

SCOPE

The scope is to develop a MonoBehaviour that allow to get in Realtime the target object's distance and occlusion information

IMPLEMENTATION

SCRIPT

The script must to be generic in order to adapt to the different logic and object's states in which it will be used.

The script exposes directly in editor these configuration properties:

- **target**: single target object
- **targetTag**: tag to identify the target objects
- **maxDistance**: maximum check distance to occlusion detection using raycast
- **viewAngle**: field of view angle to check the visibility of the target
- **rayNumber**: number of ray to check the occlusion detection
- **enableDebug**: enable/disable debug visualizzation

The script allows to call these functions:

- **getDistanceFromTarget**: get the distance from the target
- **isTargetVisibleOnFOV**: check the target visibility in the field of view of the object
- **isTargetVisibleByRayCast**: Check the target visibility using RayCast technique. Using this function, we can check also the occlusion about some other objects in the scene

This script provides some functions to help the developer during debug.

SCENE TEST

I created a scene in unity to test the script.

In the scene there is one player (cube), some enemies (sphere) and a wall to check the occlusion.

You can move the player using the keys WASD and an enemy using IJKL.

The enemy object uses another script (EnemyLogic) to implement a logic to change color using the function exposed from the main script:

- GREEN: the enemy sees the target
- WHITE: when target is close to the enemy
- BLACK: when target is far to the enemy
- GRAY SCALE: closer is the enemy whiter is the color

EnemyLogic script allow you to enable "Focus on target" to continuously update the point of view on the target.