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Mindset: The 2.5D Platformer

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MINDSET

Developed and Produced by: **Shaun Sullivan**
Christopher Blazek

Abstract & Proposal

Mindset is a 2.5D platformer video game developed in Unreal Engine 4. The player must navigate different levels and overcome various challenges on a quest to reach the end of the game. Each level of Mindset is made to represent a different emotion in the protagonist's life such as contentment, anxiety, and confusion. Part of the core functionality of the game is this idea that there are two dimensions to every level, a foreground and a background. Each level will incorporate the core mechanic of the game known as "plane shifting" in which the player swaps from foreground to background and vice versa. The challenges in each level revolve around this idea of plane shifting, and it is up to the player to figure out how to solve them.

The rooms will each incorporate a core gameplay mechanic known as "plane shifting" in which the player swaps from foreground to background or vice versa. Plane shifting will be tied to each challenge in each room. For example, the room labeled "Confusion" will be spinning constantly and the player can use plane shifting to go to the foreground and get their bearings in the level. Once the player completes the required challenge, the exit for the room opens, and the player is able to progress through the game. If the player fails to meet the requirements of the room, or takes any kind of damage, the level is reset, and the player needs to start from the beginning of the room. The player will be able to move around the room with basic character controls, jump, and plane shift, relative to the room the player is currently in. If the player drains their overall life count, then they are required to start at the beginning of the game. This is done in order to simulate the same rules/requirements as a standard platformer, to keep the player interested in progressing through the game.

Mindset is being developed in Unreal Engine. The reason behind this choice is that as designers we felt Unreal was a more powerful and versatile engine, enabling us to better create the game to the vision we had in mind. The other option we considered was Unity, which admittedly would have worked, but not as well as we felt Unreal would. We wanted to explore different development options than what we were accustomed to and Unreal enabled us to do just that. Furthermore, using Unreal is a learning opportunity for us seeing as before the development of Mindset neither of us had experience with it. It is a dominant engine in professional game development so this experience is valuable for future projects we are a part of.

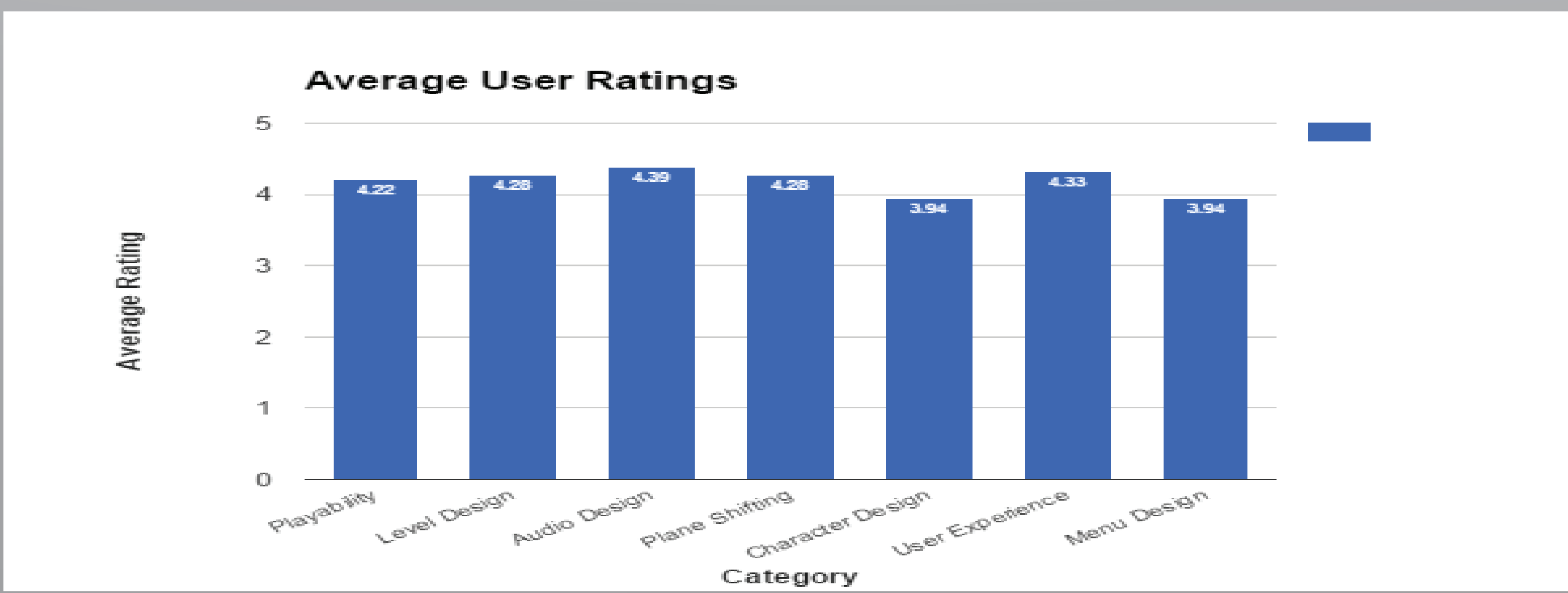


Image (1): User Test Results -

Results Range from 1 to 5

Rated for: Playability / Level Design / Audio Design / Plane Shifting / Character Design / User Experience / Menu Design

Research & Conclusion

As you can see from our results, each category of our questionnaire is broken down into separate categories. Although their averages are pretty much in the same spectrum, we can see that the highly appraised aspects of our game were our Audio/Sound design (average of 4.39), and overall User Experience. (average of 4.33) The sections in which need the most improvement are Character Design, (average of 3.94) and Menu Design. (average of 3.94)

One concept that users really seemed to like however was the idea of Plane Shifting. They liked the depth it opened up in the gameplay as well as the puzzles associated with it. In particular, the concept was not explained well enough, especially given the importance of it in the game. So, to provide a temporary fix, we implemented a GUI system on the player's HUD, that updates with what plane they are currently located.(Whether foreground, or background.)

Another concern regarding Plane-Shifting was that if you attempted to plane-shift, and a nearby object was in the way of your direction, then that would offset your location in the game, making it difficult to pass through the level. Although this is a serious confliction that we hope to further address in future development, we also provided a reminder located in the help menu, of both the plane shifting controls, as well as reminder of the ability to reset your orientation if you were to plane shift back-and-forth in the level.

Bibliography

1. Dickens, Charles. "Check out This Poem - "LONELINESS" by Charles Dickens." LONELINESS, by Charles Dickens. Poetry.com, 2016. Web. 8 Sept. 2016. <http://www.poetry.com/poems/780646-LONELINESS>
2. Smith, Gillian, Mee Cha, and Jim Whitehead. "A Framework for Analysis of 2D Platformer Levels." Proceedings of the 2008 ACM SIGGRAPH Symposium on Video Games - Sandbox '08 (2008): n. pag. USC.edu. University of Southern California, 2016. Web. 14 Sept. 2016. <https://users.soe.ucsc.edu/~ejw/papers/smith-sandbox-2008.pdf>
3. Calaelen, @gamedevcala. "2D Platformer with Unreal Engine 4 Part 1: Tilesets Tilemaps." My GameDev Journey. N.p., 01 Jan. 2016. Web. 20 Sept. 2016. <http://nerd-time.com/ue4-2d-platformer-paper2/>
4. Jonkers, Diorgo. "11 Tips for Making a Fun Platformer." DevMag. N.p., 04 July 2011. Web. 13 Sept. 2016. <http://devmag.org.za/2011/01/18/11-tips-for-making-a-fun-platformer/>
5. Zhang, Biqiao, Emily Provost M., Robert Swedberg, and Georg Essl. "Predicting Emotion Perception Across Domains: A Study of Singing and Speaking." AAAI.org. N.p., n.d. Web. 12 Sept. 2016. <https://www.aaai.org/ocs/index.php/AAAI/AAAI15/paper/viewFile/9702/9324>
6. Cook, Michael, Simon Colton, and Jeremy Gow. "Initial Results from Co-operative Co-evolution for Automated Platformer Design." Applications of Evolutionary Computation Lecture Notes in Computer Science (2012): 194-203. Http://musicweb.ucsd.edu. Web. 20 Sept. 2016. <http://musicweb.ucsd.edu/~sduubnov/Mu270d/AIIDE12/01/AIIDE12-029.pdf>

