

RUBBER NINJAS MODDING TUTORIAL

This tutorial is for users that want to make their own campaigns, characters and ragdolls for Rubber Ninjas. You can use mods only with the full version of Rubber Ninjas.

If you are new to game modding it might be difficult for you to get your mods working. Don't worry, Rubber Ninjas will be updated often to include the best user made mods, so you can just download the latest version to benefit of new campaigns and content.

If you are comfortable with game modding you can try to understand how things work just by checking out the files, they are pretty self-explanatory.

A notice, the parser is not especially robust, so follow the files format closely (don't add extra spaces or new lines, invert order of things etc).

Be sure to MAKE A BACKUP COPY OF RUBBER NINJAS before you mess around with the files.

GENERAL STRUCTURE

Campaigns, ragdolls and characters are all described by text files. These are simple text files, (not .doc or .rtf). The extension of these files is not .txt, still they can be opened and saved by a text editor, such as textedit for Mac, or Wordpad and Notepad++ for Windows (the normal Notepad does not work well).

ON WINDOWS: Navigate to C:\Program Files\Rubber Ninjas (or wherever you installed the program) then open the "data" folder.

ON MAC: Open the "Rubber Ninjas" application bundle. To do this right click (or ctrl-click) on the application icon and chose show package contents, then open the contents folder, then open resources folder, then the data folder.

This "data" folder contains different folders:

The walls folder contains the images used as textures for the spheres' walls. These images must be 2048x1024 pixels. You can customize these pictures or make new ones if you wish, then integrate them in your campaign as we'll see later.

The ragdolls folder contains files (with extension .ragd) used for specifying the shape of a character.

The characters folder contains files (with extension .char) specifying a character, his name, his shape (through a ragdoll file), what weapons he can use etc.

Each character file must specify a ragdoll file it uses, and 2 or more characters

can use the same ragdoll file.

Weapons folder contains files (extension .weap) that specify shape and properties of weapons. These files are very similar to the ragdoll files.

The campaigns folder contains various campaign folders. Each campaign contains a CampaignSettings.txt file used to specify the campaign structure. Each campaign folder possibly contains also local characters, ragdolls, walls and weapons folders (that contain data for use only with this campaign).

In the "data" folder there is also a 2PlayerSettings.txt file that specifies some settings for the 2 player games, as well as what characters are available for the 2 player fights.

HOW TO MAKE A NEW CAMPAIGN

To make a new campaign go in the campaigns folder, duplicate one of the original campaign folders, rename it to "my new campaign" (or something else you chose).

Then start the rubber ninjas application, in the "campaigns" menu there should be your new campaign "my new campaign".

Try playing it. it will be in practice the same as the the campaign you duplicated to start with.

Now to make it different, get back to editing the CampaignSettings.txt file in your "my new campaign" folder.

For instance try changing the first character file in level 1: you can use any of the characters in the "characters" folder located in the "data" folder. To do so just replace the character file name in quotes with another one, for instance "pirate.char". This way in level 1 you will play with the pirate!

If you want to use one of the characters in the LOCAL campaign folder (the characters in the "characters" folder located in the "my new campaign" folder, if it exists), you need to put @ before the character file name (still in the quotes), for instance CharacterFile:"@pirate.char"

To change a characters' weapon change the number after "Character Weapon:"

What each weapon number corresponds to can be found in that character's .char file. 0 means no weapon, also do not put a weapon number greater than the weapons available to that character.

The Background: field specifies which image file in the walls folder to use in each level. Again you can again put a @ in front of the file name in order to use the local walls folder.

Follow the format used in the file to change other values and make your own campaign.

HOW TO MAKE A NEW CHARACTER

To make a new character, start by going in the characters folder located in "data" and duplicating an existing character. Rename it to "my_new_character.char" . You can now open it with a text editor.

Change the CharacterName field to what you wish.

RagdollFile: specifies which .ragd file to use to give a shape to your character.

You can specify any file in the "ragdolls" folder (located in data) [or the local campaign ragdolls folder by adding @ in front of the ragdoll file name].

LengthMult increases the character's height, ballmult increases balls size, widthmult makes him thicker, tensionmult makes him more rigid, massmult makes him heavier.

Energy is the hit points the character has (in 2 player mode only).

PushPower increases the push that the character gives when hitting opponents.

SkinColor, Clothcolor, AltSkinColor, AltClothColor are colors specified in hex triplets (http://en.wikipedia.org/wiki/Web_colors) (example: white is FFFFFF red is FF0000).

The Alt (alternate) colors are used for player 2 in 2 player games and by the cpu in 1 player games.

StarsColor similarly the color of the stars when he's hit.

NumWeapons is the number of weapons the character can use (used mostly for 2 player games), the weapons are then listed by number. If you add a new weapon be sure to increase the NumWeapons by 1.

Each weapon again has a .weap file to specify shape, as well as LengthMult, BallMult, WidthMult, TensionMult, MassMult.

Modify some thing for your my_new_character.char, then you can include this new character in your campaigns, or in 2 player matches.

HOW TO ADD A CHARACTER TO 2 PLAYER CHARACTER SELECTION

If you made a new character in the characters folder and you want to use him in 2 player games, open the 2PlayerSettings.txt file in the data folder, increase the NumCharacters: value by 1, then simply add your character's file name to the list (in quotes)

HOW TO MAKE A NEW RAGDOLL FILE (NEW SHAPE)

ragdoll files are located in the ragdolls folder and use .ragd extension.

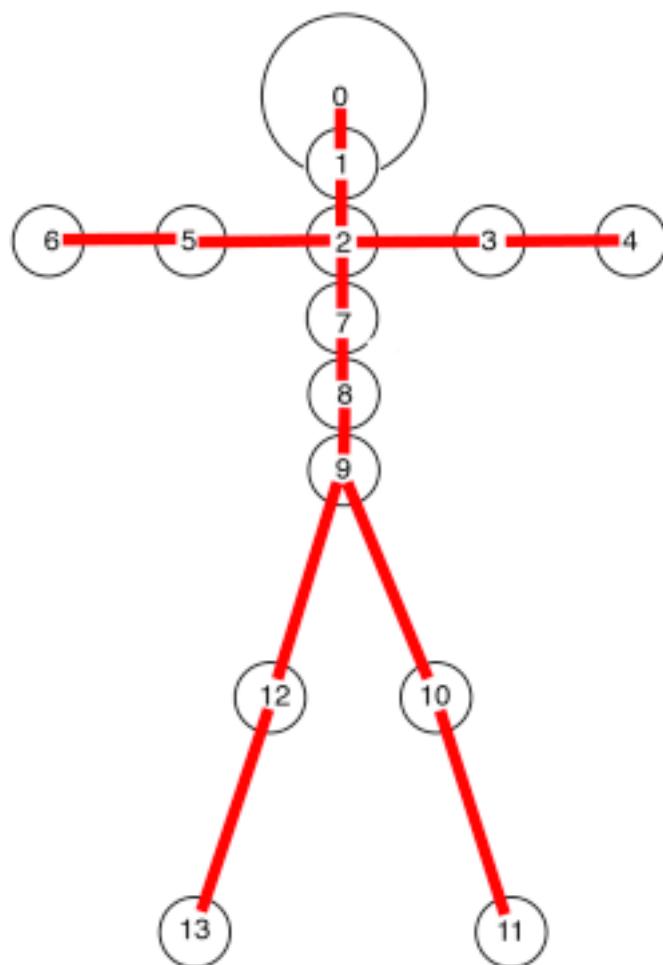
They are the most complex kind of file.

First you need to understand the model behind Rubber Ninjas' ragdolls:

Ragdolls are mainly composed of balls and links. For instance the head is a ball, so is the foot and the knee.

The forearm is a link, that links the elbow to the hand. All links link 2 balls together, and keep them at a certain specified distance. Without links balls would just move independently, links tie them together.

Here is a picture of the most common 14-ball ragdoll (some ragdolls have less balls, some have more).



This Ragdoll has 14 balls and 13 links. Your ragdolls do not have to use this shape or other shapes, they can have any shape you wish! However since this is

a fighting game human-looking shapes are more interesting.

Every ball has a number, specified in the picture. Every link then specifies which 2 balls it links, as well as the intended distance, the link's and more.

Open a ragdoll file (.ragd), skip the InfoForWeapons for now.

You can see it lists many "New Ball" with different properties. Writing the ball number and description is optional, in all case the first ball will have number 0, the second ball has number 1, etc.

After the balls there are the links, specifying which balls they link (the ball1 and ball2 fields), the length and other stuff we'll see later.

For a ragdoll to stay in shape balls and links are not enough, we need also angles. An angle is the intended "base" angle between 3 consecutive balls.

Back to the picture example, we want balls 5, 2 and 7 to form an angle of 90 degrees so we add that angle in our ragdoll.

New Angle

```
ball1: 5  
ball2: 2  
ball3: 7  
degrees: 90  
strength: 200
```

(strength defines how rigid (inflexible) is the angle)

similarly we want 9, 10 and 11 to be in a straight line, so we make a new angle with

New Angle

```
ball1: 9  
ball2: 10  
ball3: 11  
degrees: 180  
strength: 100
```

Angles in 3D might not work as you intend them in 2D.

An angle in 3D can only be between 0 and 180 degrees!

Consider the ragdolls' legs: the angle 8-9-10 and 8-9-12.

In 2D you would say 8-9-12 is something like 160 degrees, while 8-9-10 is 200

degrees and that would be it.

In Rubber Ninjas instead we say both angles are 160 degrees (the minimum if you consider the angle clockwise or anti-clockwise, as clockwise and anti-clockwise are not defined in 3D).

Providing these angles does not completely block rotation. if we want the two legs to stay separate (avoiding ball 12 rotating along the 8-9 axis towards ball 10) we must also add an angle between 10-9-12, of 40 degrees in this case.

Try reading and experimenting with one of the default ragdolls to see how they work.

Torques:

Angles alone can shape the ragdoll a lot, but they still allow some rotation you may not want.

Back to the 14 ball ragdoll, even if we add all angles legs can rotate around the body axis independently of the arms. for instance arms may be rotating clockwise and legs counterclockwise without any connection, which wouldn't look very realistic!

The way we solve this is with torque, basically an angle between 4 balls. Consider the balls 5-2-9-10: we want the balls 5 and 10 to have the same rotation with respect to the 2-9 axis i.e. the right elbow should be on the same "side" of the body as the right knee.

(imagine being far away along the 9-2 axis, i.e. above the ragdoll, and looking down. Now, down looking from above, balls 2 and 9 look like they are on the same (central) point. From above, you want ball 5 and ball 10 to be in the same direction with respect to the 2-9 point, you want the angle formed by 5-(2-9)-10 to be 0)

So we specify

```
New Torque  
ball1: 3  
ball2: 2  
ball3: 9  
ball4: 10  
degrees: 0  
strength: 100
```

and the same trick for the left side

```
New Torque  
ball1: 5  
ball2: 2
```

```
ball3: 9  
ball4: 12  
degrees: 0  
strength: 100
```

degrees in this case is the difference in the rotation of ball1 and ball4 with respect to the axis ball2-ball3.

It might take some testing to get things as you wish, feel free to experiment.

MORE INFO ON BALLS AND LINKS:

the "damaging" field is usually 0 (non damaging) or 2 (damaging). it can be 1 if "partially damageable".

the damageable field is usually 0 (non damageable) or 2 (damageable). it can be 1 if "partially damageable"

if a damaging ball (or link) hits a damageable ball (or link) it damages.

if a damaging ball (or link) hits a non-damageable ball (or link) it doesn't damage.

if a non-damaging ball (or link) hits a ball or link it doesn't damage.

if a partially-damaging ball (or link) hits a damageable ball (or link) it damages.

if a partially-damaging ball (or link) hits a partially damageable ball (or link) it doesn't damage.

In the most ragdolls head is partially damaging, and upper arm and legs are partially damageable.

colortype: can be -1 (skin color), -2(cloth color), -3(wood color), -4(metal color), or any hex triplet (e.g. "FF0000")

balls quality: defines the number of polygons the ball has, 3 is usually used for head and other big balls, 2 for smaller balls.

ball movespeed: defines if the ball is moved by arrow keys pressing and how much. In most ragdolls only the head moves (movespeed: 0.012), while the other balls' movespeed is 0.

link slices: defines how many polygons the links has, usually 32 for normal links, 16 for small links

balls closeballnumber: is currently unused.

ball: ishead is used to identify the head and other damageable extremity balls that can detach when hit by a finishing hit. Don't worry about this, just mark the head as 1, 0 for the rest ;)

WEAPONS

Weapons: weapons are basically the same as ragdolls: they're made of balls, links, tensions and torques, that are added to the ragdoll's own balls, links, tensions and torques.

Say you have a ragdoll whose number of balls is 14 and whose right hand number is 4, you can make a simple bat weapon file like this:

```
New Ball: 14 (this ball's number is 14 since the ragdoll's  
balls numbers are 0-13)
```

```
mass: 0.5
```

```
radius: 0.03
```

```
damaging: 2
```

```
damageable: 0
```

```
closeballnumber: 4
```

```
colortype: -3
```

```
quality: 2
```

```
ishead: 0
```

```
movespeed: 0
```

```
New Link
```

```
ball1: 4
```

```
ball2: 14
```

```
length: 0.3
```

```
width1: 0.01
```

```
width2: 0.03
```

```
damaging: 2
```

```
damageable: 0
```

```
colortype: -3
```

```
slices: 32
```

```
New Angle
```

```
ball1: 3 (this is the right elbow! )
```

```
ball2: 4
```

```
ball3: 14
```

```
degrees: 180
```

```
strength: 500
```

This would work only for a ragdoll whose number of balls is 14, whose right hand number is 4 and whose right elbow number is 3.

You can make a more generic weapon by replacing the "14" (number of balls in ragdoll) and "4"(right hand number) by "NB" (number of balls) and "RH"(right hand) (and also "3" the right elbow with "RE") like this:

```
New Ball: NB
```

```
mass: 0.5
radius: 0.03
damaging: 2
damageable: 0
closeballnumber: 4
colortype: -3
quality: 2
ishead: 0
movespeed: 0
```

```
New Link
ball1: RH
ball2: NB
length: 0.3
width1: 0.01
width2: 0.03
damaging: 2
damageable: 0
colortype: -3
slices: 32
```

```
New Angle
ball1: RE
ball2: RH
ball3: NB
degrees: 180
strength: 500
```

The RE, RH etc need then to be specified in the ragdoll's file for this to work.

```
InfoForWeapons
RightElbow:3
RightHand:4
LeftElbow:5
LeftHand:6
RightKnee:10
RightFoot:11
LeftKnee:12
LeftFoot:13
```

NB need not be specified.

TIPS:

You can have fun by simply making your own campaigns with pre-existing characters (those selectable in 2 player games), it's fast and easy. Customizing your ragdoll's color, size, etc. is easy from the .char files. Making new ragdolls can be tricky. Start by making small changes to existing files, until you get comfortable with the system.

If you want to make a campaign available to others, it is best you package it with all non-standard characters, weapons and ragdolls in the local campaign folder, so that players can install it just by dropping your campaign folder in the campaigns folder, without having to add additional files.