Building a Base for Exploration

Creating a multiplayer 3D Brawler for exploring difficulty balancing and environmental storytelling

What were my goals?

- Create a fluid 3D "Brawler" style character controller
- Implement 2-player local multiplayer
- Build a basic whitebox level with multiple "Kill-Zones"
- Add a minimum of 3 interactable environmental traps/objects

This should create a base upon which I can build visual assets and design a level in Voxel style next semester, in order to investigate effective techniques for environmental design and storytelling.

What was achieved?

- Semi-fluid movement controller containing light and heavy attack combos, mid-combo adjustable direction, light-to-heavy finishers and vice versa, unique and individually customised charged variants for each combo attack, sprint & attack, jump & light/heavy air attacks and dodging.
- Single voxel terrain with killzone

Although not all goals were achieved, a base controller was successfully created that will be able to be used next semester to achieve my desired goal.

What techniques were be considered?

- Fast and fluid movement
  - The player should be able to quickly traverse the map and have good control over their movements
  - Player should be able to dodge instantly, so long as they aren't committed to another action

Each action was thoroughly tested to ensure transitions and events occur as fluidly as the stock animations allowed, without compromising control. There is a carefully considered balance between weaker and more powerful moves, as well as considerations for combo-ing enemies and 'status' moves, designed to stun or weaken the opponent rather than damage or kill them.
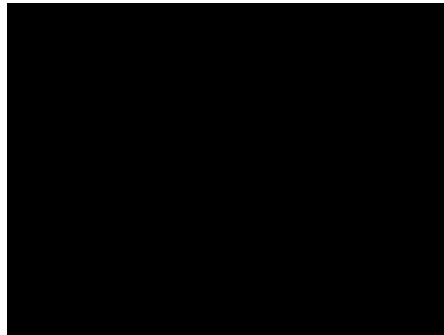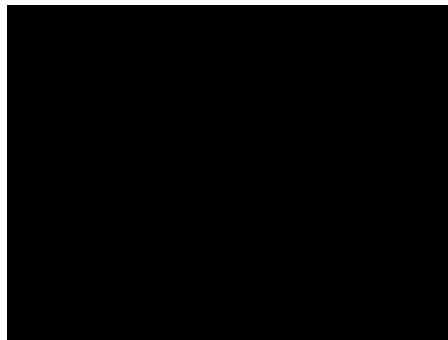
What techniques were considered? (cont.)

- Health
  - Combination between player health, and knockback damage will be used

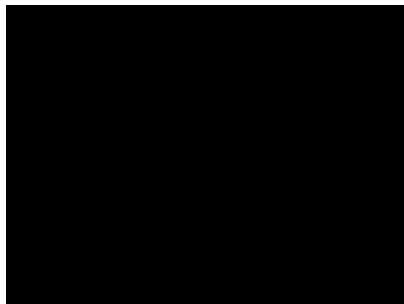4 main 'health' stats:

- Health
- Impact
- Stun
- Pushback

There are different attacks to exploit each of these stats.

What techniques were considered? (cont.)

- Impactful Moves
  - The moves that will deal the most damage and knockback will be slower and easier to dodge
  - Attacks and dodges will have a small cooldown before other actions can be taken
  - Attacks can be charged for greater effect

A lot of consideration and testing went into the timing of moves, with each move having individually frame-adjusted hitboxes and movement, each attack being balanced by either being late in a combo and/or much slower than other moves, but having larger hitboxes and more movement as a trade-off. Attacks can be delayed and charged, allowing timing variation of launching attacks. Light attacks combo into the next attack much faster than heavy ones. Dodge can be used at any point in the attack, and can be used to react to, or throw off opponents attacks, or to chase up high-impact attacks.

Questions?