

Task: Implement the enemy behavior system in the game "Dungeon Dragons" in accordance with the GDD (Game Design Document) requirements.

General Description:

It is required to create an artificial intelligence (AI) system for enemies in the game "Dungeon Dragons." The system should provide diverse, realistic, and adaptive enemy behavior, creating interesting and dynamic combat situations for the player.

Task Essence:

It is necessary to implement AI algorithms for various types of enemies, providing them with adaptive movement, tactical decision-making in combat, as well as interaction with the surrounding world.

Logic (Metadata, Object Relationships/Dependencies):

- Each enemy has the following parameters: health, aggression level, defense level, attack damage, movement speed.
- Enemies can have various states: patrolling, attacking, evading, waiting.
- Enemies react to situational changes: switch to attack mode upon detecting the hero, evade when the hero attacks, change state when taking damage.
- The AI system utilizes navigation algorithms for pathfinding, obstacle avoidance, and proper movement.
- Enemies have a visibility and hearing range, influencing their reactions to the hero.
- Enemies only react to the hero, not to each other.
- The hero moves through zones, each having its own enemy and visibility zone.

Enemy Behavior:

- Enemies in the patrolling state move between specific points, monitoring the visibility zone and reacting to the hero's approach.
- Upon detecting the player, the enemy switches to the attack state and starts moving towards the hero, choosing the optimal route.
- Each enemy is located in a specific zone, and they do not overlap with each other.

- Enemies with a high aggression level can attack the hero even at a distance if the player is within their visibility zone.
- When receiving damage, an enemy may temporarily switch to the evasion state and move toward a safe point.
- Enemies in the waiting state exit it upon detecting the player or when the situation changes (e.g., the hero initiates an attack).
- The first type of enemies attacks the hero, while the second type of enemies flees from the hero.

If there are several monsters on the arena, but some of them do not interact with each other, the system should implement the following logic:

1. “Aggressive Monster”:
 - Possesses parameters: health (Life Points), damage (Damage), speed (Speed), aggression (Aggression).
 - States: Idle, Moving, Attacking, Dead.
 - The monster attacks the hero if the hero is within its line of sight (Activation Distance), and the aggression level (Aggression) is sufficiently high.
2. “Passive Monster”:
 - Possesses parameters: health (Life Points), speed (Speed).
 - States: Idle, Moving, Fleeing, Dead.
 - The monster does not attack the character or other monsters. It either stays in the waiting state (Idle), moves around (Moving), or tries to flee from the hero (Fleeing) when approached.