

Documentation-Jan: AI Pathfinding

AI Pathfinding System:

- For the Pathfinding of the AI it was used the third party system ,Navmesh plus', therefore look also into this documentation → <https://github.com/h8man/NavMeshPlus>
- it works basically by baking a navigation mesh over previously specified areas of the game Map
- Every AI-Agent needs to implement the ,Nav Mesh Agent'-Component if it shall be influenced by the Nav Mesh (see Fig. 1)

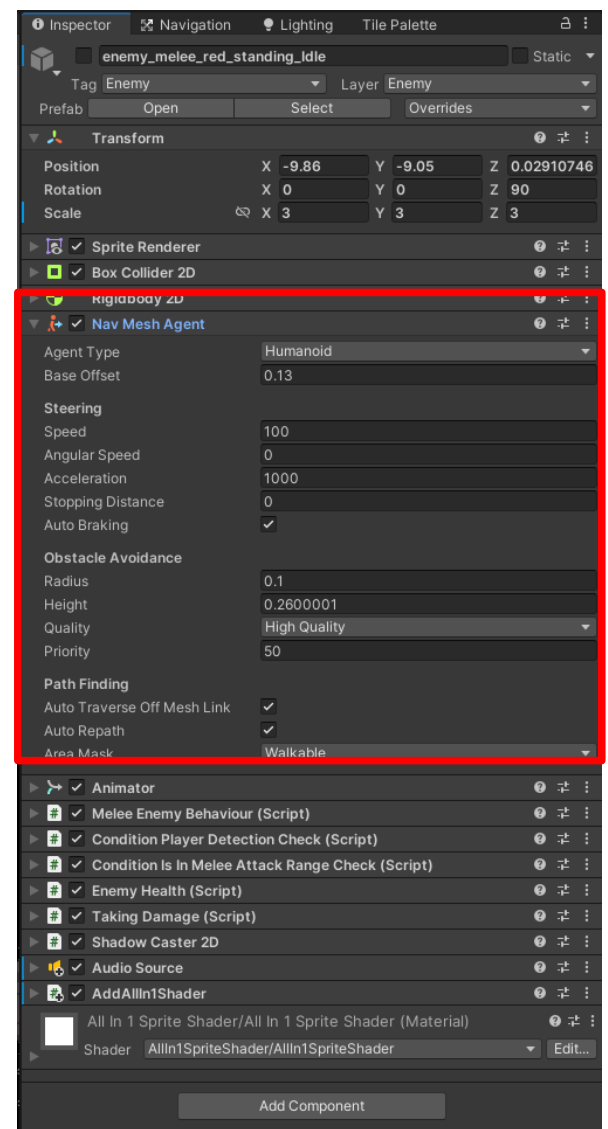


Fig. 1: Nav Mesh Agent Component on an Melee Enemy Agent

- Additional Settings for the Agents regarding Pathfinding can be done in the 'Navigation' Panel (can be found in the Menu Toolbar → Window/AI/Navigation)
 - there also Layer for walkable Areas can be set

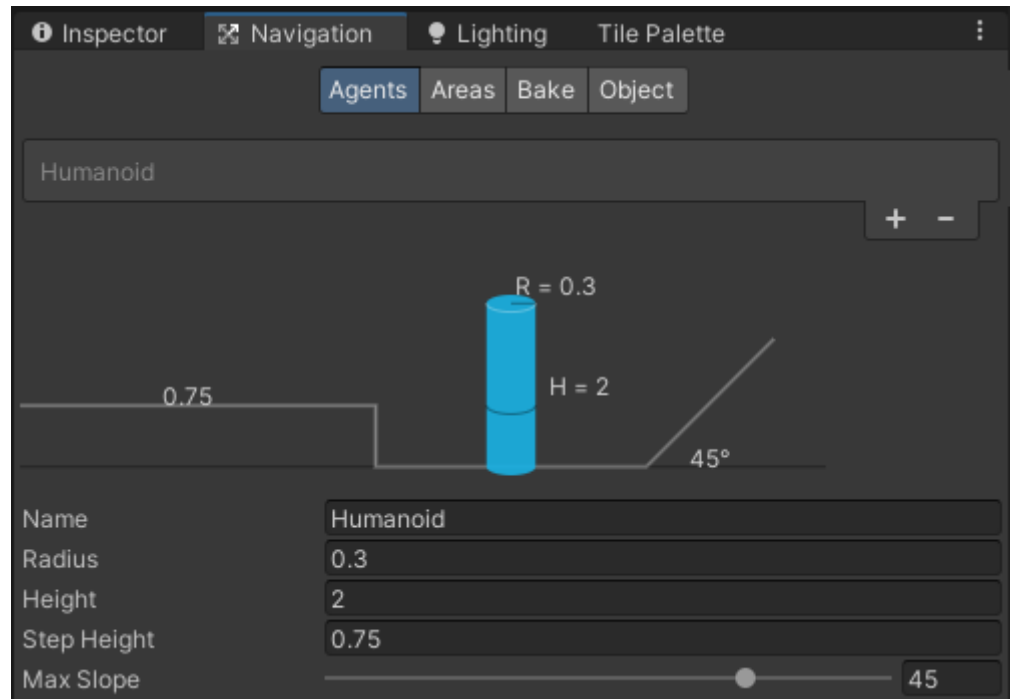


Fig. 2: The Navigation Panel where Settings for the Agents regarding Pathfinding relevant Options can be set.

- For the NavMeshPlus to work it needs a according GameObject in the Hierarchy (compare Fig. 3)
- For applying a Navmesh it needs to be ,baked' compare Fig. 4.

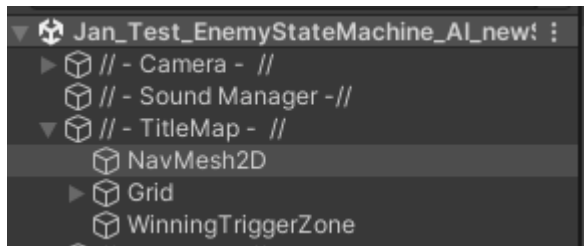


Fig. 3: NavMesh2D Object

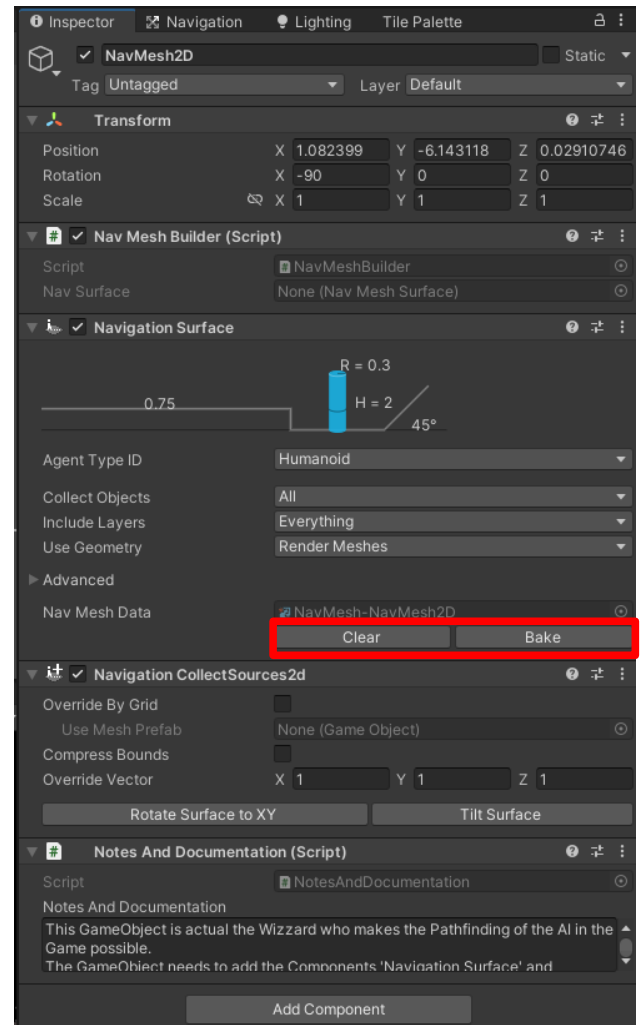


Fig. 4: The necessary Set Components of the NavMesh2D Object (also compare Fig. 3)

- additionally all Elements the Agents shall be capable to walk on or not capable to work on needs to have a ,Navigation Modifier'-Component with the Property ,Override Area' checked and the subproperty ,Area' set to the according Layer (which can be set in the Navigation Panel under the ,Area' Tab) (compare Fig. 2 and 5)

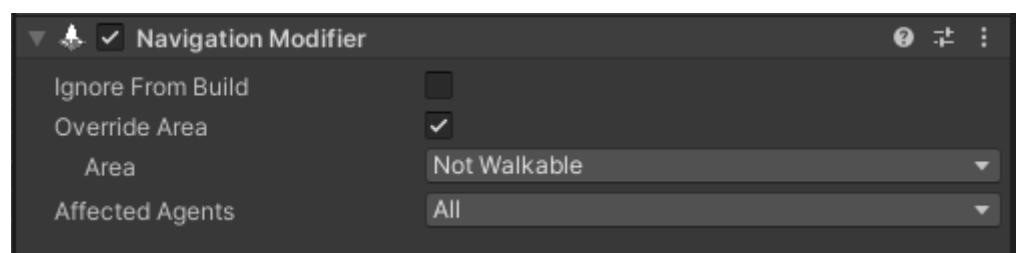


Fig. 5: The Navigation Modifier Component (needs to be added to all GameObjects that shall be walkable or not walkable)

- In the current version of the Game a Navmesh of a Level is prebaked and will be rebaked automatically on every door opening, so the Agents in a closed room are able to walk freely after the door was opened.
 - → this Logic is handled in the ,NavMeshBuilder.cs' which is implemented by the ,NavMesh2D' GameObjects (compare Fig. 3 and 4)