Synopsis:
We plan for the game to be a fast paced 3rd person **multiplayer** shooter with a heavy emphasis on character movement and unique abilities. We feel 3rd person gives the players a better view of their surroundings, and we also plan to have **custom skins** players can apply to their in-game character.

Multiplayer:
Right now, the prototype is a single-player only experience. Our prototype emphasises character movement and basic ball throwing mechanics. We envisioned the final product being a **networked multiplayer** game with game-modes similar to most other online shooters (i.e., Call of Duty). This prototype provides a framework for core gameplay, so after adding multiplayer there are many opportunities for more **game modes** such as Capture the Flag, Team Deathmatch, etc. If networked multiplayer is too big a task for the capstone project, we also envisioned a potential couch co-op experience.

Throwing Dodgeballs:
Right now, we have the ability to toggle a lock-on mechanic. When on, a red line will be traced to the enemy the player looks at. When the player throws a dodgeball and is locked on, the ball will be forced in that direction. When the lock-on is toggled off, the player can free throw the ball. David noted that the lock-on mechanic felt unpolished and thoughtless, and we should instead stick with either a lock-on or not a lock-on and really get that working well. Ultimately, we thought scrapping the lock-on in favor of an aim assist mechanic would prove beneficial, as it would encourage aiming while giving the player's some leeway of throwing the ball where they want. Alternatively, take a look at Knockout City's dodgeball throwing mechanic. It seems that the ball will **pathfind to its target when the player is locked-on to an enemy**. From there, the enemy can take a variety of actions: get hit, throw a dodgeball at the incoming dodgeball to block it, block it with the ball in their hand, or catch it. These can obviously be expanded upon.

Game Modes:
We considered **game modes** similar to deathmatch, capture the flag, and handball. These modes are a mix of the traditional multiplayer shooter game types mixed with old school games(four square, soccer, etc).

Level Design:
Open wide combat rooms featuring platforming with an emphasis on verticality. Players are **encouraged to use the entire gameplay space**, especially with abilities such as double jumping, dashing, and arc jumping that could help them gain height advantages. An idea that was thrown around was the inclusion of level geometry that removes balls from the field using slopes and bottomless pits. Subtle ball return type designs.
After we submitted the final prototype, we all agreed that an emphasis on a vertical level design is really hard to pull off, especially because **players don't naturally look up.** It seems that a flat level with obstacles for barricades works better. Take a look at Splatoon levels and Halo levels. This doesn't mean we can't include height and looking down on enemies to take some sick

sniper shots, but a bunch of scattered platforms in the air when the player typically hits their head on them since they don't look up isn't gonna cut it.

Also as of now the player can't grab onto ledges. During final prototype playtesting, David expected that he should be able to grab the ledge (at least make it up to the platform he was trying to jump to) since over half his waist was above the platform he was jumping to. Not only should how the player interacts with the walls be adjusted (right now, the velocity gets reset *whenever* the player collides with something) but a ledge-grabbing mechanic should be considered.

Finally, players found it hard to judge where they will land. The player's ground shadow will need to be reworked, perhaps with some sort of light that shines through objects that the player will collide with, or a line that extends from the player's feet onto the platform they will land on. Maybe that line will be green if they are above a platform and red if it's air?

Abilities:

As of now, there is only one core ability in the game: dashing. With dashing comes the ability to arc jump that allows the player to propel themselves forward in an arc to cover a lot of ground, avoid incoming fire, etc. There are many **more opportunities for abilities**, and the current system makes use of the strategy pattern (programming) that allows them to easily be swapped in and out at runtime. Whether you decide to add custom classes with preset abilities or the option to mix and match from a pool of abilities is up to you.

Possible Additions/Adjustments to the Game Mechanics:
- A Catching mechanic allowing the player to defend themselves from incoming fire
- A Blocking mechanic in which players with balls can block incoming shots
- Giving the player the ability to dual-wield dodgeballs allowing them to defend themselves from incoming fire
- Different types of dodgeballs with their own unique abilities; different dodgeball sizes
- If in-game unlockables are added to the game, slot machines will randomly spawn on the map to roll for the unlockables
- A good addition to the game would be the ability to ledge-grab because the player tends to run into the wall or platforms and it removes all player velocity
- Rather than lock-on, develop an Aim Assist mechanic as lock-on was incomplete and more fun to be able to have free-range of throwing
- Reworking the player's shadow while in the air is a necessity as it is hard to tell where the player will land