How to use GridCreator

Introduction

GridCreator is a system used in the Action Roguelike Engine to create an ini file which stores all the data for the room grids used to create random rooms.

It works by taking a number of sprites (sprRooms, sprItemRooms, sprBossRooms etc…) and looping through them pixel by pixel converting them in to a ds_grid of colours.

Once the object has looped through all of the given sprites (you must tell it which sprites to convert) it will save them in an ini file in your project's working directory, which will be something like %LocalAppData%/<project name>.

How to run GridCreator

In your project there is a room called roomGridCreator. In order to run GridCreator you just need to drag that room to the top of your rooms list and run the project. GM always runs the room which is at the top of the list first. The room contains one object – objGridCreator. This object is the thing which loops through your room sprites converting them in to grids and saving them to an ini file.

Once that's done you need to take the created file, called "data.ini" in your local app data folder and copy it across to your project's included files.

Now, next time you run your game it will use the newly created "data.ini" file instead of the one included in the engine.

How to add new room grids

Adding new room grids is easy. In your project's sprites there will be a folder called "Room Grids". In that folder is a number of sprites all of which are 15x9 which is the current size of our rooms. All you have to do to add new room grids is add new images to any of those sprites.

There is a different sprite for each type of room.

How to add a new room type

Firstly, you need to add a new value to your room_type enum. This is defined in objControl's create event. Let's say you want to add a "challenge" room. Find the room_type enum in objControl's create event and add "challenge" to the list.

Next you need to create a new "room grids" sprite for your room type, so go to your "Room Grids" sprite folder add a new sprite called sprChallengeRooms. Add whatever you like and however many images you like to the sprite.

Now take a look at the code in objGridCreator's create event. There's a ds_lists being defined in there called sprite_list – you need to add your sprite (sprChallengeRooms) to sprite_list.

Once that's done, run GridCreator (see section above) to create a new ini file.

Your room is now part of the game's data file! Finally you need to make it spawn in the level. Go to objControl's Create Event (CONFIG section) and add a new global variable called global.challenge_rooms. This will be how many challenge rooms you want to spawn on each level. If you use a decimal value, say 1.5, then it will always spawn 1 and have a 50% chance to spawn 2 (using the round_chance() script)

Now that you've defined that variable, you need to go to your generate_level script and add a section for creating your challenge rooms. So go to around line 65 and add this code:

```
///Challenge room(s)
repeat(round_chance(global.challenge_rooms))
{
    var a = create_room_connected(w, h, 1, 1, room_type.normal);
    if (a == noone) continue;
    a.type = room_type.challenge;
}
```

^ that's just a copy of one of the other room-spawning code chunks.

With all that done, your room should now be created in the level. If you want the room to show up with a different icon on the minimap, you need to edit the objMiniMap object and add a new image to sprMapRoom.

Where are the grid colours defined?

The grid colours are defined in objControl's create event. There's a big long list of 'em:

```
///Level chunk colours
global.c_block = c_blue;
global.c_brazier = c_yellow;
global.c_pot = make_colour_rgb(255, 128, 0);
...
```

How to add a new object and define its colour

Let's say you want to add a new enemy... a zombie.

Create an object, objZombie. Next, go to your colour definitions in objControl's create event and add a new colour (any colour which isn't already being used):

```
global.c_zombie = make_colour_rgb(100, 0, 200);
```

Now go to your room sprites and add some of the defined colour (wherever you want your zombies to spawn) and run the GridCreator to convert the edited sprites.

Next, go to the initialise_room script – this is where each room creates a grid of objects *using* the colour grid which it has been assigned. There's a big old switch statement in there, you need to add your global.c_zombie as a case in that switch statement and make it set the grid value to objZombie.

That's it! objZombie should now spawn in the level.

To be continued…

This guide will be added to as and when it needs to be. If I get a lot of the same questions being asked about GridCreator, I will add another section to this guide.

If you have a question which isn't covered by this guide, please email me @ will_lewis2@hotmail.co.uk

Thanks!