

# User Interface Design

User interface design is the design of user interfaces (UI) for machines and software, used on computers, smartphones, and any other electronic device. The goal of a user interface is to maximize a user's ability to access all necessary components of the intended application or website with less effort exerted by the user; as a developer, you want to create something beautiful that somebody with any previous experience of interfaces would be capable of using. Using an interface should be an enjoyable experience, the user shouldn't be stressed out or annoyed by the UI, and its inability to present the necessary information in an aesthetically pleasing and efficient manner. There are no steps to design that are set in stone, but crucial things that should be considered are:

1. *Who are you designing for? What do they do? Why do they need the product? Research is vital.*
  2. *Make a list of the goals you want the UI to accomplish and decide upon your minimal viable product (MVP), or a product that meets the minimum requirements needed. Less is more. Start Simple. People get confused when too much is presented. Make it crystal clear so there is absolutely no confusion for the user. It's about the people you're building the product for.*
  3. *Always go back to the original purpose of the interface, even when you think you have a perfect design. Always make sure you can't make it better to accomplish the goals you originally had for the interface. Iterate often to get the best possible product.*
  4. *"The purpose is the primary condition of designing, everything else flows from it."*  
- Charles Eames
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Anyone interested in designing software that uses UI's to communicate with a user should learn what's important to creating a useful and beautiful UI. No UI is the same, and that is why everybody's design process is different. The following topics are important to think about and will be covered:

1. *Designing the UI*
  - a. *Importance of establishing a design before production*
  - b. *Simplicity*
  - c. *Consistent page layout*
  - d. *Ways of actually creating a design*
2. *Design Ideas and Components*
  - a. *Colors*
  - b. *Typography and font*
  - c. *Menus, Text boxes, Notifications, etc.*
3. *Highlighting of Components*
  - a. *What users expect*
  - b. *Mobile and web expectations*
  - c. *Feels smooth to use and navigate*
  - d. *Approachability*

# 1. Developing UI Design

It's important to have an idea and design expectations before actually jumping into the process of creating your design. A good rule to live by in the design world is to keep it simple, at least in the beginning. Creating a simple and effective product from the get go gives room to expand and scale later. The most effective interfaces are the ones that the user doesn't even notice or make a note of; simple UI's don't contain unnecessary aspects that the user must deal with. Consistency of page layout is important to any interface. Every page should have the same general layout, color scheme, and fonts. There should be no noticeable difference between each page other than the information presented. 2 ways of actually drawing out and creating the design of a UI are; written out drafts of what you want in your UI, even un-detailed drafts can help blossom new and better ideas, and using web apps specifically created to make the design of web sites, interfaces, and technical projects more effective and easier. These apps give the ability to create precise lines, colors, fonts, and essentially every aspect of what you envision your end product being. The following are useful websites for creating a UI layout:

- ☐ Wix
  - ☐ WordPress
  - ☐ Squarespace
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# 2. Controls and Components

## ☐ Color and texture:

- ☐ Color choice is one of the most basic and important elements of designing anything that appeals to sight. It's important to limit the number and variation of colors used in an interface. Using even as many as 5 colors on a page can eliminate the power you have to highlight important items to a user; for example, if you have one color that stands out from the rest you use, you can use it to attract a user to something such as a menu, or button with it. So once again, keep it simple, and don't use too many different colors. Colors can convey different feelings naturally to the human mind, and you want to use colors that relate to your product. Some important examples of color association to keep in mind are:

- ☐ Red -> pain, hostility, passion, and love
- ☐ Orange -> joy, sunshine
- ☐ Blue -> depth, stability, coolness
- ☐ Yellow -> joy, energy
- ☐ Green -> growth, nature, freshness
- ☐ Purple -> royalty
- ☐ White -> innocence, purity
- ☐ Black -> power, death

It is also important to avoid assaulting the user with an obnoxious color layout. Some important rules to live by when deciding on colors are:

- ☐ Do not use light colors on a white background
- ☐ Do not use neon or rainbow colors
- ☐ It is not useful to use textured backgrounds with text on top

- ❑ Extremely bright or dark colored backgrounds are hard on the eyes
- ❑ Do not mix green and red; green and red are un-differentiable to the color blind.

## ❑ Typography and Font

Font is the heartbeat of a UI, alongside color choice, it is crucial for the font of an interface to be appropriate. First of all, it is important to understand the difference between fonts and typefaces. A font is a group of many different typefaces that are related back to a single font due to having similar characteristics; and a typeface is a specific member of that font. There are two distinctively different styles of fonts; Serif, and Sans Serif. The difference between the two is that serif fonts have serifs, or “tails” at the end of each stroke of a letter. Sans serif has no serifs, or “feet,” as shown in the image below.

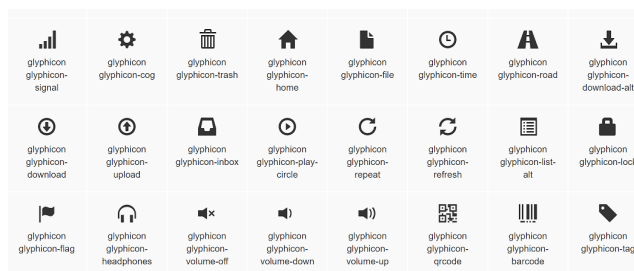


It's also important to understand what fonts are appropriate and when they should be used. A difficult to read font should never be used, no matter how artsy or creative it looks. Sans serif is the most commonly used font style for digital interfaces due to the easiness of being read on a screen; and it is recommended that it be used. Consistency is key with font and typography. When you decide on fonts for a UI it can be useful to decide which fonts are going to be used for headers and paragraphs before actually designing; it makes it easier to stay consistent throughout. Fonts used for headers should all be the same, and fonts used for body paragraphs should all be the same.

## ❑ UI Components

There are a few components that are typically found in every interface and should be considered

- ❑ Glyphs: Symbols and icons to be placed in a UI to be used typically as a button and link to another page. Examples:



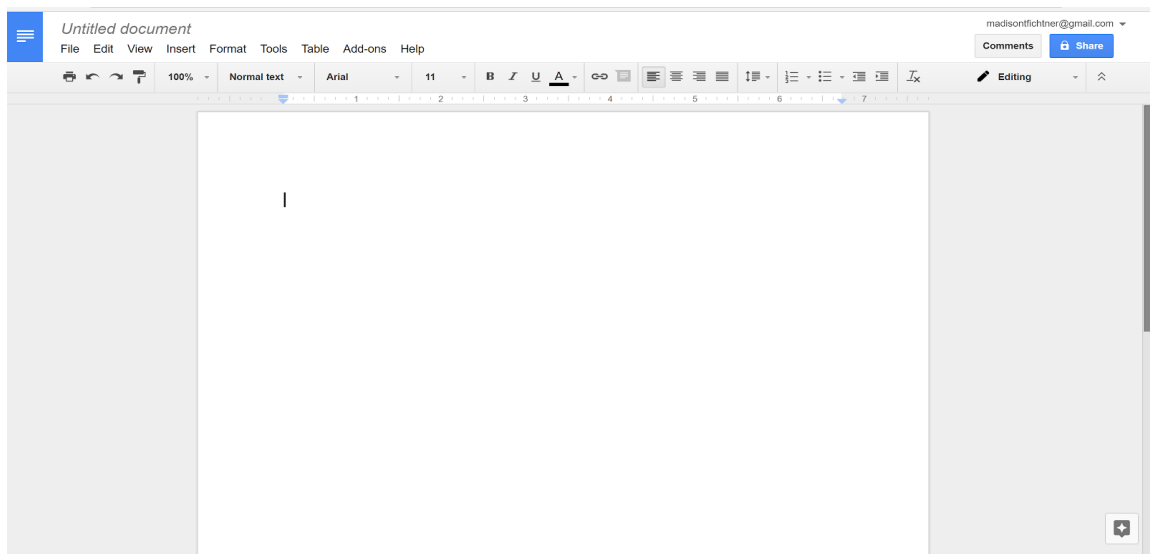
From bootstrap.com

- ❑ Dropdowns: Used to display dropdown lists of links
- ❑ Thumbnails: Creates a grid of boxes that can be filled with images, or text
- ❑ Menus and Navbars: Navbars are a responsive component that are used as navigation headers that drop down a menu of options

## ❑ Hierarchy of Components and More Page Layout

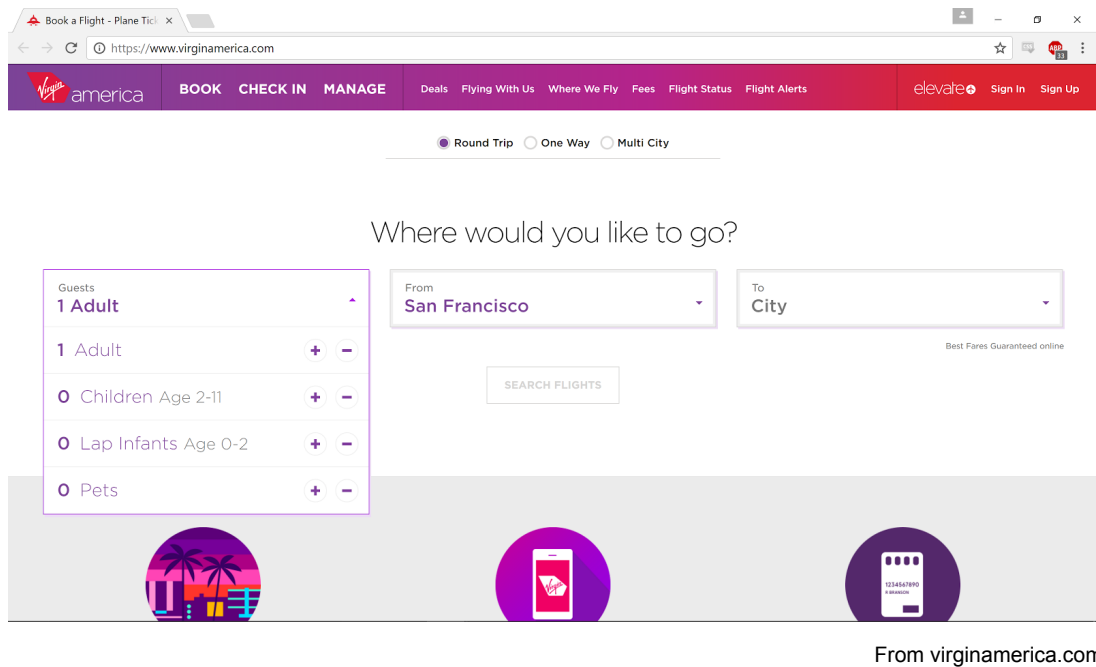
Hierarchy of components is essentially the power a designer has to make a specific component that they feel is important such as a certain button or menu, stick out to the user. As a designer you have to understand what parts of the UI are most important to the user. Use of color and font is a possible way of highlighting an important component on an interface. A user may not even notice that something is highlighted or different from the rest of the page if it is done well; but it is extremely helpful to a user if the main components of the interface are easily found and pop out to them.

- ❑ A useful and common example of creating hierarchy is:
  - ❑ Making a button or menu a different, but appropriate color from the rest of the page to attract a user. For example, on Google Docs you can see that two of the most important functions; the menu in the top left, and the share option in the top right are a vibrant blue that catch a user's eye.



From docs.google.com

The more simply laid out and easily understood an interface is, the better. A user expects to be able to find exactly what they need when they use a page without any trouble. Not all interfaces are used to do fun things, but if they are designed well, it can make something even as mundane and awful as buying a plane ticket somewhat fun and enjoyable. For example, the airline company Virgin America, has a very effective and beautiful website. It is very straightforward and there are no questions the user has to ask in order to use it. On the next page, we will specifically examine Virgin America's website.



- ❑ It is very colorful, but it's only one color gradient and it doesn't limit their ability to highlight important functions.
- ❑ The company took something awful, (buying airline tickets,) and made it easy and less stressful to do with the very simple layout of the page and the aesthetically appealing design.
- ❑ The font and typography are consistent throughout the page.
- ❑ There are no questions on how to use the page.
- ❑ More specifically, the dropdown for Guests, From, and To look and feel great.
- ❑ All the information a user could want is easily accessed through the menu across the top of the page.

### 3. Conclusion

Once again, the most important things to think about when designing a UI are:

1. *Who are you designing for? What do they do? Why do they need the product?*
2. *Less is more. Start Simple. People get confused when too much is presented. Make it crystal clear so there is absolutely no confusion for the user.*
3. *Always go back to the original purpose of the interface, even when you think you have a perfect design. Always make sure you can't make it better to accomplish the goals you originally had for the interface.*
4. *The purpose is the primary condition of designing, everything else flows from it.*

To accomplish these goals, take into consideration; colors, fonts, page layout, what a user will expect, components, and how it is best to establish a hierarchy of important items. It is also good practice to examine other interfaces and sites and think about what ideas you like about them and use these ideas in your own interface.

Some more useful sources for designing pages and UI:

- ❑ <https://www.behance.net/gallery/7226653/Medium-Brand-Development>
  - ❑ <https://design.google.com/resources/>
  - ❑ <https://material.google.com/>
  - ❑ bootstrap is an extremely useful source that can be used to explore design components for specifically webpages and applications; it gives examples that can be used as tutorials for many different aspect components
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