Smart Colors: An Intelligent Color Choice Companion Tool

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Abstract
We are surrounded in a world of numerous colors and whether we realize it or not, colors affect us in a lot of ways. It is very interesting to understand how colors influence, inspire and impact our behavior, actions and decisions. Topics like color psychology and color emotions are deeply intriguing in order to understand the association of colors with respect to the psycho-aesthetic relationship. Colors play a very important role in our lives by affecting us on a subconscious level, well beyond the scientific understanding. Colors have even known to have an impact in healing and therapy. Color plays a critical role in design of spaces, digital works, art, products, services and systems. Colors also have a huge impact on trends, lifestyle, health, personality and mindsets. This paper outlines the methodology to create a tool which helps understand which colors are ideal to be used in certain scenarios coupled with the reasoning behind using certain colors to showcase specific outlooks. This tool would help designers, creators and brands to grow their businesses and create the right appeal for their viewers, users and customers.

Author Keywords
Color Psychology; Color Emotions; Color Theory

Figure 1: Picture showcasing the confusion of picking colors when working on a digital project. Source:https://www.ainayem.com/what-color-to-use-in-website-designing/

Figure 2: Psychological experience of colors that can affect mood and emotion. Source:https://www.truevaluepaint.com/color-101/color-psychology/

Introduction

When starting out, businesses often face trouble deciding which colors to use for their logo design and brand guidelines to create the right impression in the marketplace. Designers are often faced with confusion when picking color palettes for their designs. Colors chosen for many projects are often not optimized for color blindness. The wrong colors put off buyers and create an unsatisfactory user experience. While working on a personal project, we are often confused about which colors to pick. All of these issues arise because of the lack of awareness about color theory and insufficient understanding of color psychology in different scenarios. There are certain online tools which generate random color palettes but they do not help the user to understand why certain colors are better in specific situations due to the feelings which arise in the user's mind while viewing the specific colors. Every color has a very deep scientific theory of wavelength and frequency and they affect the human body in multiple ways. It is important to understand these notions in order to use colors effectively.

This paper outlines the concept of creating an intelligent color companion tool which asks for specific input categories from the user to understand the need and requirements. The input information provided would help the tool to understand about user preferences, area of usage and other required details. Once those inputs have been received, the tool analyzes the data, processes the information and displays the best colors that would be ideal to use in this scenario along with reasoning behind using the specified colors. It would help the user understand the significance and importance of using the chosen color palette. The tool would help create awareness about color emotions and also educate the user about choosing the right colors. The tool would also have other features like seeing different color palettes used in specific scenarios for better understanding of colors. It would also include educational engaging interactions to create better understanding of color theory and awareness of color psychology concepts.

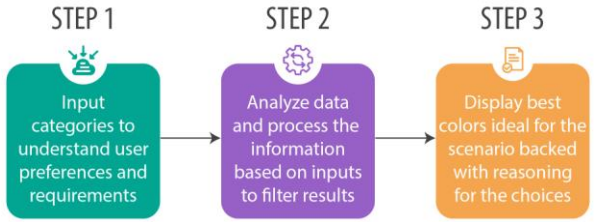

Figure 3: Showcase of the three step process which involves input data, analyze information and show results

The true value of this tool lies in the aspect of customization to numerous different avenues and requirements right from design to products to spaces and systems. The most important facet is that of personalization wherein the tool attempts to understand your preferences by analyzing your choices through the input categories. The current existing solutions in the market attempt to give pre-defined color palettes but they do not try to understand user preferences and requirements nor do they explain why certain colors are better suited in certain situation and herein lies the key distinction. Colors are very subjective in nature hence it is critical to understand how colors can appeal to different audiences. The common patterns emerging in this study will pave the way for the working of this tool efficiently.

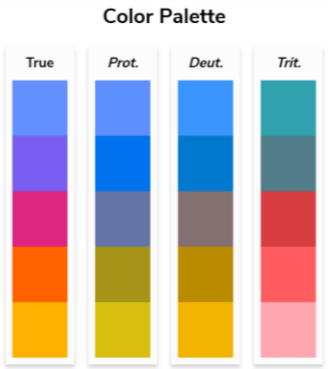

Figure 4: Understanding the difference in color perception for different types of color blindness compared to normal vision. Source:https://davidmathlogic.com/colorblind

Methodology

The concept for creation of this tool would involve following a UX design methodology and applying the principles of inclusive design. It would include the steps as outlined in the following diagram.

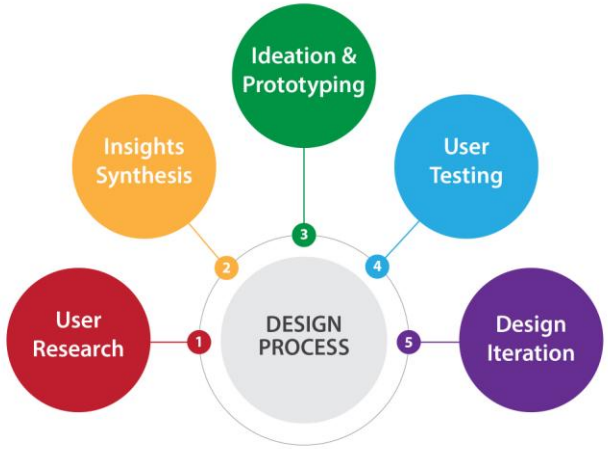

Figure 3: Info graphic of the five step design process to be followed for this concept idea which involves the steps of user research, insights synthesis, ideation and prototyping, user testing and design iteration.

The research phase would involve diving deeper into the concepts of color theory, color psychology and color emotions to understand the relevance, importance and significance of every aspect of these topics. Contextual inquiry and competitive analysis would be needed to understand the existing solutions, where they are lacking and analyzing the need for such a tool in the market. It is also important to talk to a lot of users in the space to understand their preferences and get their feedback as well. These insights would be synthesized to understand the requirements clearly. These insights would give shape to the first prototype which would then be tested out with customers, creators and designers. Based on the feedback received, design iterations would be made to refine the product until it is ready to be released. The next prototypes would be more advanced and include more features and functionalities to give the user a better understanding.

Constraints

There are a number of limitations which need to be taken into consideration for this concept. Color is a very broad topic and can be applicable in almost all situations for all users. For the purpose of testing the functionality and getting the concepts right, it might be prudent to focus on specific use cases and make sure it works fine by mapping out the whole journey for them. The first prototype would have limited functionalities and features to first test out the basic concept. Certain technological challenges will have to be overcome in order to build a complete working model of the tool.

Accessibility

The inclusive design approach places a lot of importance on accessibility. Designing a product which can be used universally is a mark of good design thinking. In the realm of colors, it is imperative to ensure that the colors can be perceived by everyone. Thus it is important to ensure that the tool can be used well by color blind people and it is useful to them too. It is also essential the color choices presented to a user are filtered so they can be seen by color blind people thus making the solution more inclusive and usable. This tool will ensure that the color blind population can use it effectively. It will also take measures to increase awareness about color blindness and the role that design can play to bridge the gap for color blind people.

Conclusion

The concept of this tool has numerous applications. It can be used by designers for digital projects but also in the design of spaces, products, systems and other business needs. It can be used by start-ups to establish their brand identity in the correct manner to create the right impact. It can also be used by individuals in order to understand about color theory, color psychology and color emotions to use it to their advantage. There is of course, a wide amount of primary and secondary research needed to drive the right conclusions to proceed to serve the need of the users.

Including interactive and engaging features on the platform will not only help in educating the user about different aspects of colors, it will also increase awareness about topics like color blindness and understanding how colors affect us in different ways. These interactions could be in the form of short quizzes, games and puzzles to make it fun and engaging. Next steps for this concept include diving deeper into research, conducting user interviews and creating the first prototype to test out with users. Depending on the outcome of these steps, the project can advance to the next level.

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