

Independent Study

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05/03/19

# Table of Contents

• Abstract	Page 2
• Project Narrative	Page 3
• Body of Research	Page 4
• Summary of Research	Page 15
• Works Cited	Page 16

# Abstract

This independent study was conducted towards researching optimal UX design techniques. With these findings, I intend to provide a framework of how to design successful applications and products, thus combining my knowledge in software development with my passion for art. As an aspiring front-end developer, I wanted gain a better understanding of how to create effective, user-friendly designs. Although I have been fortunate to have studied both coding and visual art, I have yet to delve into coursework that tackles the intersection between those two areas of study. Through this independent study, I will gain a better understanding of where these two fields coincide, as well as provide my fellow developers a basic framework on how to apply successful visual design when developing products. Moreover, I will take these findings I make in this research with me and apply them to future projects.

I found my sources primarily through Medium, a publishing service for articles and news on topics including politics, culture, and technology. My Digital Media professor, Joyce Epolito, recommended this website as a source because of its relevance in the design world. A designer herself, Joyce suggested that the articles I would find there would grant a better understanding of visual design in the context of the user experience. Thus, I found a plethora of works and findings on design from successful designers around the world.

# Project Narrative

## Goals

My goals for this project were to gain a better understanding of core design principles, as well as establish a set of guidelines for fellow developers to be able to follow in order to create user friendly products. I aim to utilize these techniques to both web applications and mobile applications. Specifically, for this body of research I aim to apply my findings to a productivity application aimed at helping to track groceries and meal-prepping. Creating such an application would provide a great opportunity to apply my findings.

## Aspirations for the research

This project was intended to help outline how one should go about designing the front end of any user-friendly application. The user experience is quintessential when designing applications of any kind. Yet, when talking to fellow developers in my major and field, I find that many of them agree that it can be difficult to navigate user friendly design. Thus, with this body of research I will be creating a set of design guidelines that will help both me and my fellow developers apply design principles to our projects.

# Body of Research

## The UX Design Process

<https://uxchecklist.github.io/>

The UX Checklist is a resource I came across through my readings on Medium. It is an interactive checklist produced by designer Andrea Soverini to help UX designers keep track of where they are in the UX design process. It details the various steps necessary to ensure a successful design process.

However, Soverini admits that "the goal was just to get our team to \*think\* about each step, the actions following was for us to decide" (Soverini). This means that the list was created in order for designers to act thoughtfully when creating a product, but, at the same time, not every step is obligatory for every product: it is up to the designer to determine which steps are ultimately necessary for the product that they intend to create, but considerations for each step ensure a better product. The steps can be summarised as follows:

### 1. Research

This step details the very preliminary steps one should take in the UX design process. It includes Competitive Analysis, Data Analysis, and User Feedback. The research in this steps helps designers understand the scope of the product they intend to design: the problem they intend to solve. This involves studying how the problem has been tackled before, relevant past data & performances, as well as feedback from real customers. This is all of paramount importance in order to proceed with the next step.

## 2. Plan

Here, the designer begins to create an outline for the product shrewdly and carefully. It includes creating User Stories, User Flows, and Red Routes. User Stories are personas of potential customers. These are developed to gain better insight on who exactly will be using the product and how to handle and understand their experience. A User Flow is a diagram of the flow of the user's experience based off of probable scenarios drawn from the User Stories. Red Routes are the key tasks that users want to carry out with the product. Drawing this distinction out is important in creating constraints for the product. This is necessary in order to prevent the scope of the product from going out of hand, and keeping the product feasible to produce. These steps all contribute to a streamlined development process down the line, and keeps the product feasible and realistic.

## 3. Explore

The designer starts the brainstorming process for what the product will be in this step. It includes Brainstorming & Sketching, Wireframing, and Prototyping. I conducted the application of my research in this independent study through these steps, as these are the ones that interest me the most. Brainstorming & Sketching is the idea-making process. Here, designers will sketch, physically or otherwise, what the product could look like, and debate the feasibility of different ideas. Wireframing is drawing up flow diagrams for the scope of the product either on paper or digitally. Prototyping is creating pseudo-functional versions of the final product. This allows designers to test out the flow of the product.

## 4. Communicate

Communicating focuses on streamline the communication between the product and the user. It includes Information Architecture, Language, and Accessibility. Information Architecture (IA)

describes the strategies used to deliver content as well as explain the purpose of doing so. Language entails the word choices used when producing or translating content. These choices should reflect the brand and culture of the product. Accessibility refers to how usable the product and its content is: the content of the product should be accessible to those who need or desire to use it.

#### 5. (Considerations)

Although titled with a heart symbol, I understand this series of steps to represent the implications and considerations that must be taken into account when creating any product. This section focuses on making the product Sustainable, Ethical, and Inclusive. Sustainability refers to how the product should reinforce green behaviors and best practices. The product should be made Ethical so that the product is secure, safe, and honest. The product must be made inclusive in order to prevent the biases of the designer from getting in the way of the product.

#### 6. Create

This part of the checklist talks about the process of creating elements that will make the product. This includes UI Elements, Gestures, and Responsiveness. UI Elements are the main, frontend elements that will populate the product. These elements should be made cohesively, and their styles and guides should be reused throughout the product whenever possible. Gestures pertain to the interactivity of the product. Responsiveness refers to the compatibility of the product: is the product cross-platform compatible?

#### 7. Give Feedback

Giving Feedback is an important part of UX. Designers need to be honest and upfront with customers when possible. This area includes Waiting Times, Errors, and Completed Actions. Waiting Times means the time that users will spend waiting for elements or pages to load. This can be remedied by

implementing waiting messages or loading bars to keep users entertained. Errors refers to being honest with customers about errors in the software: these should be honest for the satisfaction of the customer. Completed Actions describe giving users immediate feedback for their successful actions in the product. This is important in order to keep the user engaged.

## 8. Finalise

This step describes the finalization of all design choices of the product, allowing designers the space to add finishing touches to accentuate the product. This step includes Finalising Layout, Use of Images and Icons, and picking Fonts, Colours, & Hierarchies. Finalising the Layout means thinking critically about layout choices and determining which one is the best one for the product. Use of Images and Icons means fine tuning the small but important elements that define the application: an astute choice of images and icons can solidify the brand of a product. Fonts, Colours, & Hierarchies are the crux of the style of the product. It is very easy to overlook these aspects of a product, but picking these very intentionally is quintessential to the success of a design.

## 9. Delight

At this point, Delight refers to the fine-tuning of the product through Micro Copy, Micro Interactions, and Transitions. Micro Copy explains how use of language and design can evoke a powerful emotional response from users if used strategically. Micro Interactions are the little pieces of functionality that are not the main focus of the product. Ensuring that these are functional and crisp will help users distinguish your product from competitors'. Transitions speak to the grammar of motion of the product. The gestures should be made meaningfully. These small attributes of a product can bring the design above and beyond.



## 10. Analyse

The final step details the analysis of data that will be attributed to the product. It includes the Key Performance Indicator (KPI), AB Testing, and Testing. The KPI step refers to how the UX designers wish to determine the success of their product. AB Testing is conducting tests on users in various control groups. Testing is bringing the product to its limits to improve functionality and encounter as many problem cases as possible.

## Colour

Colour is a powerful tool that can evoke all kinds of emotions and sentiments from people. Here are the findings of my research on the psychology of colours. The initial aim of this research was to determine what kind of colour scheme I am going to use for my later project, however I found that this information would be beneficial for any kind of project moving forward.

I will detail options, and describe what they have to offer

### Red

Red tends to be associated with passion, anger, or love. It is a very eye-catching colour, and is used with products that relate to high-intensity including cars. It can come across as very aggressive, which is a trait that can be strategically harnessed.

### Purple

According to my research, purple tends to have the property of inspiring creativity as well as tranquility. It draws from the harmony between red and blue, thus establishing a balance between two

typically strong colours. It can also represent luxury due to its correlation with royalty, thus being used in products referencing prestige.

## Blue

Blue is a very popular colour among designs. It has soothing qualities, and when used with a lighter value, it is naturally pleasing to the eye. It also can represent trust and stability: this directly correlates to why both Facebook and Twitter utilize blue.

## Green

The colour green relates to nature and growth. It references feelings of harmony and tranquility. However, at the same time, a harsh green can also manifest ideas like greed and envy. This colour is often used for food companies.

## Yellow

Yellow is a very happy and positive colour. Its presence alone can uplift someone's mood. This makes it a good choice for app logos. However, it also has the tendency to cause attention fatigue, so it is not a good choice for an app's background or main colour scheme.

## Researching Prototyping

I taught myself how to create interactive products through Adobe XD in order to implement the stages of my research. The following images show some example prototypes I developed over the semester, implementing the design principles I researched. I really enjoyed this part of the research

process, and I think that fleshing out a good prototype can really help determine the vision of a project

# Jelly Tweets

Enter your tweet here!

CLICK TO CHECK TWEET

[Text Area]

Clear

## Mentions

Clear

## URLS

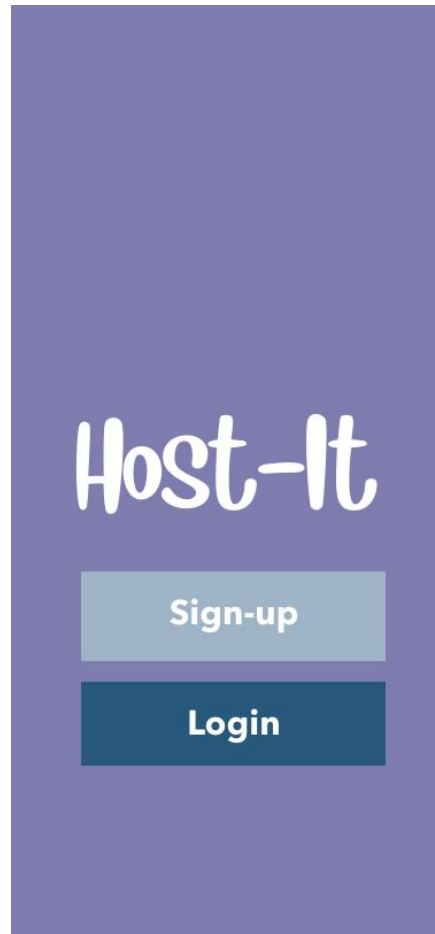
Clear

## Topics

Tweet components will appear on jelly cubes in these areas, where users can interact with them and clear them.

## Jelly Tweets

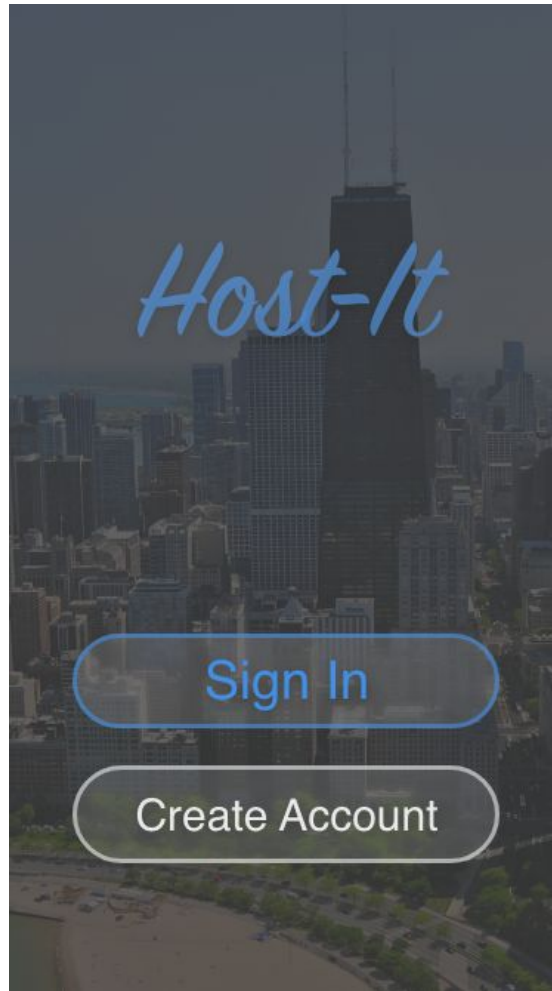
This prototype was developed for a Software Engineering (COMP 330) project, a twitter parser with interactivity. Here, the idea was to clearly mark where the different elements of the parser would appear. I achieved this by writing placeholder texts and clear instructions to lead the user. The color palette and font choice here was directly drawn from the Twitter branding. I used Twitter's official hex-code colour.



### Host-It (First Draft)

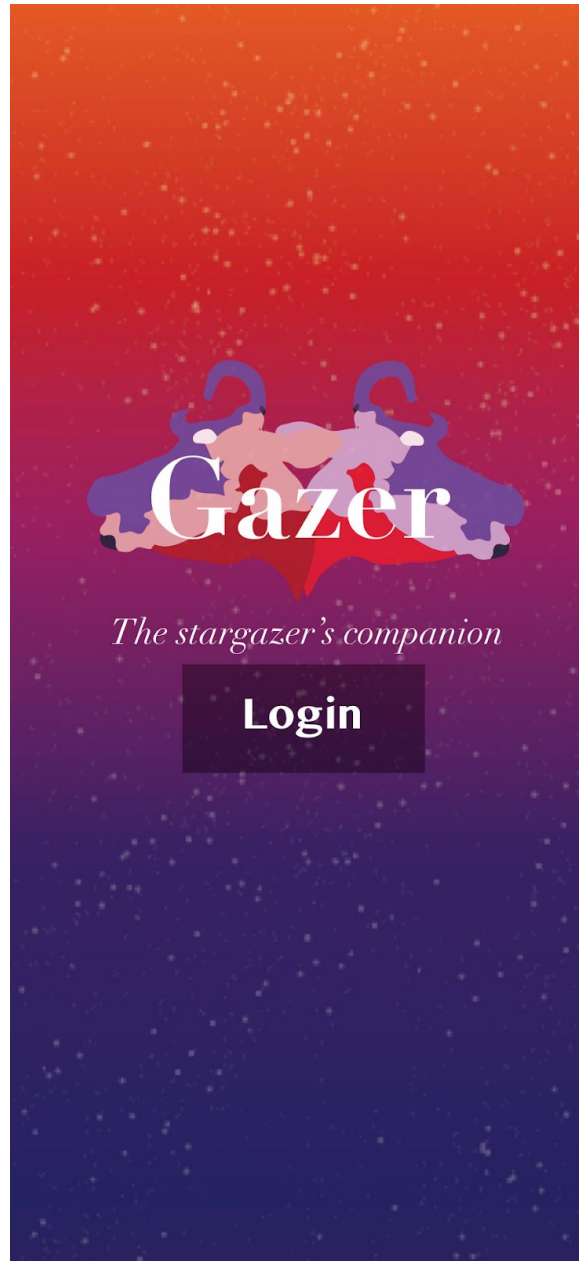
This prototype is an early draft of prototypes for my final Software Engineering (COMP 330) project.

It was an event planner application. This design was inspired by a soft, pastel colour palette. We decided to try this look because we agreed that the colours are pleasing to the eye. However, we eventually moved to a darker, more minimalist look as mentioned later on.



### Host-It (Final Prototype)

This login page demonstrates the final look that we agreed on for our COMP 330 final project. It uses a dark, minimalist design with a classy look. We used the Chicago skyline for a background image to reinforce the modern feel of an application. After developing this prototype, we moved forward with the development of our application.



## Gazer

This prototype was developed for my Digital Media 2: Vector class (FNAR 234). The idea for the assignment was to establish a brand and create a line of products to support it. The brand I decided to create was a line of products and events for stargazers. One of the products I chose to create was an application that helps people keep track of upcoming meteor showers. I demonstrated a design for this

application by creating a prototype. I used a combination of Serif and Sans-serif typefaces to create contrast between the different elements of the application. This guides the viewer's eyes and interactions throughout the application. I took a colour palette inspired by the night sky and sunset. I imagined that the application would be used at night, so I made the text larger and white to increase visibility. This is an important consideration, as all products are used contextually.

## Summary of Research

Overall, this body of research was very interesting, and I was able to discover a lot about the world of visual design that I can further apply to all of my future software projects. I was able to do a cursory body of research on the psychological effects of colours, and I can use this information to make informed decisions about colour palettes that I will pick for future applications. Getting experience in creating prototypes with Adobe XD was a very beneficial experience. I was able to get hands-on experience in making the prototypes, and I was able to apply what I have been reading about this whole semester. It really gave me the opportunity to see these UX concepts in a very tangible way. Overall, I would say that this independent study was an overall success. It gave me an opportunity to research the intersection of my two passion, and apply what I found to personal examples. I hope that readers of this work find what I found a helpful resource or an encouraging launch point for others to begin their own, further research into effective visual design.



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