

Warp Mechanic

Concept/Theme

I have always enjoyed games that give me the perception that I'm moving very fast. It makes movement, a basic feature in practically every game, much more enjoyable, and I want to create those same emotions with the warp mechanic. The warp mechanic will allow players to quickly move from galaxy to galaxy while piloting their spaceship. They will be piloting a spaceship? Yes, the player's main 'character' is a spaceship and they will controlling it to traverse the cosmos.

Mechanic

As the player travels through space with their spaceship, they will notice a rectangle near the bottom of the game window slowly filling up. This is their 'warp bar' and it determines if they can warp to another galaxy. Also, it can be used by opening the warp menu with the right mouse button. If the player doesn't open the warp menu, then they can travel in the current galaxy using the left mouse button and their mouse. When the player presses down on the left mouse

button, smoke will appear behind the spaceship and the player's spaceship will begin to 'move'. However, stuff around the player's spaceship will move instead to give the illusion that the spaceship is moving towards the player's mouse cursor. This means the player's spaceship stays center on the screen and points to the player's mouse cursor at all times and does not move as depicted in Figures 1 and 2.

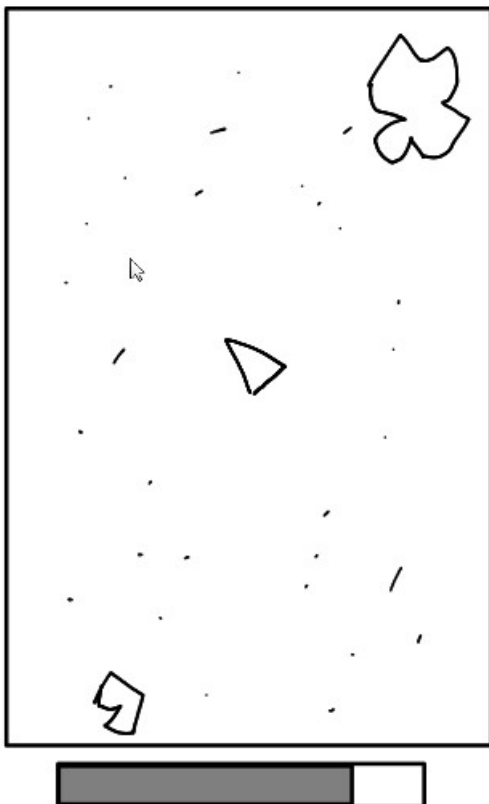


Figure 2: Player's spaceship follows mouse cursor

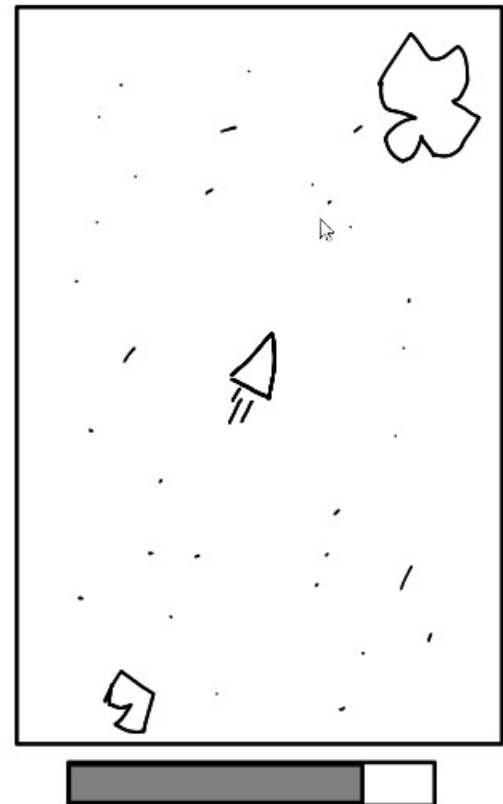


Figure 1: Player's spaceship starts moving towards the mouse cursor

Also, as the player is traveling through space random asteroids can be seen approaching the player and they must dodge them. Furthermore, the player cannot warp if there is an obstacle along their path.

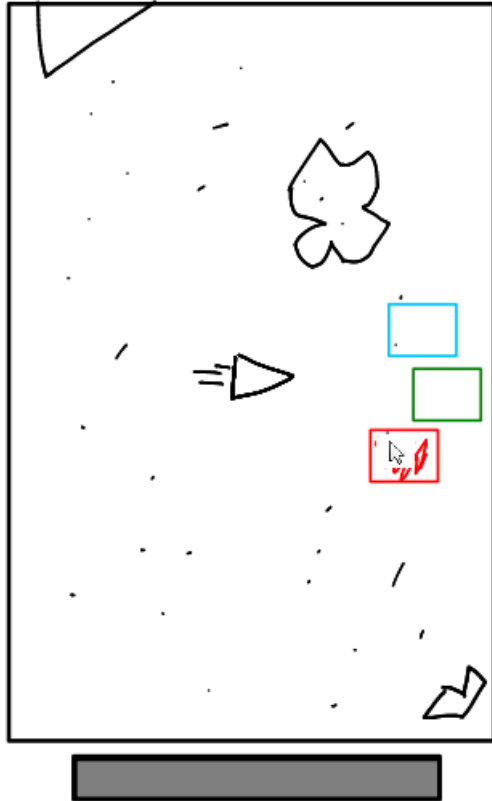


Figure 3: Player hovering mouse over destination

When the warp bar fills up at least $\frac{2}{3}$ of the way, the player is allowed to activate the warp menu. The warp menu is a radial menu in front of the player's spaceship indicating the possible galaxies they can warp to. The warp menu is opened with the right mouse button and closed when the button is released. When it is opened, the game will be paused, and the player can select which galaxy they want to travel to by hovering their mouse over it as seen in Figure 3. Then, when they lift their finger off the right mouse button while hovering over a galaxy, they will be warped to that new galaxy as seen in Figure 4. Also, the border color of the window will not change when entering another galaxy. The change in color is used in this proposal to

make it more clear that the user traveled to another galaxy. However, if the player releases the right mouse button without hovering over a galaxy, then the menu will disappear and the player will not warp anywhere. Also, depending on the angle of the player's spaceship, more than 3 galaxies can be warped to as seen in Figure 5.

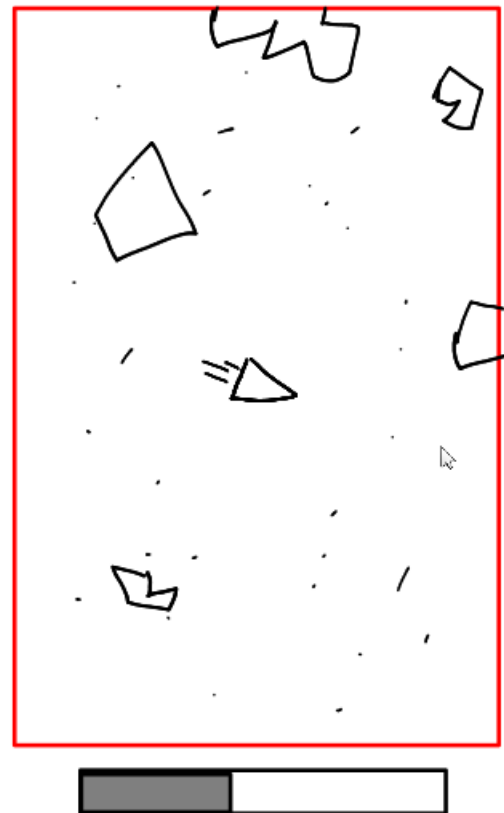


Figure 4: Player warps to a new galaxy

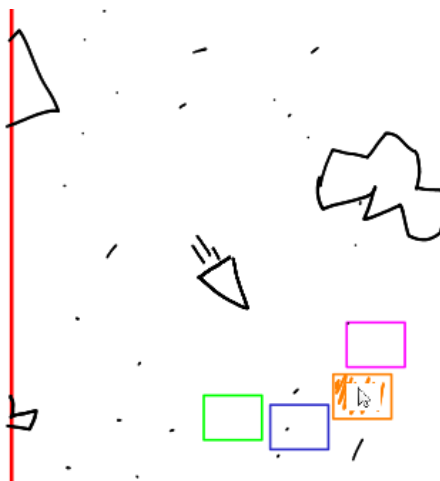


Figure 5: Player opens radial menu with more than 3 galaxies to travel to

The galaxies that the player warp to are differentiated by the asteroids that are there, and asteroids are procedurally generated. Looking at Figures 6, 4 and 1 shows some of the differences between asteroids.

Also, if time permits, I can implement more mechanics that affect movement like a boost mechanic. This mechanic would increase the player's speed considerably but it wouldn't launch them to another galaxy.

Or, since the player can be hit by asteroids and the asset pack I decided to use has assets for shields, I could implement a shield mechanic that will allow the player to hit asteroids without being damaged.

All in all, there are many other mechanics that I can implement that either complement the warp mechanic or complement the overall game.



Figure 6: The asteroids are noticeably different than the rest of the other galaxies

Target Audience

My target audience is E for everyone or basically anyone who can play a game since the complexity of my game is not high. In addition, my audience would consist of people who enjoy science fiction and want to play a space game that focuses on space travel.

Visual Design

To differentiate my game from the other obvious space game that uses a triangle as its spaceship, I'll be focused on using pixelated assets. This will give the game a very retro feel as it will remind the player of older arcade games (if they can even remember of their existence).

Some visuals of the assets I plan to include:
These assets are from the asset pack on [itch.io](https://foozlecc.itch.io/void-main-ship) located here: <https://foozlecc.itch.io/void-main-ship>



Scope of Demo

In the warp mechanic demo, the player will be given control of a spaceship to warp to different procedurally generated galaxies using the warp menu. In other words, the warp mechanic as described above will be implemented. Also, the game will include the damage mechanic, a system that states that when the player's spaceship collides with an asteroid, the spaceship should show that it was damaged. Damage will be shown by swapping the sprites on the player's spaceship with one that looks more damaged as shown in Figure 7. This mechanic exists to make the game have some sort of challenge so that it's not too easy. Furthermore, there's one other feature that will be implemented.



Figure 7: The spaceship slowly getting damaged

Each galaxy will be procedurally generated and the only difference between each galaxy is going to be the differences in the asteroids. Therefore, there will be a system that will be created to handle the creation of galaxies and more specifically asteroids. Procedurally generating galaxies with different asteroids will likely be done in one of two ways: procedurally, or randomly from a list of existing assets. If it will be done procedurally, then 'procedural geometry' can be used to dynamically create asteroids. This approach would be more complicated as it would require the use of mathematics to create geometry that still looks like asteroids. However, if a random assortment of assets were created, then each galaxy can select a few asteroids to use. This method would be much easier to implement because no math will be needed to generate the asteroids. Either way will suffice for a demo but I would prefer the procedural way as it sounds like a fun project to work on. But, there's only so much time.