GLADIATOR

by

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GENERAL ARCHITECTURE

Classes:

ADwarf: Base class for all characters. All actions common to both the player and the enemies are here: Attack, Block (not yet implemented for enemies). Classes **APlayerDwarf** and **AEnemyDwarf** both inherit from this class.

AEnemyManager: Actor that needs to be placed in scene that decides which enemy attacks the player at a given moment. When an enemy (chosen at random between all enemies on map) is chosen, its variable "bool m_mustAttack" is switched and the **AIController** initiates the attack behaviour.

APlayerDwarf Class inherited from **ADwarf**. It's the player class, containing the player behavior and his controls.

Attacks are based on collisions between a dwarf's hammer and another dwarf's capsule collider. The hammer's collision box is only activated during a brief moment of the attack animation.

IMPLEMENTED FEATURES

ADwarf:
- Movement: Dwarf rotates in the direction in which it moves. Implemented by Victor.
- Attack sequence: Dwarf stops moving, its attack animation is engaged, and has a cooldown before being able to attack again. Implemented by Gabriel.
- Colors: Dwarves become red when they get hit by a hammer and their shields become blue if they are hit while blocking (doesn't deal damage) (Gabriel).

APlayerDwarf:
- Camera that can orbit around the player independently from the player's mesh. The mesh is rotated only if the player moves (Victor). If the player dies, an event is sent to the GameManager (Gabriel).

AEnemyDwarf:
- When the player attacks, enemy dwarves have a 1 / x chance to block the attack (Gabriel).
- Behavior Tree containing Enemy AI. Each enemy has a Behavior Tree from the AIController. It possesses the APawn of the ADwarf, and moves it on the map in the direction of the player. To do so, the Behavior Tree accesses variables from the Blackboard assigned to it, and updates the information of the blackboard thanks to a service in the Behavior Tree. When the enemy is close enough to the Player, it will start its Attack Task, dealing damage to the player if the enemy's hammer hits him.(Victor)
- (Implemented but removed later due to instability) After attacking the player, the enemy will back up at a specified distance from the player.(Victor)

Widgets:
- Player health bar: Simple health bar on HUD (Gabriel).
- Enemy health bars: float as billboards on top of enemies' heads (Gabriel).
- Dead screen: Widget that appears when player has died (Gabriel).

Managers:
- Day Night Cycle: An Actor containing two Directional Lights updates the Day Night Cycle. To do so, the lights are both offset form the Parent Actor, then Rotated from an arbitrary point which is the Parent's position. The light's intensity is tweaked thanks to the parent's rotation, going from 0 to 1.(Victor)

Game Experience:

- WASD for Movement Controls.
- Left Click to Attack
- Right Click to shield yourself
- Enemies will move towards you until their reach a close distance between you and them, one at a time. once they are close to you, they will stop and attack. Time this step, and you will be able to get away while their are attacking.

<u>KNOWN BUGS</u>

- On rare occasions, when enemy dwarves get hit, they stay red indefinitely.
- If the player spams the attack key, they can sometimes attack without the animation playing.
- The widget that appears when the player wins the game does not appear.