Dismembering system

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Preface

Thank you for purchasing this asset!

I've worked hard to make you a good and stable product and I really hope that you will enjoy using it!

Please feel free to reach out for support, feedback and ideas. My email is listed in the support and feedback section of this document.

I would appreciate any feedback and please don't forget to rate the asset 😊

Description

This system is meant to automate the process of setting up a ragdoll with or without dismembering.

To see the script in action check out the provided Demo scenes in the Dismember/Demo/Scenes folder.

If you just want positional damage you can follow the following steps to manually set it up.

Manually setting up a model for dismembering

1. Create a ragdoll on your model (You can use the DismemberManager and press "Create Ragdoll Only" this however requires the mesh to have individual parts)

2. On each bone that has a corresponding mesh you have to add the "GenericDismember" script and link it up with the corresponding mesh, select the limb type from the drop down, and if you want set the health for the limb (when the health reaches zero it will dismember".

3. Add the "DismemberManager" script to the root object of the model.
   WARNING: DON'T PRESS "SETUP DISMEMBERING" IT MIGHT RUIN YOUR RAGDOLL!!!

What can I do with this

- Create a ragdoll for your humanoid models.

- Set up positional damage.

- Dismember your model!

Requirements

You'll need a model that's already created for dismembering with individual parts as meshes on the model.

The automated process is made to be compatible with zombie models from Studio New Punch.

And as of version 1.1 also other humanoid models, that has individual mesh parts.

Usage with zombies from New Punch Studio

1. Add the ~~zombie~~ model (with parts) to the scene.

2. If it exists, remove the full mesh (Single mesh that has the entire zombie)

3. Add the DismemberManager script to the root of the gameobject.

4. Press "Setup dismembering"

5. That's it.

If you have a death animation you can select animation under “Death Type” and type the name of the state below in “Animation State Name”.

The script uses direct animation, that means that it doesn’t support animator variables as of version 1.1

I’ve included a small bloodeffect you can add, but get a proper one if you want to use this.

The rotation of the effect is not good at the moment, so use one that sprays in all directions.

Implementations

The enemies are still set up in the normal fashion by:

- Add your enemy model to the scene
- Remove extra meshes (if any)
- Add the "DismemberManager" script to the root of the enemymodel
- Click "Setup dismembering"

UFPS

Go to "File->Build Settings" Click "Player Settings" and where it says: "Scripting Define Symbols" Write in: UFPS

TPSA

Setup Layers and Tags on the model:

- Create a new layer called “Enemy” (if it doesn’t exist)
- Select the model and change the layer to “Enemy”
- Select “Yes, Change children”
- Create a new tag called “Enemy” (if it doesn’t exist)
- Select your model and change the tag (on the root object) to “Enemy”.

- Add the TPSA_AI or a script extending that class.

Add the "TPSA_AI_Integration" script to the root of the enemymodel

Go to "File->Build Settings" Click "Player Settings" and where it says: "Scripting Define Symbols" Write in: TPSA

General implementation

To hurt a limb you can use: `SendMessage(“ApplyDamage”)` or use this script snippet:

```
GenericDismembering dismemberScript = TheColliderThatWasHit.gameObject.GetComponent<
GenericDismembering>();
```

```
If (dismemberScript) { // if the collider has a dismemberscript
```

```
            dismemberScript.Damage(amount, force); //where amount is how much to damage
and force is a Vector3 that contains the direction of the hit and the magnitude. (force
is optitional)
```

```
}
```

* TheColliderThatWasHit is normally either obtained from a unityevent like OnCollisionEnter or from a Physics.Raycast

To learn how to hook on to the events OnDie, OnDamage, OnCribble or OnDismember from code, please look in the included script “TPSA_AI_Integration”.

Also feel free to use/study any of the included demoscripts and scenes.

Pitfalls

For the automated setup to work, you have to add the model to the scene.

You cannot put the script on a model, create a prefab, and on the prefab (not in the scene) generate ragdoll, with or without dismembering. It has to be in the scene, when you create the ragdoll!

Scripting

To access the exposed functions you need to have a reference to the instance of the script you wish to use. And access the following functions/variables through that reference.

Example of gaining a reference to the dismember manager from a script on the base of your model/enemy:

```
DismemberManager dismemberMngr;

Void Start() {

            dismemberMngr = GetComponent<DismemberManager>();

            if (dismemberMngr == null) {

                        Debug.LogError(“No dismember manager on object!”);

            }

}
```

The DismemberManager and GenerelDismembering each contains exposed (public) functions/variables to use at will.

Exposed functions and variables

For more advanced usage (and script access). Also take a look at the provided “Scripts Overview” documentation.

DismemberManager

public bool handleOwnHealth = true;

If you want to use your own AI and that handles the overall health set this to false.

void Reset()

Used for object pooling to respawn the model, it resets all damage and restores the limbs to their original state.

void Die(Vector3 addForce)

Kills the model using the selected deathmode and adds “addForce” velocity to the rigidbody.

void Ragdoll(bool activate = true)

This function switches the model to/from ragdoll.
The parameter “activate” is optional and defaults to true.

GenericDismembering

public void Damage(float amount, Vector3 force, bool canDismember = true)

public void Damage(float amount, bool canDismember = true)

Adds “amount” damage to a limb, if force is given it will be applied to the limb.

If canDismember is set to false the limb wont dismember.

Support and feedback

Please feel free to contact me for support, ideas and if you find any errors.

E-mail: ungamed@hartvigs.it

Website: hartvigs.it

Discord: https://discord.gg/AEsqfNY

Changelog

Version 1.3.0

- Added support for not generating a copy of the limb if a particle system just "blows up the limb" Example for this behavior in the “Advanced Dismembering” demo scene (Applied to the head).
- Added "AdvancedDismember" for more customization (Thank you Mio!)
- Optimized some internals
- Increased support for both TPSA and UFPS
- Probably added more bugs to fix later
- Improved blood effect...again.
- Fixed a bug in the precompiler directives that would fail a real build.

Version 1.2.2

- Added support for TPSA
- Fixed scaling issue

Version 1.2.1

- Added checkbox to make the model die if it gets crippled.
- Improved bloodEffect
- Fixed
  - BloodEffect rotation
  - Spelling (Thank you D.R.) >.<

Version: 1.2

- Added:
  - Demoscripts:
    - RayShooter – demonstrates damage with mouseclick using raycast.
    - ColliderDamage – makes physics do damage.
    - Damage – Damage handler for use with 3rd party tools.
  - DemoScenes:
    - Collision – Demo: shows the usage of “ColliderDamage”
    - RayShooter – Demo: demonstrates usage of the RayShooter script.
  - UnityEvents: OnDie, OnCribble (when a foot or leg is shot off), OnDamage, OnDismember.
  - Ragdoll now includes neck part.
  - Button to create Ragdoll only. (Without dismembering)

        - To use: add the script, click “Create ragdoll only” and then remove the script again.
- Changed:
    - The pose of limbs that are shot off are now copied with animation positions.
- Fixed:
    - Blood effect rotation

Version: 1.1

- Rewrote the automation of ragdoll and dismembering setup.
- It should now work with all humanoid models with parts.
- Hips will be assigned as the root bone and is by default, the only part that can take damage without getting shot off.
- Added:
    - Tooltips for most settings (hover the mouse cursor over the setting to see details).
    - Duration of bloodeffect.

Version: 1.0

- First release.