4 point grid system.

1. Padding & Margin.
   - Padding is the space between an element and edge of its container or Inner space of an element.
   - Margin is the space outside an element.

   - We need a spacing system!
   - We can use a Grid system to create appropriate spacing:

   [
   A grid system in UI design is a framework
   used to structure and organize content
   on a web page or app interface.
   ]

   - There are many Grid System to choose from such as 4 point, 8 point & 10 point.

           Most Popular one are 8 point & 4 point.

   256px   224px   192px   160px   128px   96px   64px   32px

   - This system is based on the idea that elements on a screen should be aligned and sized base on the 4 or 8 px square grid.
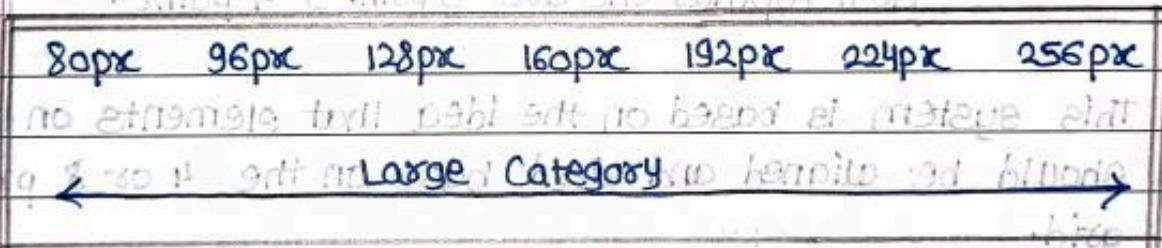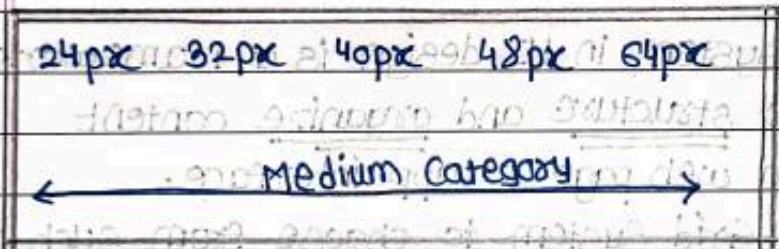   - So that all values like padding, margin & height should be in multiple of 4 or 8 px.
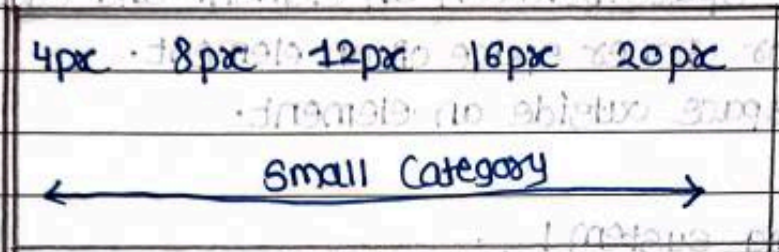
   * USECASE *

   * Friday December 8 * :10:23 am.
   * Day 4 *

   - many designers use 8 point grid system.
   - But it can't offer us 4px when we need to create small elements.

# 4 point grid System.

```
┌─────────────────────────────────┐
│ 4px   8px   12px   16px   20px   │
│                                  │
│         Small Category           │
│  ←───────────────────────────→   │
└─────────────────────────────────┘
```

```
┌─────────────────────────────────┐
│ 24px   32px   40px   48px   64px │
│                                  │
│        Medium Category           │
│  ←───────────────────────────→   │
└─────────────────────────────────┘
```

```
┌──────────────────────────────────────────────────┐
│ 80px   96px   128px   160px   192px   224px   256px│
│                                                    │
│              Large Category                        │
│  ←──────────────────────────────────────────────→ │
└──────────────────────────────────────────────────┘
```

**\* Usecase \***

1. Small Category : You can use the small range for spacing
   between very related elements.
   - Ex: Padding & Margin within a component
     like a Card, Textfield or Button.

2. Medium Category : The medium range could be used for
   related elements like padding & margin
   of large containers.

3: Large Category: And the large range can be used for
unrelated elements like spacing between
large components or different section
of the page.

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| 10 :     Grid |
| UI Design Principle. |

- Grid helps designers to create unified layouts fasilitate users navigation and interaction within interfaces.
- A grid gives our design a clear structure and helps user scan the content easily.

- What's a Grid?
- grid is a set of columns or rows that helps designers align and organize elements within a layout.
- There are many types of grids that we can use in our projects! Depending on our needs.


- Let's see most common types of Grids in Design *


1. Column Grid: This is a grid that Divides a Page into vertical columns of equal or varying widths.
In the past it was often used in web designs but nowadays its used in mobile applications design as well.

2. **Modular Grid**: This is a grid that uses both horizontal & vertical divisions to create modules or blocks of content that can be arranged in a variety of ways.

   - This are best when you want to list many repetable items on a page like for an E-commerce website.

3. **Hierarchical Grid**: This is a grid that uses sizes & placement to create a visual hierarchy of information.

   • In this type of grid the pieces & type of content are organized based on level of importance. So most important elements take up the biggest part of the grid.

4. **Baseline Grid**: This is a grid that aligns text & other elements to a consistent baseline creating a sense of rythm & harmony.

- When it comes to grid there are 2 properties that you should know about:

     1. Gutter & 2. Margin

   • Gutter refers to the empty space between columns or rows and it helps to create visual & breathing room and prevent the design from looking cluttered.

   • The margin is the space outside the edges of the grid. Its the area between content & edge of the screen. margins are used to create visual boundaries between the content & edge of the layout.

## 11. Consistency.
### UI Design Principle

- Consistency in UI Design refers to The use of a

> The use of a consistent style,
> language, and behaviour throughout an
> application or website.

• Let's take an example of a Mobile Application of social media platform to understand consistency:

- In this case it would mean to maintain uniform, visually interactive design throughout the application.
  • This could be acheived by using consistent design pattern:
    • Placement of navigation bar
    • Size & style of Buttons.
    • use of icons & symbols.
    • use of color, Typography,

- Consistency in language and tone is also crucial for any project.

## 12. Laws of UX
### UI Designing Elements.

UX laws are a set of principles that guide the design and development of user-centered digital products, websites, and interfaces.

- These laws are based on research & testing.

> They aim to create products that are usable, efficient, effective and satisfying for users.

### 1. Hick's Law
### (Hick - Hyman Law)

- It states that the more choices is given to user the longer it will take them to make a decision.
- ∴ Designers should aim to reduce number of options presented to the user to ensure a faster decision making process.

Navigation Menu: No of options should be reduced while creating them.
- Consider grouping related items together and presenting them in a smaller more manageble sub menu's.

## * 2. Fitt's Law *

- The time required to move to a target area is a function of the distance to the target and the size of the target.

$$T = a + b \, \log_2 \frac{2D}{W}$$

- In simple term.
- This means that targets that are larger and closer to the starting point will be easier and quicker to select than targets that are smaller & further away.

- Example of: Button size & Placement
  - Menu Items.
    - Interactive elements.

## * 3. Jacob's Law *

- This law says that users spend most of their time on other websites so they expect your side to work the same way.
- It says we should be consistent in our
  1. Layout
  2. Navigation
  3. Functionality

# * Gestalts Principle *

1. **Proximity:** Objects that are close together are perceived as same groups.

   - For example: A list of items that are grouped together by their proximity to each other will be perceived as related.

   Even if they are not explicitly labeled as such.

2. **Similarity:** This principle states that object that have similar and visual characteristics are perceived as belonging to the same group.

   - For example: Set of icons that are all same color and shape will be considered as same group.

3. **Continuity:** This principal states that objects that are arranged in a smooth continuous manner are perceived as belonging to the same group.

4. **Closure:** This principal states that humans tend to perceive incomplete objects as complete.

   : For Example: a logo that uses -ve space or letter can create image in the mind of the viewer.

5. Figure - Ground: This principal states that humans tend to separate visual into figure the object of focus and ground background or context.

6. Common - Region : This principal states that object that are located within a common boundary or region are perceived as a group.