we look at colour, or its purest form; it essentially refers to a colour having full saturation, as follows: When discussing “pigment primaries” (CMY), no white, black, or grey is added when 100% pure.  (Full desaturation is equivalent to a muddy dark grey, as true black is not usually possible in the CMY combination.) When discussing spectral “light primaries” (RGB), a pure hue equivalent to full saturation is determined by the ratio of the dominant wavelength to other wavelengths in the colour.

2) Value: value refers to the lightness or darkness of a colour. It indicates the quantity of light reflected. When referring to pigments, dark values with black added are called “shades” of the given hue name. Light values with white pigment added are called “tints” of the hue name.

3) Saturation (also called “Chroma”): Saturation defines the brilliance and intensity of a colour. When a pigment hue is “toned,” both white and black (grey) are added to the colour to reduce the colour’s saturation. It refers to the dominance of hue in the colour. On the outer edge of the hue wheel are the ‘pure’ hues.

1. ***Primary Colours*** - These are colours that cannot be created through the mixing of other colours. They are colours in their own right. They are also basic **colours** that can be mixed together to produce other **colours**. The three primary colours can be seen below RED - YELLOW - BLUE.
2. ***Secondary Colou*rs**- A colour produced by mixing two additive primary colours in equal proportions. The secondary colours are cyan (a mixture of blue and green), magenta (a mixture of blue and red), and yellow (a mixture of green and red). Each secondary colour is also the complementary colour (or complement) of the primary colour whose wavelength it does not contain. Thus cyan is the complement of red, magenta is the complement of green, and yellow is the complement of blue.
3. ***Tertiary Colours***- Tertiary colours are combinations of primary and secondary colours. There are six tertiary colours; red-orange, yellow-orange, yellow-green, blue-green, blue-violet, and red-violet. An easy way to remember these names is to place the primary name before the other colour. So the tertiary colour produced when mixing the primary colour blue with the secondary colour green, is called 'blue-green'.