**Graded unit Design**

For my graded unit, I plan to be doing above the expectations of the unit and create a game I feel fits the description and need of the unit. For my unit my game will consist of complex algorithms for things such as collision, movement, Random generated maps and more.

The design I’d like to do is a Towerfall-esque game. This game is a four player multiplayer game that’s 2d and has procedurally generated maps and a little single player content with it. In the end of my approach to the design I hope to be able to create a game that will be both enjoyable and fulfilling to my programming portfolio.

**Elevator Pitch**

Arcanist is a fast paced, 2D multiplayer arena game. Fight your friends in free for all combat using the powers of arcane magic to blast your foes. Turn the tides of battle with power ups locked in chests and slay your enemies with environment changing pickups. Join in on the action now with up to three other friends and obliterate them in combat with your chosen character and become the lead champion of the oculus.

**USP**

My game will have a unique art and map style that I plan to differentiate from the traditional Towerfall and games like Spelunky. My game will have alternating environments that change the map as the game goes along. My game will be unique in its own way with game specific characters and if I have time each character will have specific lore behind them. This is something completely unique to my game to the likes of Towerfall, which has largely static maps and little lore.

**Hook**

The hook of the game will be the fact that it’s competition between friends. I think that if the games enjoyable and competitive it’ll definitely hook people in, especially when it’s played with other people that you know. Friendly competition is something used as a hook from games like super smash bro's which I compare to my game in terms of "arena" styled multiplayer combat. The changing environment on the individual maps is also another reason people will play the game as it brings in something that is both interesting and fun for people who might not like a stationary map.

**Gameplay Description**

The game will be a Towerfall-Esque game that consists of four players looking to fight each other in arena combat. Each player will spawn at the four corners of the map generated, and have a limited supply of ammunition. Players can regain ammunition from where the projectiles land in the arena. The players’ objective will be to take out the other players and be the last one standing at the end of the game. Players can interact with chests to receive bonuses such as shields, ammunition and wings to fly around the arena. The winner of the game is the last one standing in the arena. Kills are counted at the end of each "round" and when the player reaches 15 kills then the player has won the game.

**Target Audience**

My target audience for the game will be anyone from age 10 and above. Although the game contains violence, it is portrayed in a way that won’t contain any gore or blood. I will make the game easily playable for someone who is young and easily understandable for the older generation as well.

The game itself will not be eSport like, and merely serves as a party game for people at home. I don’t plan to make the game to cater to hard-core gamers and I plan to have it accessible and easy to play for casual players as that will be most of my player base.

My main hope for the game is that it will be used for enjoyment in a family, or even just friends that come together and play the game for a little bit of friendly competition.

**Genre**

The game is 2D multiplayer arena based action game. The game has platforming elements in it, but the main feature of the game is arena combat. The game will have platforming features and will mostly be action based fighting.

**Platform**

Platform also comes under target audience so I stuck it here. The platform this will be developed for will be for console controller use. Since this doesn’t have split screen and I don’t plan to develop an online version of this game I feel using gamepads on a single PC would be the most logical choice for developing this game. Using a single keyboard or multiple keyboards on one pc for more than 2 people would be very difficult to play and become tedious to set up. This is why I feel using a gamepad is more beneficial. The game also seems right to be on a gamepad, as feels a lot easier to move, and accurately aim your projectiles than using a keyboard.

I originally came up the idea that the user would be on the PC and use the mouse to target projectiles at players. This was an alright idea but I felt that having 360 degree aiming would benefit the player too much and make it far too easy to play. Adding in 8 directional firing was a better idea and is much easier developed on a controller through the thumb sticks. Not only that but having a mouse AND a keyboard to plug in with more than 2 players would take up so many USB ports it would be unlikely possible for to play 4 player mode on one PC.

One other minor reason I’m choosing to develop this with a controller in mind is the lack of buttons to be used. The player will not have to press many buttons other than shoot, move in multiple directions through the thumb stick and aim with the right stick. I may add more elements later on but players shouldn’t have to worry about too many buttons to use.

**Key Features**

**Projectile firing**

In my game the main objective will be to kill the rest of the players in the “pit” so one of the main features I’ll need to make enjoyable is firing projectiles at players. In the game Towerfall, the weapons used are bow and arrows. In this game I hope to bring in magic using elements to my game. I plan to develop art unique to each player, whether it be colour schemes or different spells that still have the same damage/speed etc. For example, a red mage will launch a fireball, whereas a purple mage will fire and arcane missile.

If time isn’t an issue towards the end of the project I would wish to have separate projectile ideas such as homing projectiles or even abilities that slow.

Another slight addition to the projectile firing will be gravity influence. I feel in the game with limited space the user should have some sort of skill based firing involved, whether it be slight deviations in gravity influence. Gravity could possibly change during the round on a power up for example or each level could have a unique feature involving influencing the ways projectiles work.

**Procedural Generated Maps**

As part of the Towerfall blog from the developer, he has put up a small blog on how his procedural generated algorithm works for his maps in the game. If Possible I’d love to incorporate this into my game as it would hugely benefit the aesthetics of the game. This algorithm will be essential to creating a replay able game which is hugely beneficial since it is a multiplayer game.

Procedural Generated maps will be similar to each stage and not hugely different. Each map will have specific tiles on which to randomly generate and every map will have tiles that will 100% be Collide able tiles and “filler tiles”. Filler tiles are the tiles that are not going to be reachable by the player but will be viewable on the viewport for the game.

**Limited User Interface in game**

Less of a key feature, more of an improvement from my old games. I feel for a game like this I should need very little user interface, since the players will all have a single life each round and there’s no health bars or score. The kills will be displayed at the end of the round so the User interface won’t show up until the round or game is finished. The only user interface feature needed is the amount of ammunition left during the round.

User interface needs to be clean in my menus since the game will have limited UI. Any UI that is left will become the centre of attention so it needs to be of a higher standard than just text and a few colours. I plan to appeal to the theme of glow in my game. In order to do that I feel my user interface will need to fit in with a gem like feel. Since Gems are seen as “shiny” they tend to fit with the glow theme.

**Chests and accessible’s.**

In my game there will be collectables in game that influence the players’ ability to fight or the map itself. These chests will reset on a timer basis and the timer continues through the rounds so players can’t just take a chest each turn and win every round with it. Also in order to keep the game more interesting, there will be booby traps, which cause negative effects to the player such as shrinking them or actually physically killing them through explosions as such.

Power-ups include and are not limited to: explosive ammunition, shields and player shrinker. I’ll describe them in order. Explosion Ammunition does what it says on the tin, it causes your projectile to “splash explode” around the landing area and cover a large space of the map. If the enemy player touches the blast area when the projectile lands the player is dead. Shields are pretty self-explanatory too, they shield you from 1 projectile hit and lose the shield after it has been “burst”. Player shrinker, shrinks the player smaller by around 50% allowing for the player to easily weave projectiles.

On the side of negative effects we have Player Enlarger, and map transformer so far. Player enlarger does the opposite of player shrinker. Player enlarger enlarges the player, causing the player to become a huge walking target for the other players and negatively affect the players’ ability to win.

**Unforgiving environment**

The game is setup in mind so that the game is unforgiving to the player. The game sets out to do its worst to the player, whether it be booby traps in chests that instantly kill players, or the environment of the game setting out to kill the player. The game is not hard-core, but sets out to set back the player at any point it can by changing environments and much more. Wall panels that shoot fire to kill players, wobbly tiles, fire on floors are all ideas that I’ve had in mind to create a better more exciting element to the game.

Since the theme of the game should be glow I was thinking a lot of the environmental changes to the maps could be based on that theme. Fire could obviously fit to glow, but I was also thinking of adding in other details. At this moment I’m currently thinking of fire, slow mushrooms or a rooting/snare mechanic that glows. The details of this are limited since time is an issue to look at.

**Art Style**

Art style is something I’ve been thinking about for quite a while. Since I’m not very artistic and don’t do very high definition textures or details I came to the conclusion 8-16 bit art styles are probably my best bet in this situation. These art styles take little to no time to create and animate. This art style is something I’m definitely comfortable about doing, as I’ve spent a lot of my spare time doing this art in my spare time.

The game will have a tile based system In terms of map generation. The pixel art style fits in really easy with this type of system since it’s easier to calculate how big a tile is going to be, easier to change tiny details and different shades, and brings an arcade element to my game which is what I’m going for. All details such as characters, projectiles, and tiles can all be changed significantly with such little detail. Adding in a few pixels can change the look of a character in a dramatic fashion.

The glowing mushrooms underground in terraria are an excellent example of what I'm looking for with the glow theme, it's the subtle glow that makes the art look so good in this instance (see picture in folder labelled “ArtStyleExample”). My moodboard is also inside the folder with this document which shows the "glow" feature I'm looking to achieve and the look of the game.

The pixel art style definitely helps for time. Pixel art can be created and changed in a matter of minutes if you’re quick enough. Art can be interchanged with ease and colour schemes are easily developed for each character, such as a wizard with four different colour schemes (red, blue, green, yellow etc.).

Another reason for my choice in art style to be pixelated is that it’s very easy to incorporate glow into it. With the use of bloom it can make things such as pixelated torches look as if they are actually creating a light source in a 2d engine. Since I realised that programming characters and items in my game to be glowed individually will be hugely time consuming, I’ve came to the conclusion that to save time I will bloom them outside of the game in Photoshop and implement them in.

**Competitors**

**Towerfall**

Obviously my main competitor to my game will be Towerfall as that’s the game I’m basing my project on. Towerfall is currently a very successful game since it started the “2D arena” genre that it’s come to be known as. As part of my competitor analysis I’ve written down some parts of Towerfall I’d like to incorporate and elements that I’d like to get rid of/add to:

**Differences:**

**Towerfall has one choice of projectile**

One of Towerfall’s flaws in my opinion is the lack of diversity in choice of projectile and weapons. Towerfall currently only uses bow and arrows for projectiles and weapon. As part of my game I hope to develop some unique weapon choice that will be different and unique to my game. I feel this is a key element to add into my game. This is largely because I feel that the more customisation to a character the player has, the more interested he’ll be about the game and his character. In games in the MOBA genre, people care a lot about character customisation in the ways of skins. Character customisation nowadays has come to be something that’s hugely enjoyed by the gaming community and is hugely beneficial to creating this game. In my game I plan to add more than just the bow and arrow classic of Towerfall, but also to add staves as well and if I have time, wands and more.

**Game Modes**

Towerfall’s main game mode in multiplayer is the deathmatch mode where kills on each player are added up until they have around 15 kills. This I think will be my main mode but I will also had variant modes where it’s still deathmatch but add in little perks. The perks might be something such as not being able to latch onto walls, not being able to grab items, when you die you come back alive with limited time for revenge and much more. I think the modes are something I need to think about in depth since this will have to be the most developed point of the game to make it enjoyable.

**Similarities:**

**Tile based combat and art style**

I think one of the most positive things about Towerfall is its art style. The tile based engine is iconic and one of the main defining features of the game. The games art is pleasing to the eye, while still being minimalistic and not very time consuming to create. This is one of the points I want to take into my game: making it interesting and iconic but keeping that it’s not very time consuming to develop. Changing tiles can be very easy to change.

Another thing about the art style is putting together different frames for animating the sprites is very easy. Although it’s very simple it still looks very smooth and detailed for every little bit of animation you do.

**Environment Changing**

Environment changing is a really nice feature in Towerfall that I thinks very key to making this type of game. Since there’s not a lot going on in this game and there’s little interaction for the player to do, you need to be able to change the game in some way that will make it more interesting for the user to play. I don’t plan to have the matches last any longer than around 30 seconds at a time and they realistically shouldn’t last that long anyway. So map changing needs to really happen at the start and change the map in some way to keep it interesting for the player.

Towerfall uses different ways to change the map, like having the whole map move in a direction and come back in the other direction like screen wrap. I believe I can do a few more ideas than what Towerfall has at its current stage. Tiles being destroyed is a possibility, and jump pads as well. Jump pads may not be a possibility as the size of the map the player will be playing on is considerably small, and jump pads will only clutter the screen.