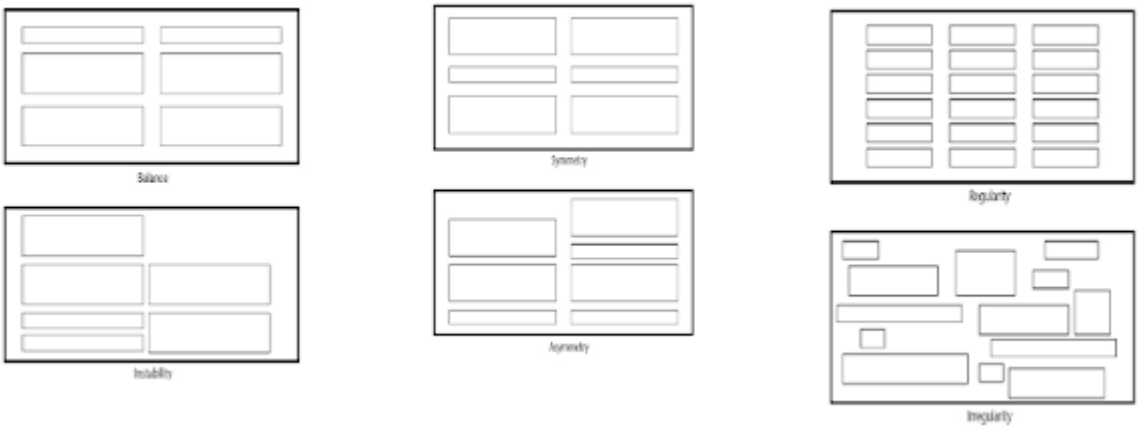
# ***HMI ASSIGNMENT NO: 02***

Q) Explain the qualities of visually pleasing composition
Ans. Visually pleasing composition should have the following qualities:
1.Balance:
create a screen balance by providing an equal weight of screen elements left,right,top and bottom.Balance can be illustarated in the figure as follows



2.Symmetry:
create symmetry by replicating elements left and right of the screen center line.

3. Regularity:
1) create regularity by establishing standard and consistency spaced horizontal and vertical alignment points
2)Also use similar elements sizes,shapes,colors and spacing

4.Predictability:
Create Predictability by Being Consistent and following conventional orders or arrangements.

5.Sequentiality:
1)provide sequentiality by arranging elements to guide the eye through the screen in an obvious,logical,rhythemic and efficient manner
2)the eye tends to be attracted to
- a)A bright element before one less bright
- b)isolated elements before elements in a group
- c)graphics before text
- d)color before black and white
- e)highly saturated colors before those less saturated
- f)dark areas before light areas
- g)a big element before a small one
- h)an shape before a usual one
- i)big objects before little objects

6.Economy:
1)Provide economy by using as few styles,display techniques and colors as possible

7.Unity:

1)create unity by
a)using similar sizes,shapes,or colors for related information
b)leaving less space between elements of a screen than the space left at the margins

8.Simplicity:
1)Optimizes the number of elements on a screen ,within limits of a clarity
2)Minimize the alignment points ,especially horizontal or vertical

Q)What are the possible uses of colors and problems associated with it?

Ans. Color may be used as a formatting aid in structuring a screen or it may be used as a visual code to categorize & identify information or data.It may also be used to portray objects naturally & make a screen more appealing to look at.

1.Color as a Formatting Aid

- Use color to assist in formatting a screen for relating or typing elements into groupings.
- Use color for breaking apart separate groupings of information.
- It is used to associate information that is widely separated on the screen.
- It is also used in highlighting or calling attention to important information by setting it off from the other information.

2.Color as a Visual code

- Colors are used as visual code to identify screen components.
- It is used to identify the logical structure of ideas, processes or sequences.
- It is also used to identify the sources of information & the status of information.

Possible problems with color

Possible problems may be caused by the perception system itself or the physiological characteristics of the human eye.

1.High attention-getting capacity

Color has an extremely high attention getting capacity.This quality causes the screen viewer to associate, or tie together, screen elements of the same color, whether or not such an association should be made. A person might search for relationship & difference that do not exist, or that are not valid.

2.Interference with use of other screens

Indiscriminate or poor use of color on some screen will diminish the effectiveness of color on other screen. The rationale for color will be difficult to understand & its attention getting capacity severely restricted.

3.Varying sensitivity of the eye to different color

All colors are not equal in the eye of the viewer.The eye is more sensitive to those in the middle of the visual spectrum, which appear brighter than those at the extreme. Some combination of screen colors can strain the eye’s accommodation mechanism. The perceived appearance of a color is also affected by the size of the area of color, the ambient illumination level & other color in the viewing area.

4.Color-viewing deficiencies

About 8% of males & 0.4% of females have some form of color perception deficiency called color blindness. A red viewing deficiency is called protanopia,a green deficiency is called deuteranopia & blue deficiency is called tritanopia.

5.Cross-disciplinary & cross-cultural difference

Colors have different meanings in different situation to different people.A color used in an unexpected way can cause confusion. The same color can have different connotation depending upon its viewer.

The color blue has the following

1. For financial manager- corporate qualities reliability. 2.For American movie audience – tenderness.

Q) Explain the various design goals and different types of windows.
Ans.Design goals are targets for design work these are typically agreed upon by stake-holders as the criteria for comparing design alternatives and evaluating design outcomes the following are the illustrative examples of design goals.
1.Usability: usability goals such as a target for the percentage of users who rate a user interface as easy to use
2.Customer experience: customer experience measures such as a theme park attraction with a goal to be rated as magical thrilling or comforting by customers.
3.Visual appeal: An aesthetic goal such as furniture design initiative with a goal to produce a product that is visually perceived as modern study, high quality and stylish.
4.Sensory experience: Goals related to multi-sensory experiences such as a product you see, feel, smell and taste e.g. a product design goal to develop donuts that don't feel oily or messy to the French.
5.Customer needs: Meeting customers need such as a social media service that allows customer to quickly liberate their data.
6.Engagement: User engagement goals such as user interface with a design goal to keep users for an average of 30 minutes a day.
7.Performance: the performance of a design such as a goal for the load time of a website
8.Durability: the durability of a design such as the services with increasing number of users this can be validated with accelerated life testing.
9.Fit for purpose: Fit for purpose is the idea that a design achieve its useful functions without any unnecessary additions to quality e.g. a can opener that opens Cans well without any additional goals such as being entertaining or high-tech.
10.Cost: targets for a unit cost or operating cost design as a primary goal is known as design-to-cost.

Types of windows :
1)Primary Window:
The primary window is the first one that appears on a screen when an activity or action is started.

2)Secondary Windows

- Secondary windows are supplemental windows.
- Secondary windows may be dependent upon a primary window or displayed independently of the primary window.
- Secondary windows are used for performing subordinate, supplemental or ancillary actions that are extended or more complex in nature and related to objects in the primary window.
- For presenting frequently or occasionally used window components.
- Important guidelines:

A secondary window can be of following types –

i.Modal and Modeles

3)Dialog Boxes

- Used for presenting brief messages.
- Used for requesting specific, transient actions.
- Used for performing actions that take a short time to complete and are not frequently changed.
- Command buttons to include:OK, Cancel, Others as necessary.

4) Property sheets and property inspectors: they are used for presenting the complete set of properties for an object. Categorised and grouped with property pages, property inspectors are used for displaying only the most common or frequent accessed objects, properties, make changes dynamically.

5) Palette Windows: they are used to present a set of controls and design as a resizable. Alternately, design them as fixed in size.

6.)Message boxes: they are used for displaying a message about a particular situation or condition, command buttons to include: ok, cancel, help, yes, and no, stop, buttons to correct the action that caused the message box to be displayed.

Enable the tittle bar close box only if the message includes a cancel button.

Designate the most frequent or least destructive option as a default command button

7)Pop-up Windows: Pop-up windows are used to display:

- Additional information when and abbreviated form of the information in the main presentation.
- Textual labels for graphic controls.
- Context-sensitive help information.

Q5. Write short note on the following:-

1. Statistical Graphics:
2. Elements of Mobile Design.
3. Icons, images and Multimedia elements for VI design.
4. Screen element organising and ordering techniques.

Ans.

*Statistical Graphics:*

1. Statistical graphics present data and the results of statistical analysis, assist in the analysis of data, and occasionally are used to facilitate statistical computation.
2. Presentation graphs include the familiar bar graph, pie chart, line graph, scatterplot, and statistical map,
3. Date analysis employs these graphical forms as well as other.
4. Computational graphs( “nomographs”) sometimes display data but usually show theoretical quantities such as power curves for determining sample size, Computational graphs are convenient when statistical tables would be unwieldy, but computer programs are even more convenient and nomographs are used with decreasing frequency.
5. This article emphasis the role of graphs in data analysis although many of the considerations raised here also apply to graphical representation.

*Elements of Mobile Design.*

1. The elements that we have selected that need to be examined in a ux context are:

2. Input Controls allows users to input information into the system if you need your users to tell you what country they are in, for example you will use an input control to let them do so.
3. Navigational Components help users move around a product or website. Common navigational components include tab bars on an ios device and a hamburger menu on an android.
4. Informational components share information with others.
5. Containers hold related content together.

*Icons, images and Multimedia elements for VI design.*

1. Icons are simple images used in context to communicate something they are easily recognizable and easy to remember. Digital icons appeared when the first GUI operating systems came out, like Macintosh and Microsoft.
2. Images can clearly reflect object representation they are simple reflect object avoiding excessive detail in images, use perspective and dimension whenever possible.
3. Use graphics to supplement the textual content, not as a substitute for it but ot convey information that can't be effectively accomplished using text limit the use at graphics that take great time to laod. Coordinate the graphics with all other page elements.
4. Multimedia elements like triangular shaped arrows and pause, start symbolic icons can be used for multimedia buttons, these buttons must be interactive and colourful to notice and use them.

*Organising screen elements.*

1. Visual clarity is obtained / achieved when the display elements are organised and presented in a meaning full and understandable ways.
2. Clarify is influenced by factors: Consistency in design, a visually presented composition, a logical and sequential ordering, the presentation at the proper amount of information, groupings, and alignment of screen items
3. What must be avoided Visual clutter created by indistinct elements, random placement, and confusing patterns,

*Ordering of screen elements*

1. Divide information into units that are logical, meaningful, and sensible
2. Order screen units and elements according to the user's expectations and needs.
3. Possible ordering schemes include: conventional, importance, general to specific.
4. Information to be compared on the screen should be visible at the same time,
5. Only the information related to the users tasks or needs is to be presented on the screen.