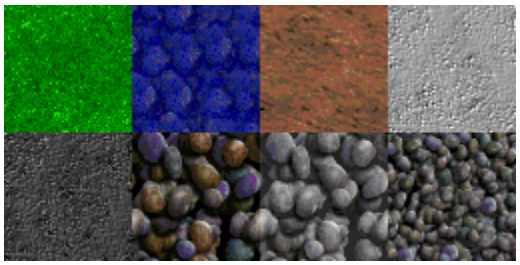
Tile Editor Project

Overview

The tile editor project will consist of a C# application that produces tile maps from tile set bitmaps and then saves the map information to a text file. It's basically a level editor for a simple 2-D scrolling game.

The Default Tile Set

For demonstrations I will be referring to the following default tile set. The size of an individual tile is 64 pixels by 64 pixels. The size of the tile set in tiles is 4 by 2.



Tile Editor Application

This program must be written in C# and will produce the tile map text file. Its exact layout is up to you but, however you arrange the windows; it must meet certain basic requirements.

Basic Requirements

1. This application must be written in C# to receive any points at all.
2. It must allow the user to select tiles from the tile set bitmap and place them into a map.
3. The user must be able to resize the map to any dimensions between 5 x 5 to 40 x 40 tiles.
4. The map must be entirely viewable to the user even if its size in pixels exceeds the size of the window that contains it. This should be accomplished with scroll bars.
5. The tile set bitmap should also be entirely viewable using scroll bars.
6. The user must be able to import any tile set bitmap requested. Not just the ones used for developing the application.
7. It must be able to deal with tile set bitmaps of any width and height and any one of the following tile sizes: 16 x 16, 32 x 32 and 64 x 64 pixels.
8. The user must be able to save a text file that contains information about the size of the map, the size of a single tile and the size of the tile set. This file should not contain any information about the specific tile set used to produce it.
9. The user must be able to open the text file described above and view it with any tile set that matches its specifications.

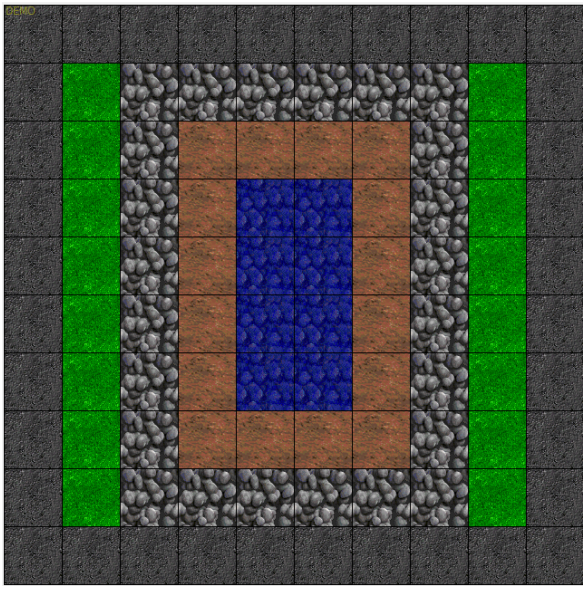
The Map File

The format of this file is up to you but it does have to be a text file. It should contain information about the width and height of a single tile, the size in tiles of the bitmap used to create it and the width and height of the map. It might resemble the following.

```
// The first line contains the width and height of a tile in
// pixels (64, 64). The size in tiles of the default tile set
//(4,2). The size of the map in tiles (10, 10).
// The remaining lines layout which tile is displayed in which
// row and column of the map

64,64,4,2,10,10
4,4,4,4,4,4,4,4,4,4
4,0,6,6,6,6,6,6,0,4
4,0,6,2,2,2,2,6,0,4
4,0,6,2,1,1,2,6,0,4
4,0,6,2,1,1,2,6,0,4
4,0,6,2,1,1,2,6,0,4
4,0,6,2,1,1,2,6,0,4
4,0,6,2,2,2,2,6,0,4
4,0,6,6,6,6,6,6,0,4
4,4,4,4,4,4,4,4,4,4
```

This file should produce a map that looks like this when rendered with the default tile set.



Grading Criteria

On the day that I grade you project we will follow these steps. The program will be in executable form (No running under Visual Studio!). You will not be allowed to recompile you application as the grading proceeds. The basic requirements are as follows.

1. **Importing Tile Sets** - I will present you with a tile set bitmap that you have not seen and whose dimensions you will not be informed of ahead of time. Your tile editor must import the tile set and then adjust for its width and height in tiles as well as the size of an individual tile. Individual tile sizes will be limited to 16 x 16, 32 x 32, or 64 x 64. Your application must then be able to construct a map using the given tile set.
2. **Scrolling the Tile Set** - I will ask you make the tile set window smaller than the tile set bitmap and it should scroll correctly and handle mouse input correctly when scrolled.
3. **Resizing the Map** - I will ask you to create a map of a given size that you will not be informed of ahead of time. The map size can be anything between 5 x 5 and 40 x 40 tiles.
4. **Scrolling the Map** - I will ask you to make the map window smaller than the size of the map in pixels and scroll bars should allow you to scroll around the entire map. Once scrolled mouse clicks should place the currently selected tile in the correct location of the map.
5. **Saving the Map** - We will then save the map to a text file and open it in Notepad or Wordpad to confirm that it is text and contains the correct information about the map.
6. **Opening a Saved Map** - You will then be asked to close the Tile Editor application, start it back up, import a second tile set that matches the dimensions of the first one and then open the map file we just created. We should then be able to see the same map with a different tile set.