Hues of You: A 2D Interactive Animated Short Film

RESEARCHERS

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1

CHAPTER 1
Introduction to the Study

OBJECTIVES OF THE STUDY

This study aims to create a 2D interactive animated short film that is color-blind friendly.

Specifically, this study aims to:

1. Create a two-dimensional animated short film that highlights the peculiarities of two-dimensional people and objects while also being colorblind-friendly for various degrees of colorblindness (Protanopia, Deuteranopia, and Tritanopia).

2. Create an interactive system in the short film that allows the viewer to select his or her color blindness type, offers preset color palettes for all types of color blindness, and modifies the color palette of the characters and objects based on the viewer's color blindness type.

3. Identify key scenarios for colorblind people through data gathering and integrate them in the story of the short film.

4. Develop a viewer evaluation module within the interactive media system to determine the film's effectiveness as a color-blind-friendly film.

3

CHAPTER 4
Results and Discussion

RESULTS

To find out the results of the usability evaluation, the researchers used the Likert scale to measure the respondent's attitudes toward the interactive system.

To find out the result of the evaluation module within the system the researchers solved the summative average of the scores of the viewers.

The Likert scale contained four responses assigned with a numerical value namely: Very Acceptable (4), Acceptable, (3), Moderately Acceptable (2), and Barely Acceptable (1); which would be used to measure the attitude under investigation.

Value	Range	Interpretation
4	3.51 - 4.50	Very Acceptable
3	2.51 – 3.50	Acceptable
2	1.51 – 2.50	Moderately Acceptable
1	1.0 – 1.50	Barely Acceptable

Table 1. 4-point Likert scale scoring range

Interactive System-Usability	Weighted Mean	Descriptive Interpretation
1. Audio-visual representation supports the system	3.5	Acceptable
2. The screen layout is easy to follow, well-organized, and visually pleasing	3.6	Very Acceptable
3. Navigation is consistent, logical, and minimalist	3.25	Acceptable
4. Control keys are consistent and follow standard conventions	3.4	Acceptable
5. System controls are convenient and flexible and the system is adapted to my screen size	3.4	Acceptable
6. The system gives feedback on the viewer's actions	3.5	Acceptable
7. The system provides useful help.	3.8	Very Acceptable

Table 2. Results of the Interactive System Usability Components

Interactive System-Mobility	Weighted Mean	Descriptive Interpretation
1. The system and play sessions can be started quickly.	3.6	Very Acceptable
2. The system accommodates the surrounding.	3.7	Very Acceptable
3. Interruptions are handled reasonably.	3.65	Very Acceptable

Table 3. Results of the Mobility Components

Interactive System Components	Weighted Mean	Descriptive Interpretation
1. The interactive system provides clear goals.	3.5	Acceptable
2. The viewer sees the progress in the system and can compare it with other	3.65	Very Acceptable
3. The viewer is in control of his/her pace in the system.	3.65	Very Acceptable
4. The first-time experience is encouraging.	3.55	Very Acceptable
5. There are no repetitive or boring tasks.	3.4	Acceptable

Table 4. Results of Interactive Experience

Learning Content Components	Weighted Mean	Descriptive Interpretation
1. The interactive system provides learning content.	3.65	Very Acceptable
2. The content can be learned easily.	3.75	Very Acceptable
3. The learning objective from the interactive system is achievable.	3. 5	Very Acceptable
4. The content is understandable.	3.55	Very Acceptable

Table 5. Results of Learning Content Components

Components	Weighted Mean	Descriptive Interpretation
Interactive System Usability Components	3.5	Acceptable
Interactive System Mobility	3.65	Very Acceptable
Interactive System Components	3. 55	Very Acceptable
Learning Content Components	3.6	Very Acceptable

Table 6. Results of the Components

Indicators	No. of Respondents responding Yes (%)	No. of Respondents responding No (%)
1. Are you able to tell the film's colors apart?	20 (100%)	0 (0%)
2. Were you able to identify the film's key objects based on their color?	19 (95%)	1(5%)
3. Based on the color, were you able to determine the mood of particular movie scenes?	19 (95%)	1(5%)
4. Based on the color, were you able to comprehend the film's plot?	20 (100%)	0 (0%)
5. Did you find the movie's colors to be harsh on the eyes?	2 (10%)	18 (90%)
6. Do the colors of the movie's characters strike you as being murky?	0 (0%)	20 (100%)
7. Is the movie's interactive system useful to you?	20 (100%)	0 (0%)
8. Were you able to identify the causes of Color Blindness?	19 (95%)	1(5%)
9. Were you able to identify the types of Color Blindness?	20 (100%)	0 (0%)
10. Do you find the movie to be colorblind-friendly?	20 (100%)	0 (0%)
11. Is there a difference between the Non-Colorblind film and the Colorblind Film?	20 (100%)	0 (0%)

Table 7. Indicates number (%) with Yes or No answers.

This indicates that the majority of the respondents think that the film is colorblind-friendly for all types of colorblindness and the majority think that there is a difference between the non-colorblind film and the colorblind film.

Cherry (2013) asserts that color is a potent communication tool that may be utilized to communicate action, alter emotion, and even physiological responses. Since colorblind people cannot discern colors using colors as a communication tool might be proven to be difficult for them. The usual emotions felt by non-colorblind people might not be felt by the ones who are colorblind, as the colors the colorblind people see are almost the same. The system will make a very good alternative for the colorblind in watching movies while applying the features of colorblind accessibility. It is crucial to highlight, however, that there is still much that can be improved in the film's animation to make the experience more meaningful and pleasant.

3

CHAPTER 5
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Color may make someone feel a specific way based on whether or not somebody enjoys that particular color. It is an extremely effective communication tool that may be used to communicate action, alter mood, and even influence physiological reactions. Having identified the problems of colorblind people when it comes to movies, as not being understandable enough because of the lack of ability to perceive colors fully; the system was built in response to these problems. This issue caused the researchers to create a 2D interactive animated short film that could potentially assist colorblind people in understanding the colors of any film.

Animation is commonly used for entertainment and learning; however, researchers are studying its potential when it comes to helping colorblind people to understand the colors of any film in the future and have concluded that incorporating an animated movie inside an interactive system with the feature of choosing the kind of colorblindness the viewer has, would be beneficial to the colorblind people. Since most games now have colorblind accessibility, why not include it in movies as well? Having to match the hue of the film to the sort of colorblindness the viewer has would be advantageous not only to the viewer but also to future filmmakers who may wish to integrate this feature in future films.

SUMMARY OF FINDINGS

The contents of the form were the usability of the interactive system, its mobility, the experience, and the educational content. The results showed that some of the respondents found the interactive system usability to be convenient and the game adjusts to the screen size of their PC platforms.

For mobility components, the interactive sessions were regarded to start quickly and accommodated the surroundings.

In the interactive experience, the viewer responded that he or she is in charge of his or her speed in the interactive system, and the viewer can also observe and compare his or her progress with others.

A majority of the respondents answered in the learning content component that they were able to learn something new after trying the interactive system.

Overall, the interactive system delivered a great learning and gaming experience for the audience and may be employed as an effective component in future films.

CONCLUSION

People who are colorblind find it difficult to enjoy the amusement provided by movies. As a result, there is a need for reform in the entertainment business that will allow persons with colorblindness to enjoy watching films without having to wonder what color the character's attire is or what time of day it is on that scene.

In this study, animation and interactive systems were investigated in terms of their efficacy for colorblind persons. After seeing the animation, respondents were given a download of the software as well as a questionnaire form to fill out. The learning and engaging experience, as well as the system's performance among colorblind persons, received generally excellent responses. Interactive System Mobility garnered the highest weighted mean of **3.6**, Learning Components with a score of **3.6**, and Interactive Experience with a score of **3.55**. While the Interactive Usability Components got the lowest score of **3.5**.

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RECOMMENDATION

Following the completion of this study, it was discovered that the Interactive System can promote learning and be used as a tool to assist colorblind individuals in understanding and watching films without the usage of enchroma glasses.

- However, it is advised that future researchers divide the labor evenly among the members in order to ensure that the result is delivered on time while retaining its quality. The researchers will create the questionnaires that will be used in the film.
- Future researchers should test this approach on a larger number of people, particularly those who are colorblind.
- It is also advised that this system include a server to automatically record the scores and responses that the responders or viewers have entered.
- For the Colorblind viewers, the researchers recommend promoting or prioritizing interactive color-blind friendly systems or visuals. As it will be helpful for them and future generations if they help those interactive systems to improve more

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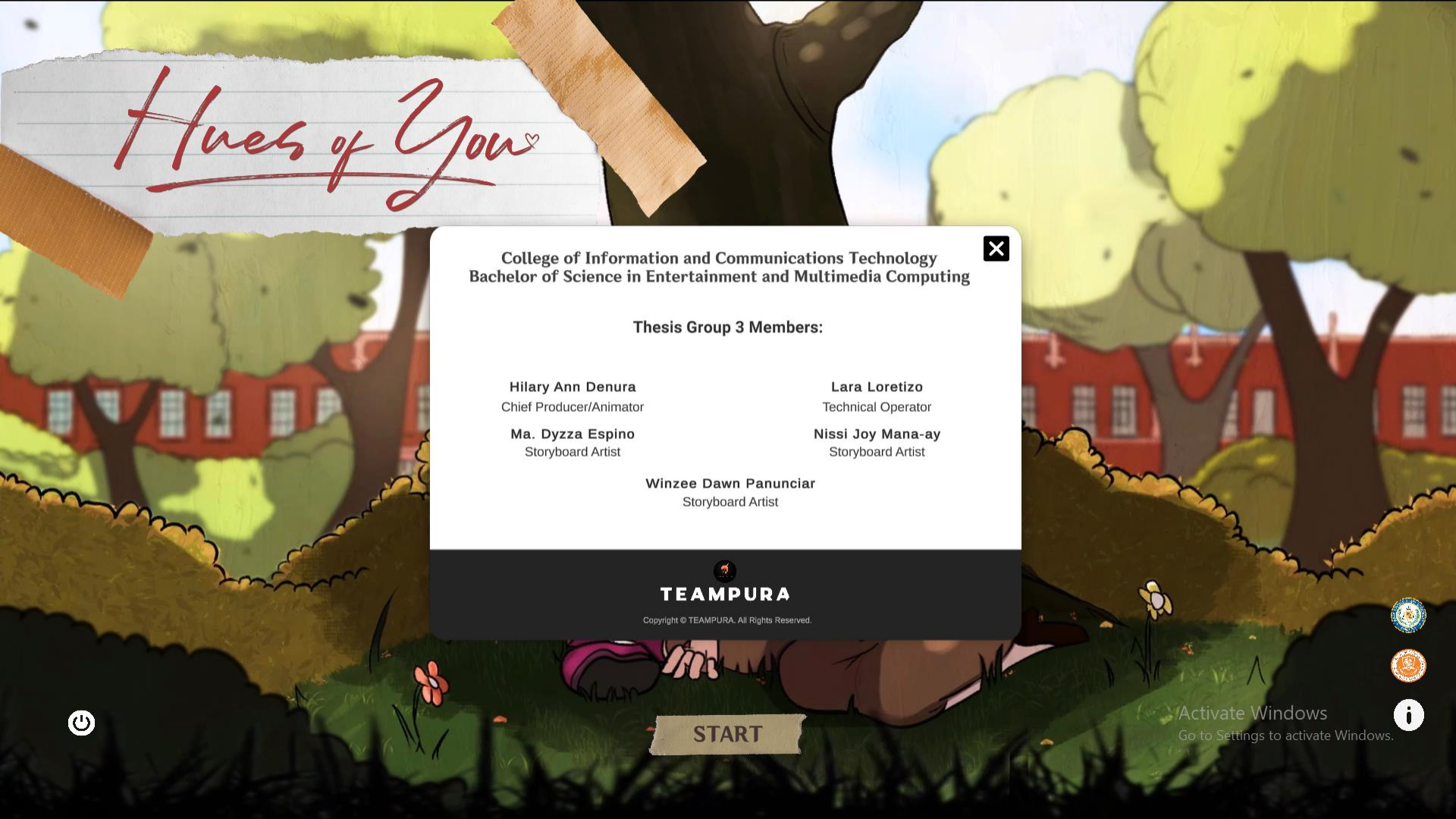
TRAILER

SCREENSHOTS


Hues of You
START
Activate Windows
Go to Settings to activate Windows.


Hues of You
College of Information and Communications Technology
Bachelor of Science in Entertainment and Multimedia Computing
Thesis Group 3 Members:
Hilary Ann Denura
Chief Producer/Animator
Lara Loretizo
Technical Operator
Ma. Dyzza Espino
Storyboard Artist
Nissi Joy Mana-ay
Storyboard Artist
Winzee Dawn Panunciar
Storyboard Artist
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START
Activate Windows
Go to Settings to activate Windows.

Hues of You is a short 2D animated film that discusses color-blind people's experiences, different types of color blindness, love, and friendship.

**We encourage users to watch the non-colorblind mode of the short film, first of all, for our research. After watching the normal mode, users have the option to pick any colorblind mode to rewatch the short film. This is solely for our data and we will conduct surveys and questionnaires at the end of the experience.*

Next

Proceed

What type of colorblindness do you have?

Protanopia

Deuteranopia

Deuteranopia - A form of colorblindness characterized by insensitivity to green.

Tritanopia

Pick your Deuteranope sub-type..

Green weak

Deuteranomaly - This can be everything between almost normal color vision and deuteranopia. The green sensitive cones (green) are not missing in this case, but the peak of sensitivity is moved towards the red sensitive cones.

Green blind


Activate Windows
Go to Settings to activate Windows.