Snowball Snowdown - Design Document
Very Cool Team

Concept:

    Snowball Showdown is an over-the-top, wacky, and competitive PvP game that emphasizes the playful nature of a snowball fight in virtual reality, adding a new twist to a childhood classic. All those rules stopping players from putting dangerous objects like rocks, squids, and explosives in their snowballs? Gone. Anything is fair game, including the neighbor's cat. Using the power of their techno-mittens, players will build their forts, combine snowballs with all sorts of items, and challenge their opponent for dominance.

Target Audience:

    The target audience for *Snowball Showdown* is very broad. It should appeal to any Rift user, with a focus on more casual play. The silly and flashy gameplay will be amusing for people playing solo, but the multiplayer aspect will encourage them to recruit more friends to join the brawl. The art style is very approachable, and the mechanics are simple but provide players many opportunities to strategize. This will greatly appeal to players with an interest in frantic-yet-thought-provoking gameplay. Based on our market research, we have determined that the main age range for players is around 18-34, so we can add more mature concepts and weapons (such as explosives) without dissuading some players.
(https://www.statista.com/statistics/740760/vr-ar-ownership-usa-age/)

Game States:

Beginning State:
- Before starting the game, players queue into a multiplayer lobby, where they wait for their opponent or opponents to arrive
  - Once all players are present and ready, the game transitions to the **Showdown State**
  - If the lobby is still lacking players after a set amount of time passes, all present players are kicked out of the lobby and have to join a different one
- If a player is working on the training mode, they can start the game at any time, moving to the **Showdown State**

Showdown State:
- At the beginning of the match, players cut snow into blocks to form forts
  - Forts and fort blocks are locked in place after the round starts up
- Players can crouch down and make a scooping motion with their hands to create snowballs of various sizes
  - If the player puts a formed snowball into the "Snowblower" object, it will output a random item
  - They can put another snowball with one item into the "Snowblower" to output another item, which may come from the next "tier" up
- If the player throws a snowball at a stationary target or the enemy player, they will deal damage
  - Dealing enough damage to a target or enemy destroys it
  - When only one player is left standing, the game ends immediately, and the winner earns a point
- Once a player has acquired the necessary number of points or time runs out, they go to the **Post-Game State**

Post-Game State:
- The winner is displayed alongside their score
- Players are then given the option to quit or start a rematch
  - If they choose to have a rematch, they can change the point goal or time limit for the next round

Mechanics:

Snowballs: The player's means of attacking throughout the game.

- **Creating Snowballs:** If the player sweeps their hands through snow drifts, they will create a snowball. The larger the sweeping motion, the larger the snowball they create.
- **Grabbing and Holding:** The player can press down on a controller's trigger button to grab a snowball or item they are pointing at. They can hold up to one item in each hand at a time. If the player releases either trigger, they will drop anything held in that hand.
- **Throwing:** If the player releases the trigger while swinging their arm, the snowball will go flying in that direction. It will not stop until it collides with the floor, an environmental object, or an opposing player.
- **Damage:** If a thrown snowball comes in contact with an opposing player, it will damage them and reduce their health by a non-random amount. Damage depends on a snowball's size and composition.
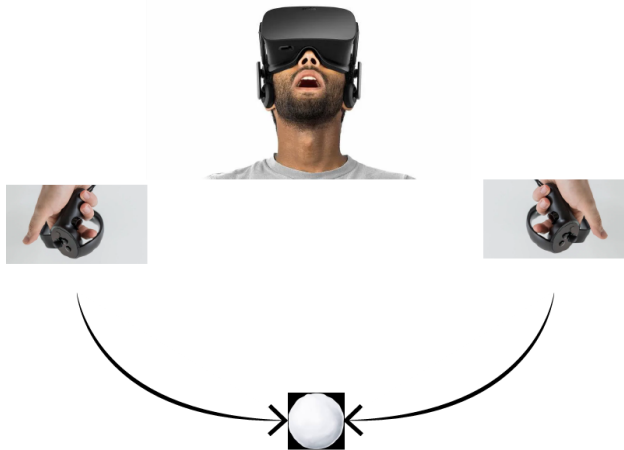
Fusion: The player can combine an object in one hand with a snowball in the other to increase the snowball's size and change its composition. This makes the snowball deal more damage and - if the secondary object was an item - perform an additional effect, such as heavily damaging the opponent's fort.

Health: Whenever players hit an opposing player or an environmental object with a snowball, the target's health decreases. A player loses when their health reaches zero, while an environmental object is merely destroyed. All players' health values are constantly visible in-game.

Item Acquisition: Players can place formed snowballs in their base's Snowblower to acquire items. It then outputs an item based on the composition of the sacrificed snowball, ranging from a weak item if they add an empty snowball to a possibly more powerful item if they place in a snowball with another object within it.

Fort Building: At the beginning of each round, players have a limited amount of time to create blocks and build up their fort. They can use their techno-mittens to form different-shaped blocks, which they then stack to build a fort, which for gameplay purposes counts as an environmental obstacle.

Systems:

- **Winning:** One player wins a game when they achieve a certain point threshold, which all players actively decide on before a match starts.

- **Points:** Points are the main indicator of a player's progress in winning a game. Players earn points by being the last surviving members of a given round.

- **Networked Multiplayer:** *Snowball Showdown* features networked VR multiplayer, in which two players (currently) can play with one another using separate VR headsets. Most features of the game are visible to both players, including player health, player characters, and held objects and snowballs.

- **Defeating Opponents:** Each player has a set amount of health at the beginning of each round of play. Their health decreases as they get hit by snowballs, and the decrease may grow more pronounced based on the items contained within a given snowball. If they reach zero health, they will be "knocked out" and unable to play for the rest of the round.

○ **Frostbite:** If a player takes a high enough amount of damage from a single snowball, they become *frozen* for several seconds. While frozen, players cannot hold snowballs or items. This also increases a "frostbite" meter. If players do not take damage for several seconds, the meter slowly depletes. On the other hand, if it fills completely, they instantly lose.

- **Snowball Construction System:** The bulk of *Snowball Showdown*'s gameplay comes in the form of constructing and using snowballs to defeat opponents. Players can make snowballs with different sizes and compositions, allowing for nearly infinite possibilities.

- **Snowblower:** To receive items, players must use the Snowblower present in their base. To do this, the player simply needs to place a snowball into it, and it spits out an item in return.

- **Items:** Using the Snowblower, players can obtain a variety of items to stuff inside their snowballs. Different "lines" of items have different effects, such as rocks and anvils (which simply add damage to the snowball) or dynamite and grenades (which deal damage to the enemy's fort).

- **Grab and Throw:** Players can pick up or dropping a snowball that they have already constructed. They can also swing their arm and release the trigger to throw a held snowball. When thrown, snowballs travel with force proportional to players' throw, only stopping when it collides with another player, a target, an environmental object, or the ground.

- **Fort Blocks:** During the building phase, players can use their techno-mittens to craft snow blocks. They must reach a certain mass of snow before the snow will form into a proper block. Though players can pick up and move fort blocks throughout the building phase, all dropped blocks lock in place after the game begins.

- **Freezing Objects:** Both the Snowblower and the player's hands can be frozen if they take enough damage, making them unusable for a short duration. The Snowblower's "health" resets after it thaws, and

both it and the player's hands gain a short window of immunity to freezing.

- **Blocking**: Blocking is when a player (intentionally or not) uses a snowball to block an incoming snowball from the opponent. Whether it is resting on the ground or sitting in their hand, any snowball that blocks an attack is classified as a "shield" snowball. If a shield snowball is hit by a smaller snowball, a few different things can happen depending on size.
    - If the blocked snowball is much smaller than the shield snowball, the shield snowball will absorb it.

    - If the blocked snowball is only slightly smaller than the shield snowball, the blocked ball will be destroyed, and it will shrink the shield based on the size ratio of both. If the shield snowball shrinks enough, items may fall out.

    - If the blocked snowball is slightly larger than the shield snowball, the blocked snowball will deal reduced damage to the target player.

    - If the blocked snowball is much larger than the shield snowball, the shield snowball will be absorbed into the blocked snowball, which will have its damage amplified accordingly.

- **Snowball Deterioration:** Large snowballs start to deteriorate if their creator does not modify them (regardless of whether or not they are being held). Deteriorating snowballs shrink over time, and their items start to fall out as they do so. The speed at which a given snowball deteriorates steadily increases unless a player modifies or fuses the snowball. Fusion does not halt the deterioration unless it adds a certain mass or number of items.

Future Goals:

Here is a list of future features that were either planned or briefly discussed that we were unable to implement in the game's current iteration due to scope and difficulty. We plan to continue working on and implementing the below features should we decide to continue with this project. None of these goals or ideas are final.

- **More Items:**
  - Increasing the number of items players can fuse with snowballs is another key pillar of our game. The game will become stale and boring very quickly without a large pool of items.

- **More Complicated Fusion:**
  - We want to make it so that you can fuse *any* two objects together. This would include things like using two snowballs to make a bigger snowball, or fusing two already infused snowballs for a combination of both special effects.

- **Item Hierarchy:**
  - We want to add an item hierarchy so that sacrificing snowballs to get items has more depth. Essentially, players will be able to influence the quality of the item they get from the dispenser by sacrificing a better snowball.

- **Fort Building:**
  - We want to create a variety of blocks and items to add to the forts, so that much like items, there are meaningful choices and strategies for the player to use. This may be a variety of blocks or upgrades of some sort, or making repairs on the fly.