**Dynamic Tile Maps 1.0**   
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I've heard a lot of people recently asking about dynamic arrays for maps of any size within tile editors. Well here is a tutorial that should help you get started pronto.

First of all, lets consider what we want as map data. We want a list of tile ID's that correspond to tiles within a datafile, we want the tiles type (e.g. whether it is walkable, animated etc).

So we'd define a structure such as:-

typedef struct

{

unsigned char TileID; // The ID of this tile

unsigned char Type; // What type of tile is this

} MAPTILE:

So we have created a new type called map tile. Now we need to know how to declare our map tile. If we had fixed map sizes we could declare it as follows:-

MAPTILE Map[MAPX][MAPY];

Since we want a variable sized map, we have to think a bit more cleverly. Also, we want to implement variable layers into the map. In order to use variable map sizes we have to setup the Map like this:-

MAPTILE \*\*\*Map;

Looks strange doesn't it? Trust me, I thought this at first. What we now want to do is dynamically add each element to the Map pointer:-

// Allocate memory for the maps Layers elements

Map = malloc(sizeof(int\*\*) \* MapLayers);

// Allocate memory for the maps X elements

for(lyr = 0; lyr < MapLayers; lyr++)

{

Map[lyr] = malloc(sizeof(int\*) \* MapWidth);

// Allocate memory for the maps Y elements

for(x = 0; x < MapWidth; x++)

{

Map[lyr][x] = malloc(sizeof(int) \* MapHeight);

}

}

}

And that's it, simple. No error checking has been included here but a cannot overemphasize enough how important this is.

Now we want to access the map pointer to initialize the values:-

// Initialize the elements of the map

for(lyr = 0; lyr < MapLayers; lyr++)

{

for(x = 0; x < MapWidth; x++)

{

for(y = 0; y < MapHeight; y++)

{

Map[lyr][x][y].TileID = NOTILE;

Map[lyr][x][y].Walkable = WALKABLE;

}

}

}

And that's it, a simple way to create a dynamic map array.

Please do not hesitate to contact me if you have any comments to make on this tutorial. In fact this is my first ever attempt at a tutorial so be easy :)

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