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**Basic Game Design**

The purpose of this exercise is to define major elements of your educational game. You do not need to have a "perfect" game. However, the goal is to design for as wide a personality as possible within your user profile. So the purpose of this document is to describe the game well and describe how your knowledge of the elements of game design in this course were used to influence the design of your game. Most answers, especially those in the middle, should be several paragraphs, not just a few sentences.   
  
Keep in all the html. Place in your design directory of your repository. You and your partner fill in your CNETIDs - you only need to submit to one of your svn repositories.   
  
**Summarize your user profile in 1-2 paragraphs, making sure to point out aspects that influence your game design.**

This game targets younger users, like elementary ~ middle school age, to introduce them to color theory, although not even adults are that familiar with some of the concepts. Still we expect no prior knowledge of anything from our users, basic maths skills, basic reading comprehension, no technical/programming, no resources, etc.

While all users can play, we want to specifically target those from under represented minorities so they can feel some sort of connection and sense of belonging in a society that can be very alienating. So female, POC, immigrant, lower income, single-parent or foster home, etc. Our user would be the shy, quiet type, who is very detail oriented and observant, but often doesn’t have the chance to share them. The point is that for the people in these situations, things may seem hopeless, alone, and dark, but there is a way out and they can find color, light, and meaning in life eventually.   
  
**Describe what skills you are going to teach your user.**

Basics of color theory. Additive(RGB) vs subtractive(CMYK) color mixing models; primary, secondary, tertiary colors; warm vs cool colors; hue, shade, tint, tone, saturation, lighting; complementary, analogous, triadic colors; By understanding the fundamentals behind color theory, users will understand why a certain design, graphic, or data visualization works and looks aesthetically pleasing.   
  
**Describe your game, taking care to describe the different elements such as premise, rules, etc.**  
Basic premise is small, lone girl finds herself in a cold, black and white world, and upon discovering a color relic (RGB triforce? lol) slowly fills the environment with colors and light as she continuously learns and progresses through the game. I liked the idea of separating the game into levels or stages, and at each devise a puzzle of some sort to introduce a new topic of the color theory, like find the complement of this color, or adjust saturation to match this example. The colors can serve as a symbol of learning, and each level can be tied to some real world example of challenges that can be overcome with education. Would this be too basic? If we wanted to add more “practical” skills could make user choose which graphics are better based on colors and make them create one too with appropriate colors, or use numeric values to create digital color (RGB 0-255) and compute an appropriate colorscale given a set of data points (scaling linearly, logarithmically, etc.). I feel like cementing the basics of color theory from just playing a game is pretty useful and informative as it is…

Another idea I had, but I feel like might be a little too chaotic/hard to implement is inspired from splatoon. It’s a game where people shoot paint at each other, but instead we shoot monsters with a certain color to kill it. For example, the most basic monster we just have to match the color to kill it, then another where you have to match the complement, and one where you have to match the hue, or triadic, and bosses could be multiple combinations of those. 2D platform scroller where you’re equipped with a color wheel and can customize which color/hsl/model to shoot (or paint yourself with) to kill monsters and advance to the next level. The closer you are to matching the right color, the stronger the damage of your attacks and vice versa. This would be more real time strategy kind of game where the focus is on the mechanics, but still incorporate the story.

**Describe how your choices of elements above will result in the keys to successful game design, such as increasing difficulty, engaging players' attention, as well as resulting in learning.**   
As described above, more concepts of color theory will be showcased as the game progresses, increasing the difficulty per se, and the storyline would be the main way of engaging with players, connecting them with the character emotionally and also bring some awareness/recognition to URMs. Especially with the shooting scroller idea, the fighting mechanics in real time will be engaging enough and the difficulty will rise as the number and diversity of enemies increase.

**Describe how different "player types" will find something that engages them.**

Possibly not as fun for the competitive types since there are no other players to compete against, but for others I think the concept of colors aren’t specifically taught in school, so it could be pretty engaging. There is the aspect of collecting the different color schematics, exploring the game world, and achieving goals by completing each level or defeating a boss.   
  
**Explain how you took into account the limitations in skills of the user to influence your game design.**

Everyone starts out the same with the most basic concept, since we assume no prior knowledge of color theory of our users.  
  
**Explain how you brought in pieces of the student's cultural background to influence your game design.**

In game character will match the student’s cultural background and weave that into the storyline. The progression of the game relates to the overcoming of obstacles in real life through learning and education. The underprivileged background the student has is acknowledged, and the game shows the student a way to still persevere and overcome challenges with the story.

**Minimum Viable Product:**Propose what you will implement by the end of the quarter. What technology will you use? (Java game engine or something else) How many levels will you include? What will the interface be? Make sure your description is enough so that I can evaluate the challenge for this class.

I think this is doable in Java game engine. Maybe 5~10 or so levels? Puzzles/fights based on:

1. Primary colors of additive and subtractive models
2. Color wheel and general warm vs cool colors
3. Complementary
4. Analagous
5. Triadic
6. Hue
7. Saturation
8. Lighting
9. HSV
10. Combination of above

I think the bare minimum we can do is 5 stand alone puzzles/levels, with no explorable world or character movement freedom, and just have the user complete the puzzles using a color wheel to match the correct complement, hue, analogues, etc. The character can be used to present the new concepts in between levels and showcase examples, which is simpler, but would lessen the emotional connection of the user.