Stage 1 – Vision

System definition

Educational coloring game designed to test, teach and challenge the user's color combination and drawing skills.

Who is the system for - the target audience

The game is for ages 5-99 +, and the target audience is: parents who want to teach their children color combinations but want to do so in a more attractive way, or anyone who loves coloring and wants to learn color combinations and acquire new coloring skills.

What purpose will the system be used for - problems that the system will solve

The purpose for which they will use the system is mainly for fun and challenge and in addition - developing the capabilities of color combinations.

The system solves a number of problems such as: a problem of parents trying to expand their children's skills without success and looking for original to do it, fun and unforced ways, children with inability to notice colors and even a financial problem for parents who will not have to buy coloring books and paints.

Similar systems that exist in the market - reasons that our system is better

We did a comprehensive search on the Internet and in the play store and came across 2 "similar" systems.

The first one - a game we found a description on a YouTube site of color combinations when: at each stage the user gets a limited amount of colors (at the bottom of the screen) so in the middle of the screen there are a number of empty cans when under each can there is a certain color that the user needs to combine and to do that he will have to use the colors he got.

At each stage he has a number of mistakes he can make - if he made a mistake the last time, he loses and returns to the first stage.

Game description link:

https://www.youtube.com/watch?v=DDsEcU4UMps&ab_channel=UnboxTherapy

The second one – 'Try Colors' - a game we found online where at each stage, half of the screen is painted white and the other half is painted in a color that the user needs to reach, while at the bottom of the screen, the user gets a limited number of colors to combine to achieve the desired color, so that he can combine colors in certain percentages, the user can combine for example: 20 percent white, 30 percent red and 50 percent blue according to the amount of percentages he gave for each color, he gets a new color instead of white color and also appears an adjustment percentage. (You cannot lose, the user can try over and over until it reaches the desired color and pass to the next stage.

Link to the game:

https://trycolors.com/game/

Key words: coloring combination game, coloring game, coloring game for children, combination coloring game, painting game.

Our system is better for several reasons: In our game - learning color combination is an extra, that is - the game is based not only on color combinations but also on the user experience that includes coloring while working with a 3D interface, where at each stage - the user will experience coloring in different landscapes And breathtaking, compared to the other games we presented - where the user experience is minimal, although the game is based on color combinations but without investment in game design and not 3D.

In addition, in our system the user's painting rating will be measured by a color matching algorithm based on image processing.

Moreover, our interface will be easy and convenient to use even for small children who want to play without calling parents to operate the game, compared to the other systems we have introduced where the interface is not so convenient and unattractive.

In addition, custom background music will be played at each stage compared to the other games we presented where there is no background music.

Priorities

The parts of the system that must be done are:

1. Convenient interface and easy to operate

2. Between 5-15 stages in the game

3. Login screen

4.Operation General explanation of the game

5. 3D interface

6. Results table.

The parts of the system that will only be executed if there is time left are:

1. Demo game in the main menu

2. Connection to database

3. Improving the quality of the landscapes and adding new landscapes

4. Adding stages by the user

5. Multi-participant game (two participants)

<u>**Elevator speech:**</u>

For computer users aged 5-99 who want to play and learn to draw, paint and combine colors. The 'Mix-It' system is an online coloring game that allows the user to draw, color and enhance his color combinations ability. Unlike other coloring games that only combine colors or only paint, not really educational and without feedback on the final drawing, our product allows the user to draw, paint using existing color combinations to create new colors, and in addition our product gives feedback to the user using an algorithm that tests color matching and accuracy.