2.2 Visual Design Principles:

1) Convey a tone / communicate the brand.
2) Lead users through the visual hierarchy
3) Provide visual structure & flow at each level of organization.
4) Signal what users can do on a given screen.
5) Responds to commands
6) Draw attention to important events.
7) Build a cohesive visual system to ensure consistency across the experience.
8) Minimize the amount of visual work.
9) Keep it simple.

(1) Convey a tone / Communicate the brand
The basic visual elements to distinguish levels of hierarchy. The most most important elements could be larger; have greater contrast in saturation value in relation to the background.

(2) Provide visual structure & flow at each level of organization
User interfaces as being composed of visual & behavioral elements, which are grouped & they into panes, which then may in turn be grouped into screens views or pages.

some time it is critical that to maintain a clear visual structure. so that the user can easily navigate from one part of your interface to another as the workflow requires.

Align to a grid: Aligning visual element is one of the key ways that designer can help user experience a product in an organized, systematic way.

Grouped elements should be aligned both horizontally & vertically.

designers should ~~be aligned~~ take care to do the following:

Align labels, Align within a set of controls, Align across control groups & panes.

A grid system is one of the most powerful tools available to the visual designer.

A good layout grid is modular which means that it should be flexible enough to handle necessary variation while maintaining consistency wherever possible.

A grid system in visual interface design provides several benefits.

Usability, Aesthetic appeal & efficiency

(3) Signal what users can do on a given screen:
A user encountering a screen or a function for the first time looks to the visual design to help him to determine what he can do on the screen. Affordance breaks down to design of controls & content categories with layout, icons, visual symbols & by pre-visualing results when possible.
⇒ Use icons, convey a sense of the function Associate visual symbols with objects

(4) Respond to Commands:
After executing a command from a swipe, tap or click, the user needs to see some response, to know that the system has "heard" them. In some cases, the output is instant & immediate.
If the response takes longer than a tenth of a second but less than a second, you will need to provide one subtle visual cue that the command was received & another when the activity is complete.

Draw attention to important events:
Older software was conceived as a tool with users needing to look around to find important system events.
The user is aware that he has two games where his opponents have completed their moves, a few text messages
The tools to draw attention involve the fundamentals of human perception & are all based on contrast: contrast of size, color, motion etc.
Make the thing you want to get attention different & it will command attention.
Minimize the amount of visual work
visual noise within an interface is caused by superfluous visual elements that detract from the primary objectives of communicating affordances & information. Visual noise can take many forms.
- Rule boxes & other visually "heavy" elements to separate controls.
- Crowding of elements
- Intense of colors, texture & contrast
- using too many colors
- weak visual hierarchy.

Keep it simple.
In general visual interfaces should strive to be minimal, such as simple geometric forms or restricted color palette composed primarily of less-saturated or neutral colors balanced with a few high-contrast accent colors that emphasize important information.
Typically one or two typefaces, specified to just a few sizes is sufficient for most applications.

⇒ Information Design & Data Visualization Interaction Design:

* Information design comes down to making decisions about how to present info so that people can use it or understand it more easily. Sometimes information design is visual. Pie chart is the best way to present the data.
* Information design involves grouping or arranging pieces of information. which often take this aspect of design for granted because we used to see common information grouped in a certain way
for ex:
state

- Job title.
- Telephone number
- Street address
- Name
- Zip code etc

Above one seems to be little confusing. Its arrangement could be clarified further.

- Personal Information
  - Name
  - Job Title
  - organization
- Address Information
  - street address
  - City
  - state

* The key ofcourse, is to group & arrange the information elements in a way that reflects how your users think & supports their task & goals.
Information design plays a role in interface design problems because the interface must not only gather information from the user, but communicate information to the user as well.
* ~~Information design plays a role in interface design principle~~

The system has to give the users some information for them to use the interface successfully - whether it's because they made a mistake or because they're just getting started - that's an information design problem.

Wayfinding

* One important function that information design & navigation design work together to perform is supporting wayfinding - helping people understand where they are & where they can go.

The idea of wayfinding comes from the design of public spaces in the physical world.

for Ex: will sometimes use color-coding to give people cues to help them remember where they left their cars. In airports, signs, maps & other indicators help people find their way around.

Data visualization could encompass graphs, timetables & charts that evolve as more information is added. you use to keep jobs on track, a speedometer or price list.

UI Elements & Widgets:

UI Elements:

UI elements are the building blocks of apps & websites. They are what users interact with when they are using the element product. They click on button to sign up, they use navigational components to switch between pages etc.

3 Types of UI Elements:

Input Elements: users Interact with them to put in their information or move to the next step.

Output Elements: Those elements show the result of a previous user action.

Helper Elements: Further divided into navigational, Informational & containers they help to move through the digital product, get information & point user's attention to some element.

1) Input Elements:
Dropdowns, Combo boxes, Buttons, Toggle switches, Text fields, Data pickers, check boxes, Buttons, Toggle switches, Text fields, Data pickers, checkboxes, Radio button, Confirmation ~~diag~~ dialogues.

2) output Elements:
o/p elements are responsible for showing results against various inputs. They also show alerts, warnings, success & error messages to the users. o/p elements aren't neutral by nature.
They rely on i/p & various operations.

3) Helper Elements:
All other elements fall into this category.
The most widely-used helper elements include:
- Notification: Messages or alerts that appear on a user's device or screen to inform them about important or relevant information.
They can include updates, reminders, or warnings & are often designed to grab user's attention.
- Breadcrumbs: small navigational elements that show the users current location

within a website or application. They typically appear as a trial of links at the top of a page.

- Icons: Graphical symbols or small images used to represent actions, objects, or concepts. Icons are commonly used in menus, toolbars & buttons.
- Sliders: UI elements that allow users to select a value from a continuous range by dragging a handle along a track.
- Progress bars: visually represent the completion status of a task or process. They typically consists of a filled-in portion that grows as the task progresses.
- ToolTips: small, contextual messages that appear when a user hovers over or clicks on a specific UI elements. They provide additional Information or Explanation about the purpose or functionality of the element, aiding user understanding & interaction.

Navigational UI Elements:

Navigational components simplify moving through the site, desktop or mobile app or any other digital product.

Common Input UI Elements:

Checkboxes:

Checkboxes allow the user to select one or more options from an option set. It is always be the best practices to display checkboxes vertically. multicolumns are also acceptable considering the available space & other factors.

Dropdowns:

Dropdown allow users to select one item at a time from a long list of options. They are more compact than radio buttons. They also allow to save space for better UX its necessary to add a label & a helper text as a placeholder

Combo Boxes:

Combo box allow users to either type a custom value directly or select a value

from the list. It is a combination of a drop-down list or list box & a single-line i/p field.

Buttons:
Buttons allow the users to perform an action with touch or click. It is typically labelled with text, icon or both. Buttons are one of the most important parts of a UI. So its important to design a button that the user will actually click

Radio Buttons:
Radio buttons allow users to select only one of a predefined set of mutually exclusive options.

Breadcrumbs:
Breadcrumbs allow users to see their ~~the~~ current location within the system. I provides a clickable trail of proceeding pages to navigate with.

Search Field:
A search bar is usually made up of 2 UI elements: an i/p field & a button, allow user to enter k/w & submit it to system.

Widgets

⇒ Menu design

Menus provide users with a choice that can be a choice of cmds or a choice of options related to a cmd.

They provide the means by which the user can perform actions related to the task in hand & therefore are based on task structure & the inf^n required to perform a task.

Menu may be designed as drop-down, pop-up or single-dialog menus.

If you want to make the application easy to use & provide user satisfaction.

Some important points must be taken into account.

for Eg: For pull-down & pop-up menus, the most commonly used functions should be at the top, to avoid frequent long scans & scrolls.

⇒ Edit Contact & Delete Contact

Finding other people's engagements could be generalized to a simple search options that led to a dialog box in which the search parameters are specified. The search option may be

better represented as option of a tool bar that as menu items of their own.

⇒ Icon design:
Designing a good icon takes more than a few minutes. You may be able to think up good icons in a matter of seconds but such examples are unlikely to be widely acceptable to your user group.

⇒ Information Display:
The relevant information is available for the task is one aspect of information display.
for ex: data i.e ~~data~~ discrete in nature such as sales figures for the last month, could be displayed graphically using a digital technique, while data i.e continuous in nature, such as the percentage increase in sales over the last month, is better displayed using an analog device.