Session 3

Principles and Color Concepts for Web

Session Overview

In this session, you will be able to:

- Explain the various principles of Web Interface
- Describe usage of colors in Web designing
- Identify the issues and possible solutions for color blind users
- Apply different elements while designing a Website's background

Principles of Web Interface

Principles of Web Interface

Know Your User

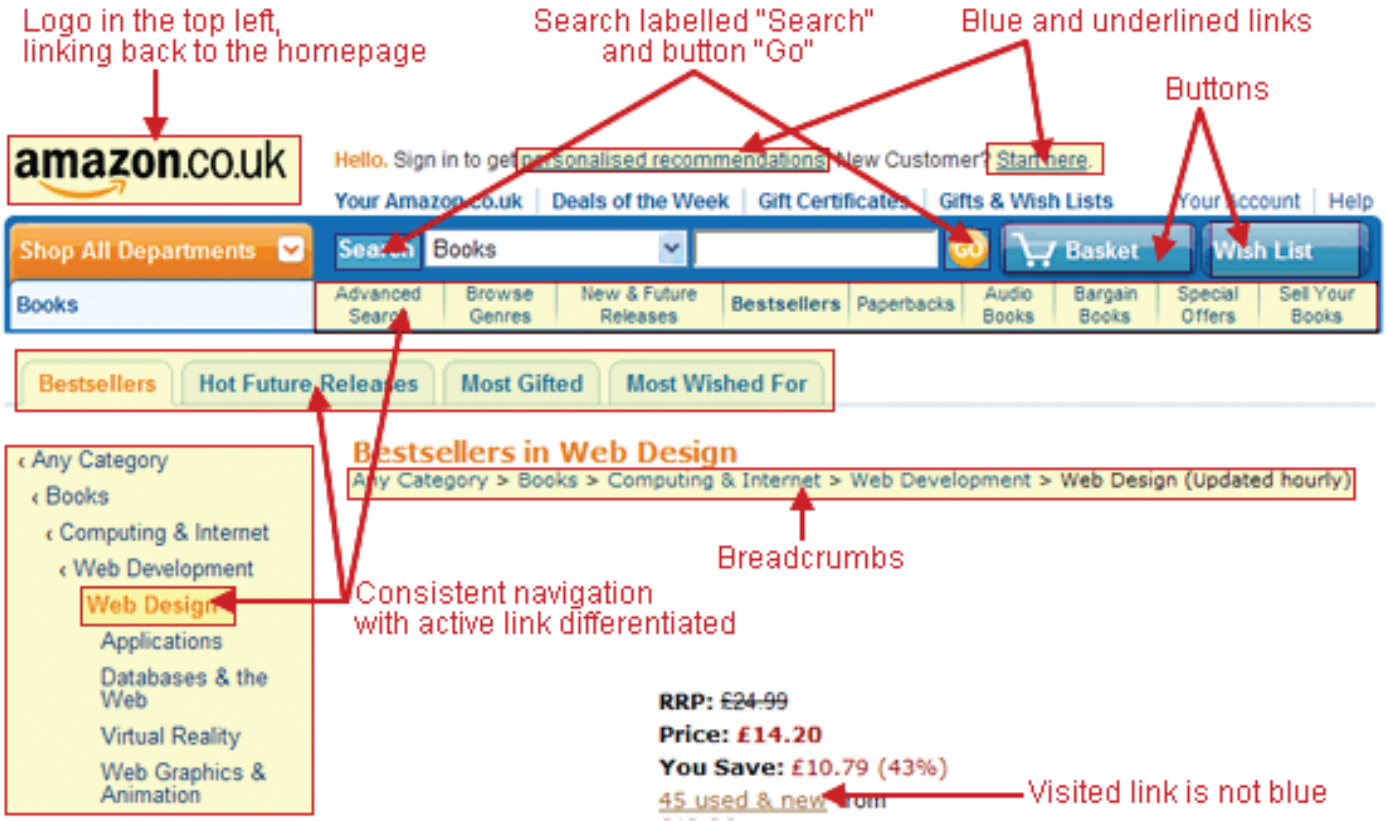
- The user is the center-point of any Website creation.
- Things to be kept in mind while sketching the interface design are:
  - Who are your users?
  - How do users access the Website?
  - What are the users looking for?

Principles of Web Interface

Don’t Make Users’ Think

- The content should be self-explanatory.
- The content, navigation, and the links should drive the users towards their need.
- According to Steve Krug’s first law of usability, the Webpage should be obvious and should not leave any questions unanswered in the minds of the users.
- A clear design, moderate visual cues, and easily recognizable links can help the users achieve their objective.

Principles of Web Interface



Amazon's Website which implies 'Don't make Users' Think' principle

Principles of Web Interface

Focus on Users' Attention

- The content presented should catch the user's attention quickly, that is in few seconds.
- Few aspects that grab attention are:
  - Animated GIF
  - Special font effects
  - Highlighted words
  - Contrasting colors
  - Change of colors

Principles of Web Interface

Structure

- Website elements should be systematically placed so that they are easily recognizable and apparent to the users.
- Similar elements or related functions should be resemble.

Principles of Web Interface

Simplicity

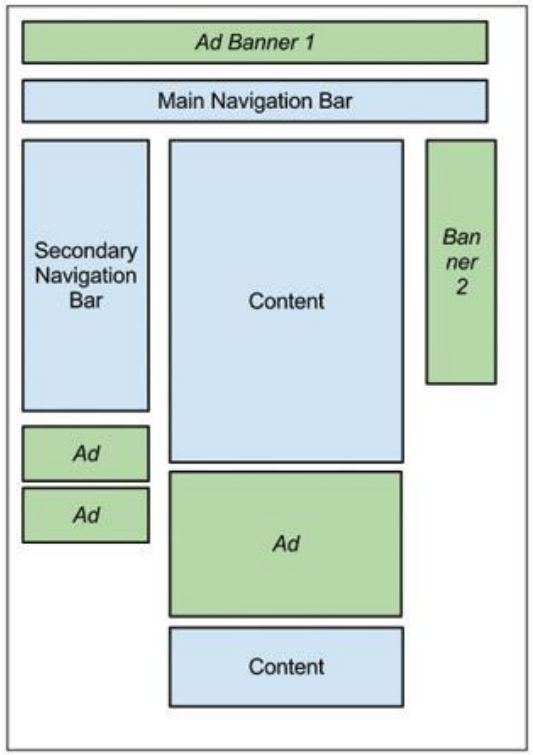
- Simplicity is related to the concept on which a Website is designed.
- The interface metaphors should be simple, familiar, and logical.
- Following points should be kept in mind for imbibing simplicity in a Website:
  - Non-relevant components should be removed, without sacrificing effectiveness.
  - If complexity is creating a problem, then a simpler alternative should be found that will deliver the same result.

Principles of Web Interface

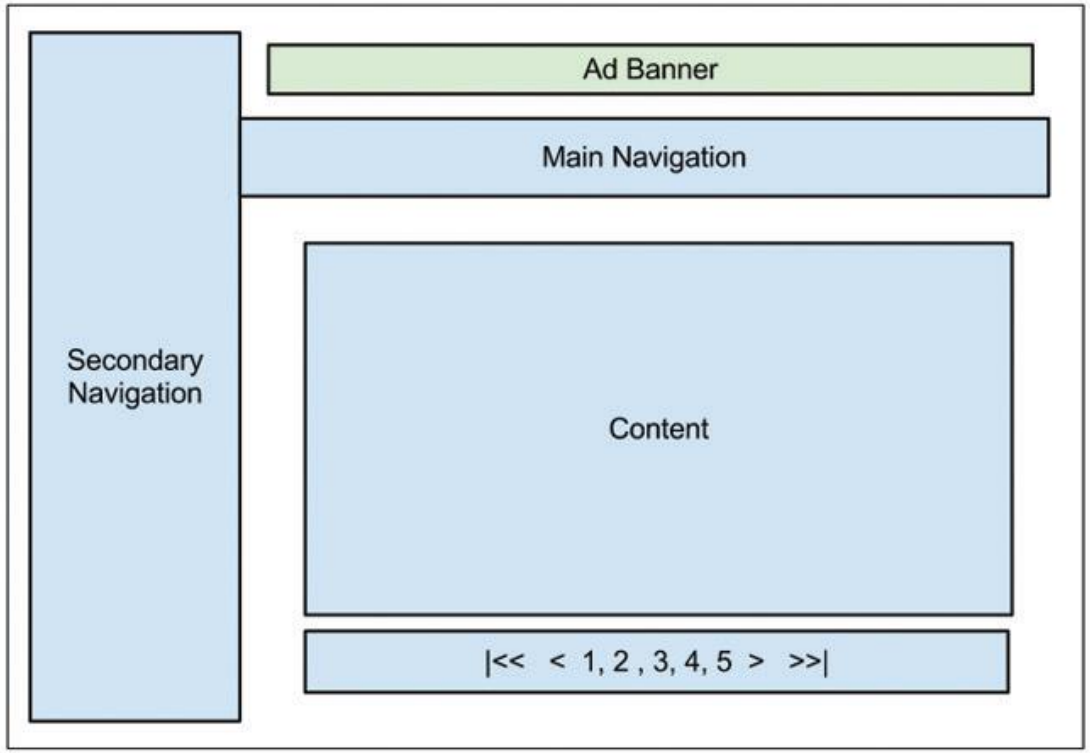
Use Active Whitespace

- Whitespace or negative space refers to the blank areas of a Webpage.
- To define the areas of an interface and guide the reader throughout the Website, whitespace acts as a good solution.
- Whitespace can be of two types:
  - Active: It is one, which is intentionally created to demarcate the different content areas.
  - Passive: It is created automatically due to the different shapes used or because of the layouts border.

Principles of Web Interface



Structure of Desktop website



Structure Tablet Site

Use of whitespace in desktop and tablet layouts

Principles of Web Interface

Visible Language

- Visible language refers to the text which users see on-screen.
- An American user-interface and information-visualization designer, stated three fundamental principles that are involved in the use of 'visible language':
  - Organize
  - Economize
  - Communicate

Principles of Web Interface

Clear Navigation

- In a Website, the user is guided through the different Webpages using navigation.
- The navigational elements help the users to move from Point A to Point B.
- A few tips for navigational elements can make the user experience better:
  - The navigational elements should be demarcated from its content.
  - Different color, tone, effect, or shape can be applied for its identification.
  - Clear and concise text should be used for avoiding ambiguity.

Principles of Web Interface

Direct Access

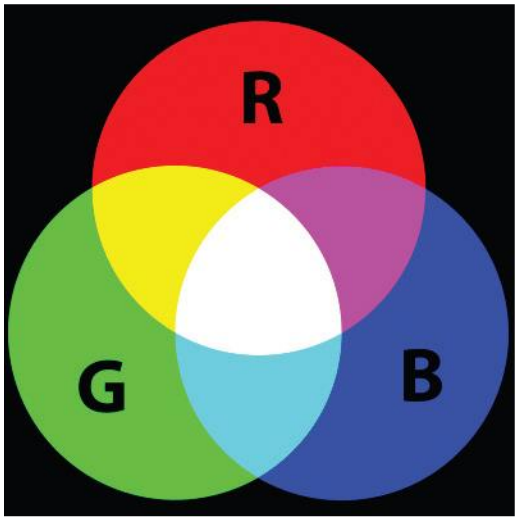
- The interface must have an efficient hierarchy of information to minimize Webpages.
- Content should be made available at a click or two away from the main menu pages of the Website.

Color

- Colors can be chromatic or achromatic.
- Chromatic colors are those in which one particular color's wavelength is more.
- Achromatic literally means 'without any color'.
- In Web designing, a color is composed of three important components, namely hue, saturation, and value.
- By manipulating these components, a designer can control and exhibit a variety of 'colors' to the user.

Defining Color for Web

- A computer screen displays colors using varying amounts of red, green, and blue called an RGB color model.
- RGB is an additive form of color model because red, green, and blue lights are added in equal amount to white light.



RGB model

Defining Color for Web

- In an HTML, color is detailed by a hexadecimal RGB triplet preceded by the hash sign '#'.

```
<FONT COLOR="#FF12AC">Hot Pink!</FONT>
```

Defining Color for Web

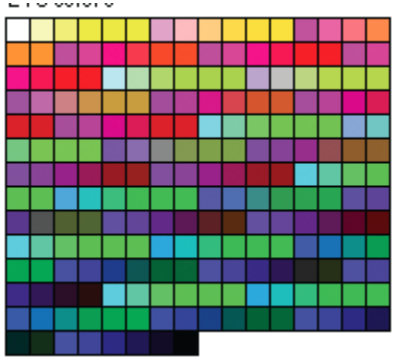
Table specifying color names and respective hex values.

Color Name	Hex Value
Black	#000000
White	#FFFFFF
Gray	#808080
Silver	#C0C0C0
Green	#008000
Lime	#00FF00
Olive	#808000
Yellow	#FFFF00
Aqua	#00FFFF
Teal	#008080
Blue	#0000FF
Navy	#000080
Fuchsia	#FF00FF
Purple	#800080
Red	#FF0000
Maroon	#800000

Defining Color for Web

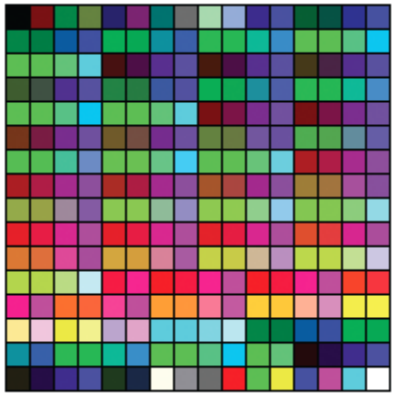
Browser–Safe Color

- A browser-safe color palette devised by Netscape Communications helps in displaying color graphics in a similar way on different screens, functioning under different operating systems such as Macintosh, Windows, and UNIX under different browsers.



Browser-safe Palette (216 colors)

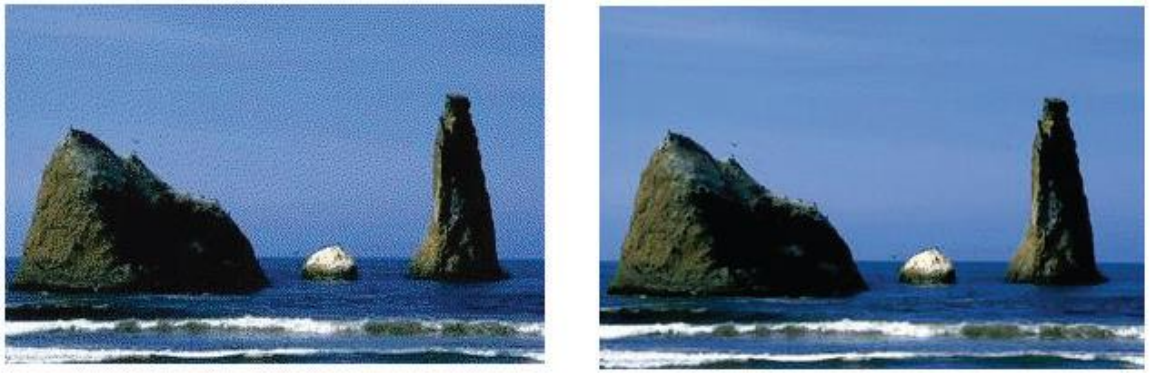
Macintosh (256 colors)



Windows (256 colors)

Defining Color for Web

- Browser-safe palette is also called as 6x6x6 palette.
- Using a browser-safe color palette avoids dithering of images on a 8-bit system.
- Dithering refers to unexpected color shifting, usually in the form of unwanted dots or speckles on artwork.

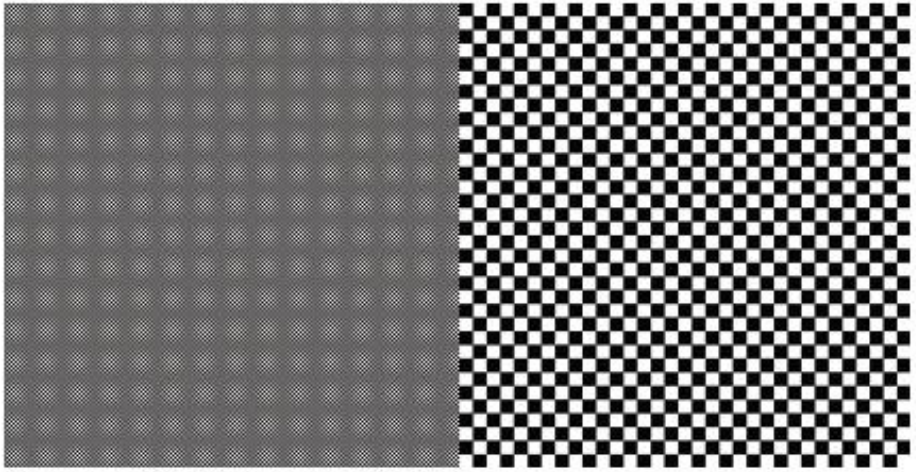


Original Image or an image with a display adapter set to more than 255 colors (Left) and Dithered image (Right)

Defining Color for Web

Hybrid Colors

- Hybrid colors are used to overcome the restrictions of the 216-color palette.
- Hybrid colors fill small gaps or unwanted dots using two or more Web-safe colors in a dithered image.
- These colors are filled either in checkerboard or stripe pattern.



Gray area (Left) and Checkboard of single pixel (Right)

Defining Color for Web

HTML and Colors

- Setting colors in HTML can be done in many ways.
- These settings can be applied to various components of a document such as the background color, the default text color, the colors of links, the color of font styles used, and the background colors of tables.

```
I <BODY BGCOLOR="#FFFFFF" TEXT="#000000">
```

```
I <BODY LINK="blue" ALINK="red" VLINK="purple">
```

Defining Color for Web

Cascading Style Sheets (CSS) and Colors

- Ways of expressing color values

```
<STYLE TYPE="text/css"> <1-- BODY {color: black} --> </STYLE>
```

- Three-digit hexadecimal colors

```
I BODY {color: #FOO}
```

Defining Color for Web

Color and its Usability

- While using a particular color, two key factors are taken into account:
  - Colors
  - Contrast

Colors ‘For All’

- A Website should not solely rely on colors. If it does, the Website will not cater to the needs of color blind users.
- To avoid the Website being paralyzed in such cases, the following options are open for Web designers:
  - Contrast colors
  - Proper prompt indications
  - Bright colors
  - Contrast

Colors 'For All'

Benefits and challenge of Color Friendly Websites

Benefits

- Websites get a higher ranking on search engines.
- A colorblind-accessible Website gathers more crowd.
- Websites are considered more professional if they include the impaired or disabled peoples' interest while designing them.

Challenge

- The level of color blindness differs from person to person.
- There are different types of color blindness that complicates the problem.
- Research models have tried to predict how colors are perceived by color-blind users. However, this prediction cannot guarantee a 100% accuracy.

Colors 'For All'

Prioritizing the Website

- Tips for prioritizing the Website elements:

If the user looks at a content for more than two seconds, it should be made clearly visible and have a high contrast ratio.

The font and background colors should be at the opposite ends of the color saturation poles such as black text on a white background. Moreover, the body text color should be monochromatic.

As the menu bar, navigation panel, and sub-headers are often used for accessing the Webpages, these should be more artistically presented.

The navigation and the content should not overlap each others presence and should stand distinctively.

Summary

- For developing an efficient and effective interface, certain principles need to be applied. These include knowing the user, focusing on what users' need, interface structure, language used, navigation route, and its reach to the user.
- To remove the monotony from a Website, colors, images, and backgrounds are added to make it more interesting.
- In Web designing, RGB color model is used. Its colors are defined by decimal coding. However, when it need to be expressed in Web, hexadecimal coding works.
- In Web, various elements such as HTML, CSS, and Web browser compatibility influences the usage of colors.
- At least 1 in 20 visitors of a Website are color blind. Therefore, rather than 'losing-out' on these visitors, Websites should be made accessible to them. This improves the Websites reach on the Web.

Knowledge Check

Q1. Browser-safe palette is also called as _____ palette.

a. 6x6
b. 6x6x6
c. 256x6
d. 216x6x6

Knowledge Check

Q2. In RGB model, the three colors-red, green, and blue have values determined from 0 to 256.

a. True
b. False

Knowledge Check

Q3. To avoid variation of colors or dithering of images on different browsers, browser-safe palette was introduced.

a. True
b. False

Knowledge Check

Q3. To overcome the limitation of 216 browser-safe palette, _____ were introduced.

a. HTML colors
b. CSS colors
c. Color-blind safe colors
d. Hybrid colors