# Game dev: Map metadata

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Map metadata

- Every Tiled map may contain several layers of information

- Every layer can be graphic information or metadata

  - Audio: which audio environment to play

  - Spawn points for enemies / player

  - Doors / Item / Traps / Secrets placement

 - Invisible colliders to detect the player finished the level

  - Etc..

What is a navigation mesh ?

- It is a **logic** layer with a simplification of the map.

- It contains data per tile about navigation:

  - Is it blocked ?

  - Is it slow ?

  - Is it next to a cliff ?

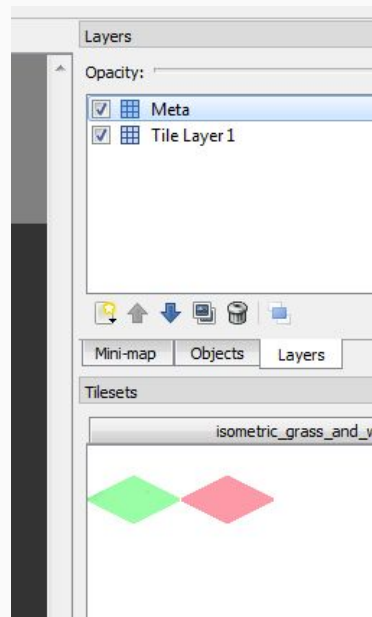 - *<insert anything that you need for your game>*
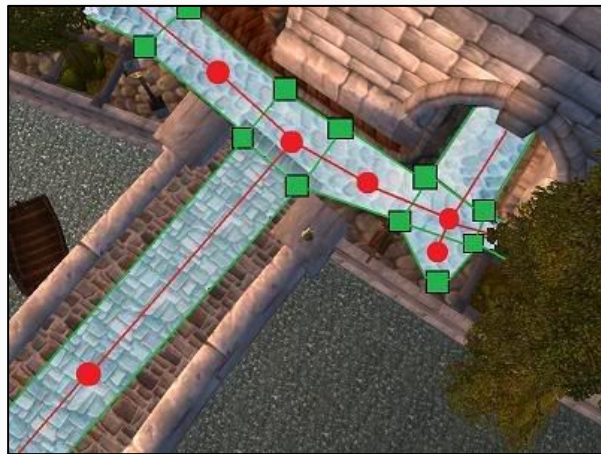
Plan of attack!

- Create a new layer in Tiled for navigation data.
- Read it in the code to create the navigation mesh.
- For now, we will only have blocked (red) or not blocked (nothing).
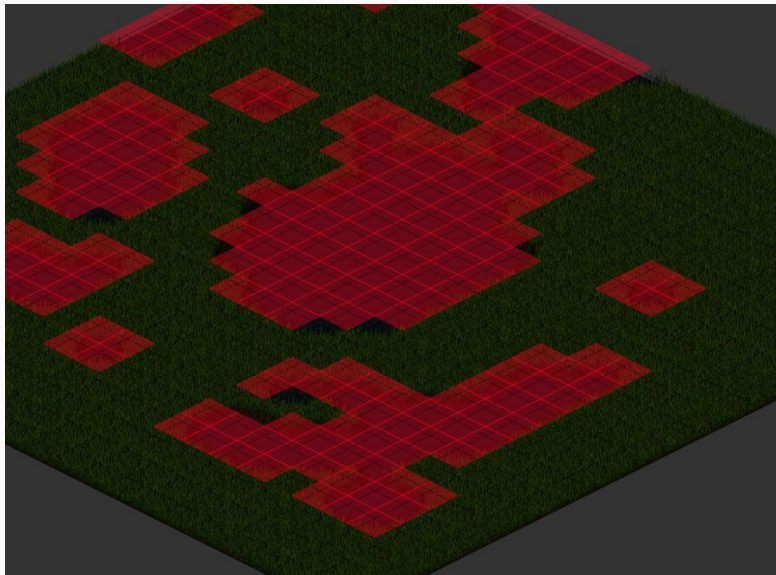
TODO 1

- Open Tiled :)
- Create a new *Tiled Layer*.
- Create a new tileset with *maps/meta.png* (64x64)
- Use the red to paint tiles with water.

TODO 2

- Create a custom property, so you know this layer is for navigation data.
- And another one to know that this layer should not be drawn
- Save it as a new TMX and find where *Custom Properties* are.

Atributo	Valor
Tile Layer	
Name	Navigation
Visible	☑
Opacity	1,00
Horizontal Offset	0,00
Vertical Offset	0,00
Custom Properties	
Draw	1
Navigation	1

Properties

TODO 3

firstguid=1

1	2
3	4

firstguid=5

|	
5	6
7	8

- Notice that we are using more than one tileset
- Our code reads them but we cannot draw them!
- The attribute **firstgid** sets the first tile id that this tileset contains
- Knowing this, fill the method that returns the proper tileset attached to any tile id.

```
<tileset firstgid="25" name="meta" tilewidth="64" ti
 <image source="meta.png" width="128" height="64"/>
</tileset>
```

TODO 3 : we can only draw one layer

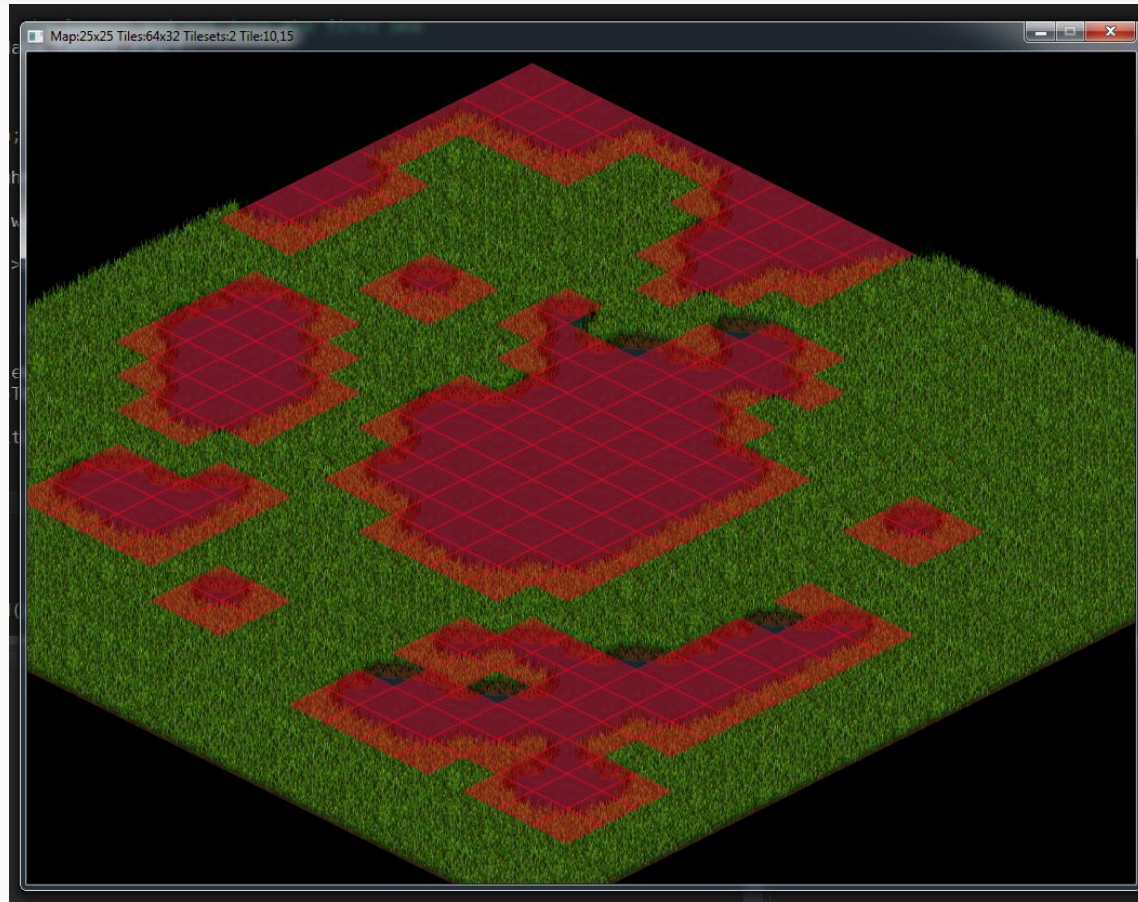Map:25x25 Tiles:64x32 Tilesets:2 Tile:5,13
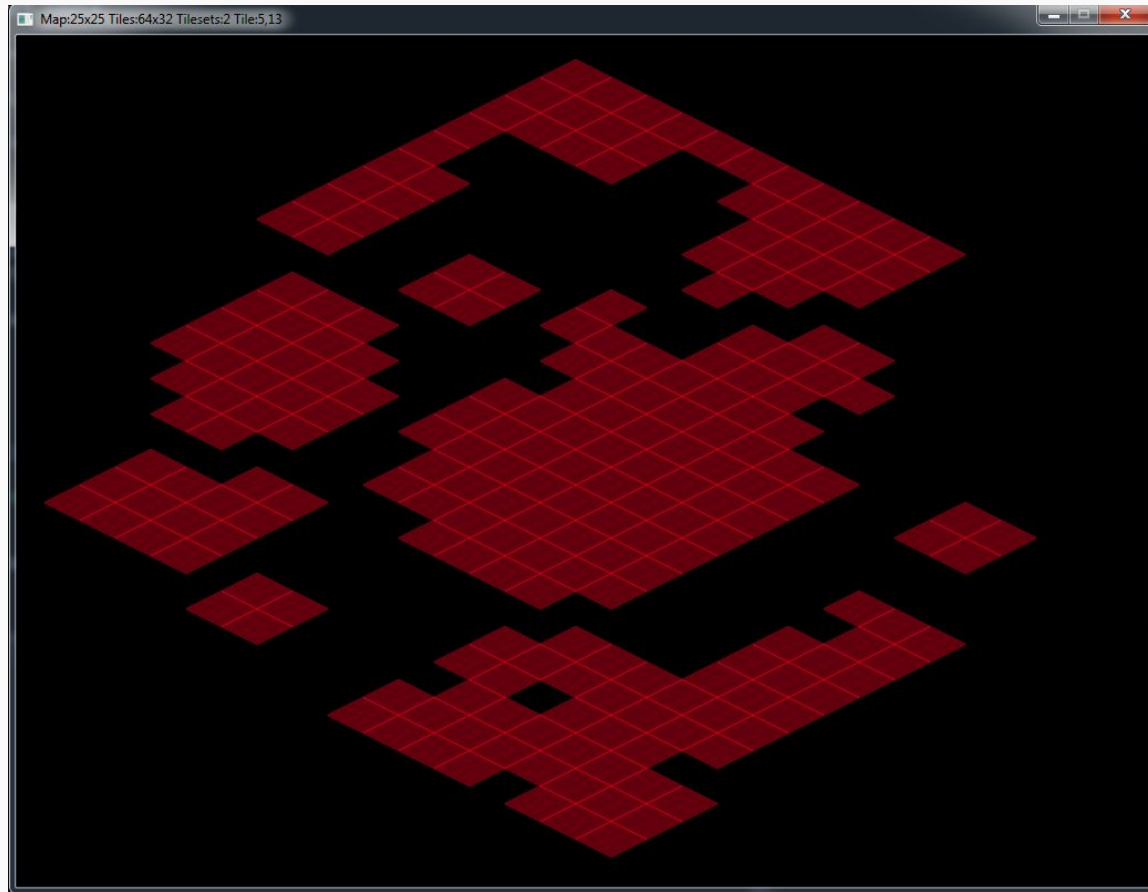
TODO 4

- Adapt the draw function to be able to draw all the layers.

- Just iterate all layers and draw

- You should see the isometric map, the navigation layer is below!

- Switch the layer order in Tiled
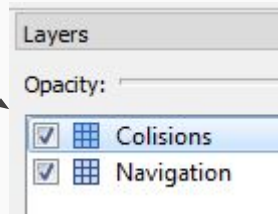
TODO 4 : all layers drawn using multiple tilesets

TODO 5

- In Tiled, many things might have custom properties:
  - Map
  - Each tile of a tileset
  - Layers
  - Terrains
- Create a *generic* structure in *j1Map.h* to hold custom properties

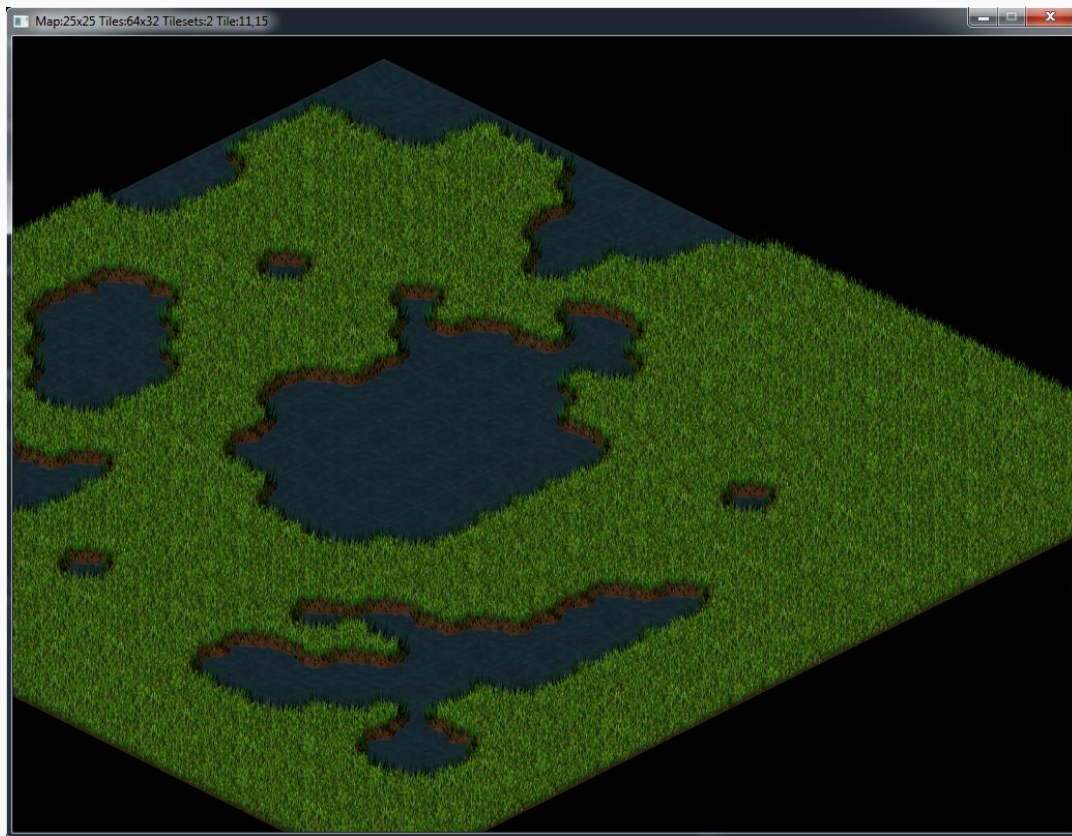| Properties	
Atributo	**Valor**
◢ Map	
Orientation	Isométrico
Width	25
Height	25
Tile Width	64
Tile Height	32
Tile Side Length (Hex)	0
Stagger Axis	Y
Stagger Index	Impar
Tile Layer Format	XML
Tile Render Order	Derecha Abajo
▷ Background Color	[128, 128, 128] (255)
◢ Custom Properties	

TODO 6

- Fill the method to load custom properties

- Should receive a xml node

- Would it be better to be a method in the Custom Property class/struct ?

- Add the calls to this method so we load custom properties for each layer

TODO 7

- Add a method to custom properties struct.

- It should be to request any value.

- It must accept a default value in case it is not found (in the lines of pugui xml).

- Now use it to ask each layer if your "Draw" property is true.

- Test if it works changing the values in Tiled and checking the result.

TODO 7: Not spectacular, but now we have metadata loaded!

Homework

- ● Enable the code to read custom properties from the Map