Map Making Tutorial

Pre-requirements

- Install Tiled: https://www.mapeditor.org/
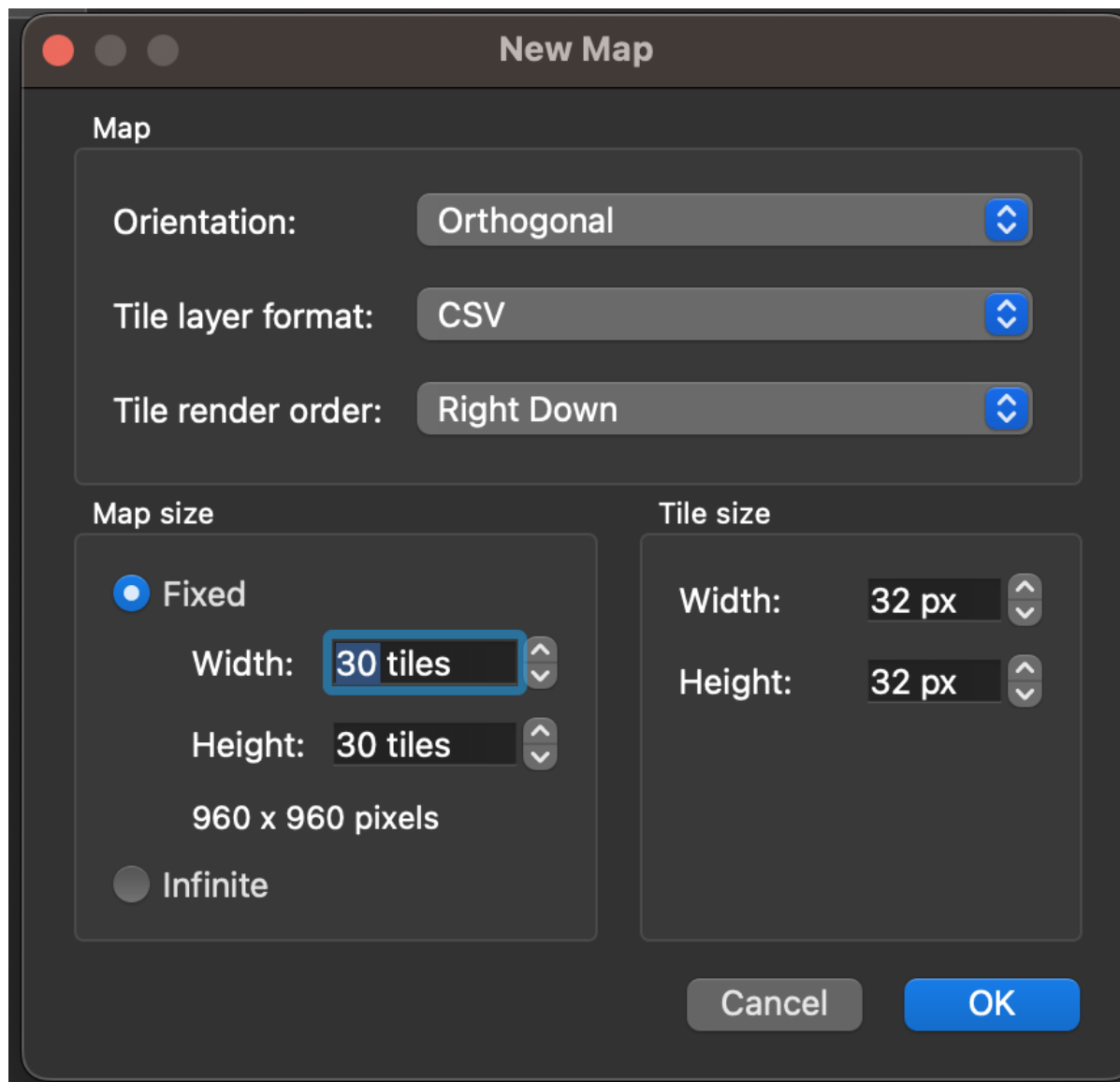
- Download tilesheet: (also found in repo: `src/main/resources/images/tilesheet` `)
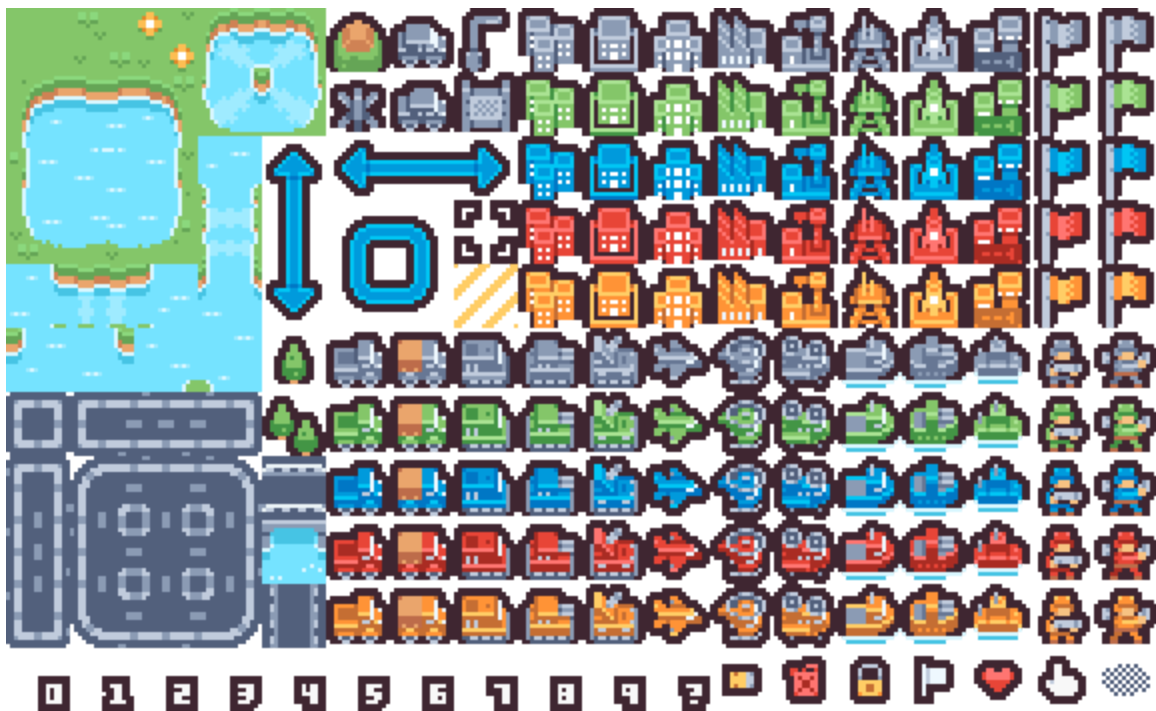
- Recommend opening the level-1 map in Tiled to get an idea of how to structure map: `/src/main/resources/images/maps/level-1.tmj`
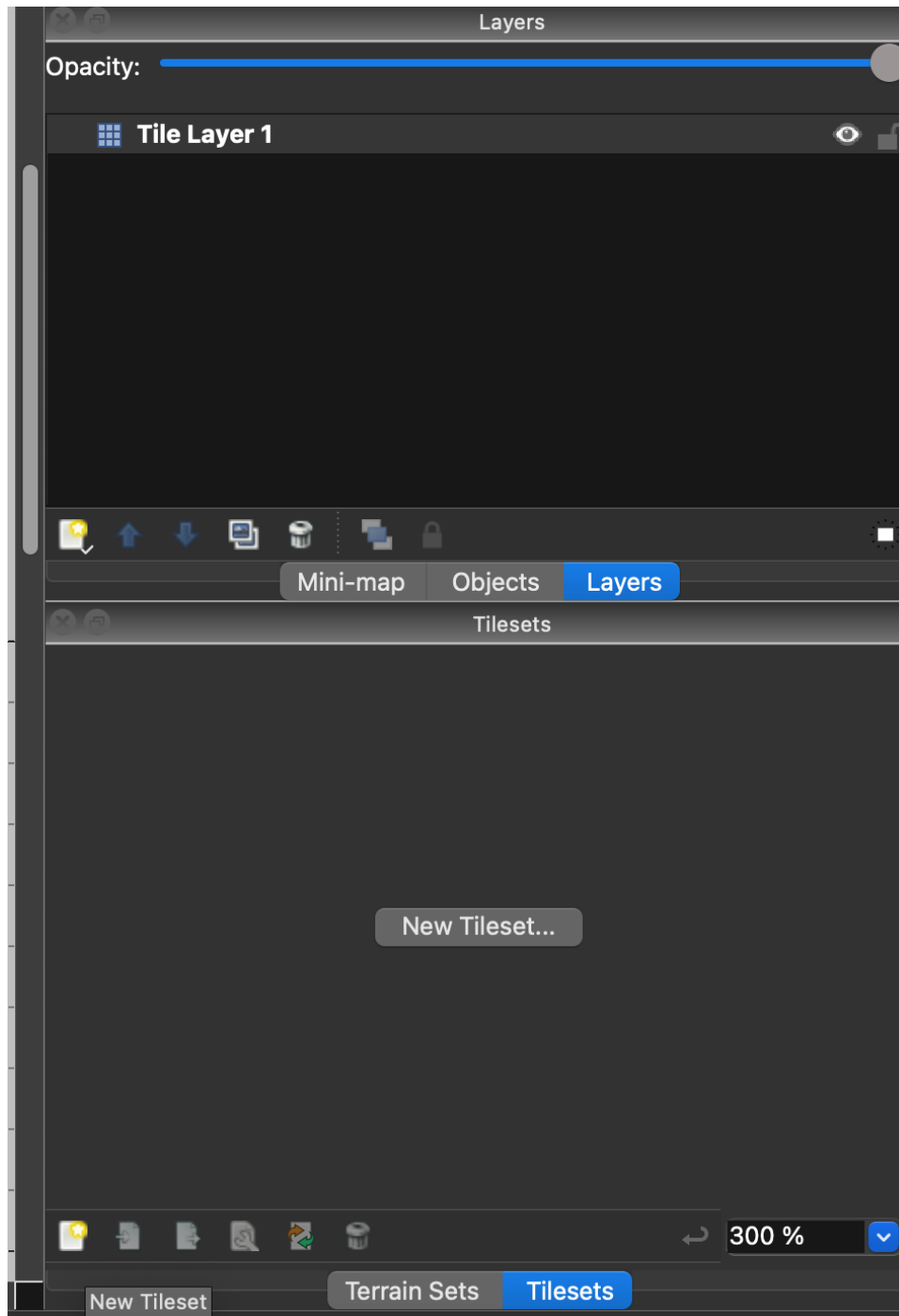
Create a new map

1. Open tiled and select `New Map...`

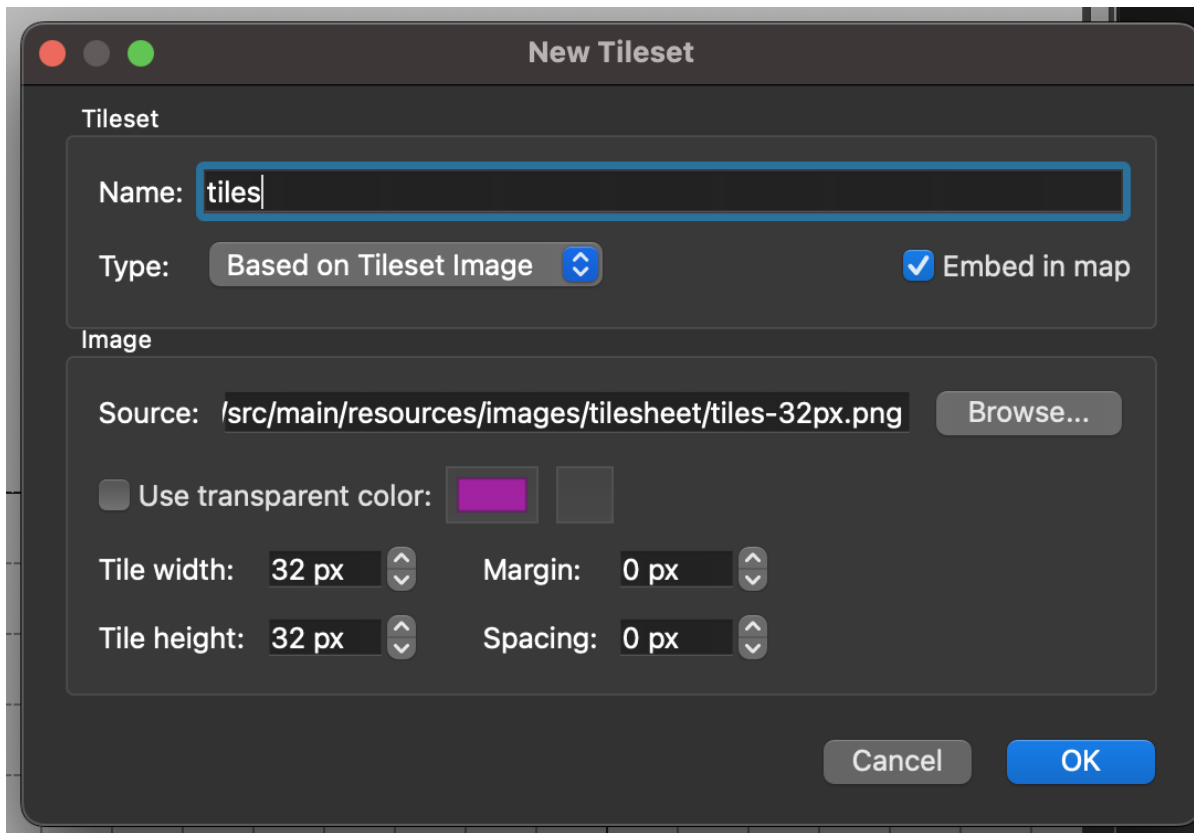2. On the configuration modal, set the width/height to 30 tiles and tilesize to 32px
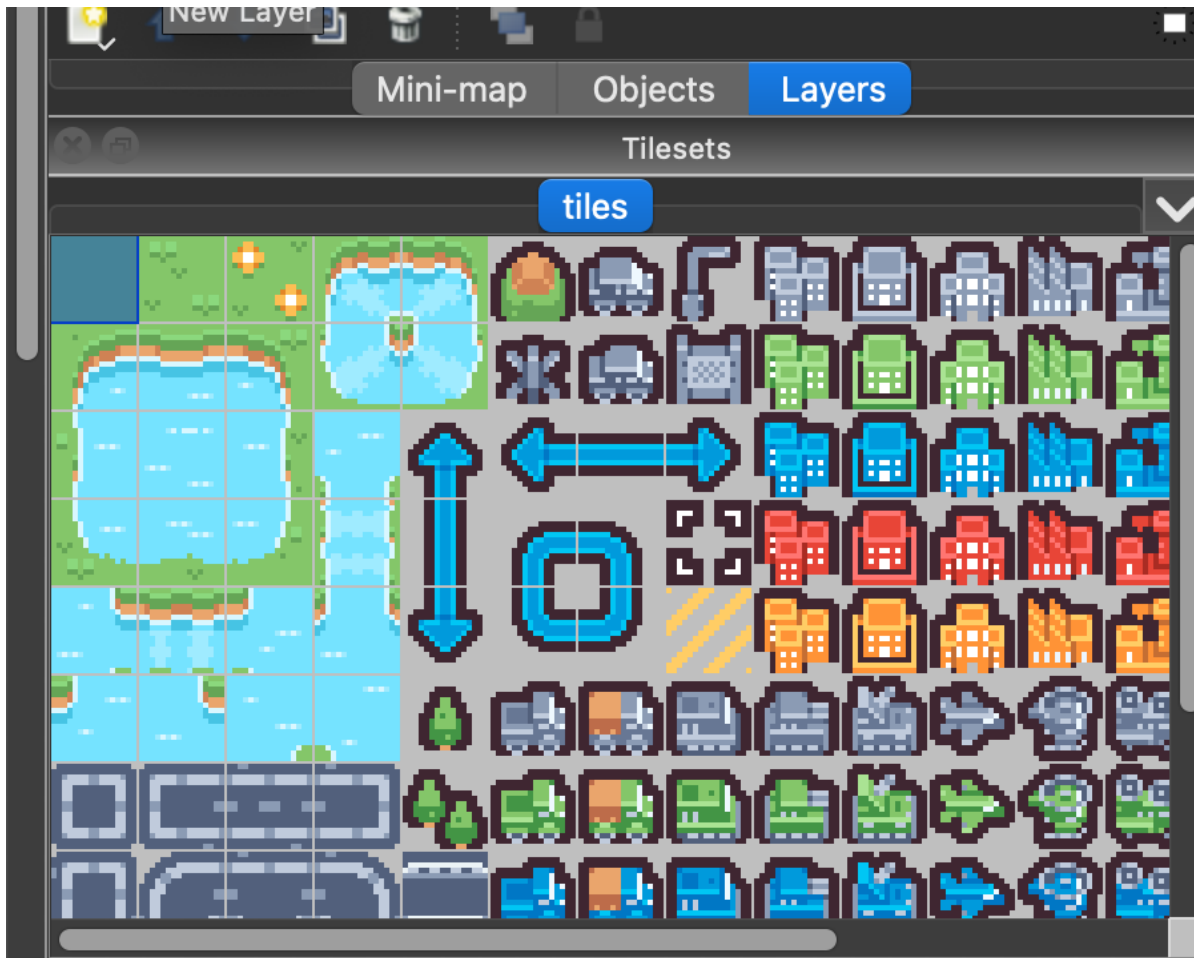
Import tilesheet

1. In the right-hand panel, click "New Tileset..."

2. In configuration modal, set a name for tileset (whatever you want), select "Based on tileset image", select Embed in map, browse and select the tilesheet (`src/main/resources/images/tilesheet/tiles-32px.png`). Set tile width and height to 32px, margin and spacing to 0px

New Tileset

Tileset

Name: tiles

Type: Based on Tileset Image   ☑ Embed in map

Image

Source: /src/main/resources/images/tilesheet/tiles-32px.png   Browse...

☐ Use transparent color: 🟪

Tile width: 32 px   Margin: 0 px

Tile height: 32 px   Spacing: 0 px

Cancel   OK

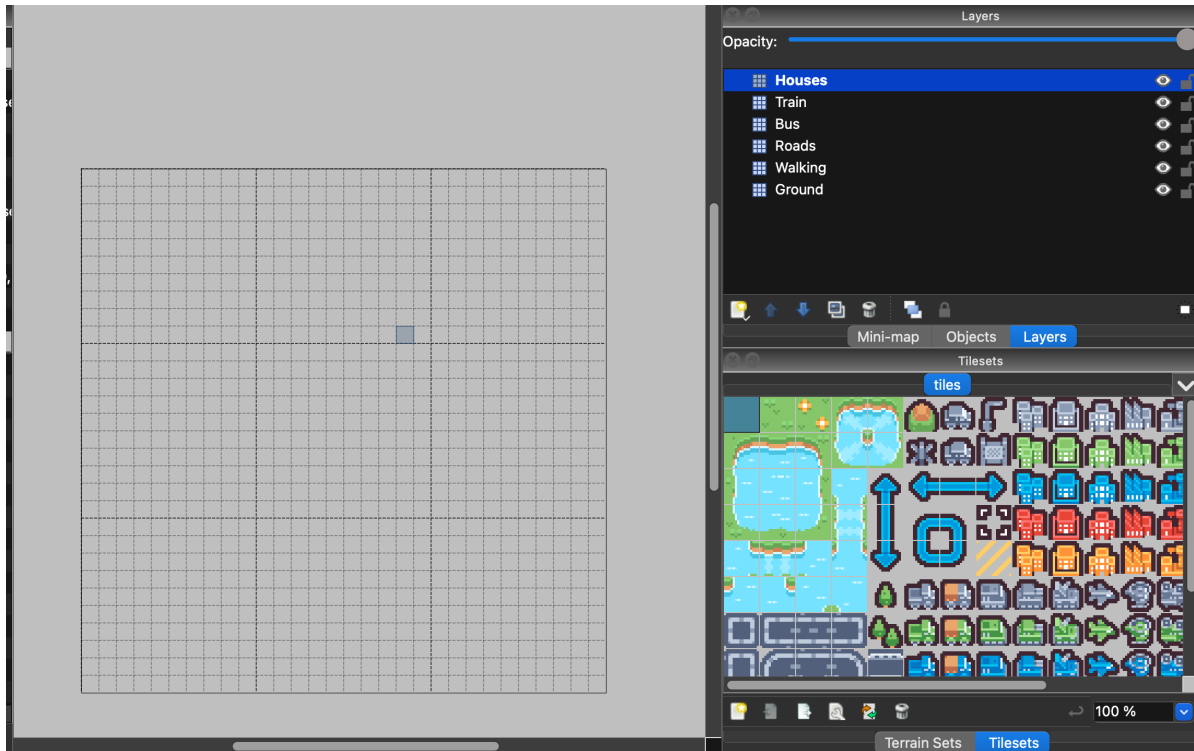3. You should now see all of the tiles populated into this panel!

Create layers

> 💡 It is very important to follow these instructions *exactly* for this map to work!

1. In the right hand panel, right-click and select New → Tile Layer. Create 6 layers called: Ground, Walking, Roads, Bus, Train, Houses in the same order as below with the exact same names!

2. If you want to create any other layers for whatever reason, you can place them anywhere below the Walking layer.

Draw!

To draw, select a tile from the right panel and click on the map grid where you want to place it. The most common tools you'll probably use are the stamp (place one tile at a time), paint bucket (fill entire area), select (fill a selection of squares) and eraser.
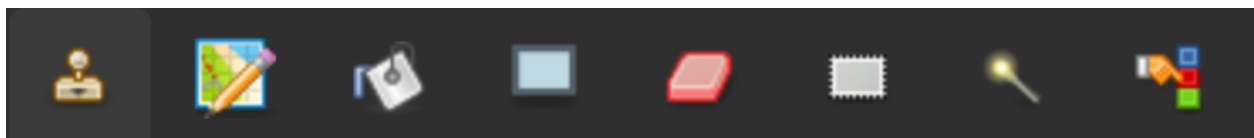
When drawing, you should *only* draw things in there designated layers - houses in Houses layers, Roads in roads layer, etc.

Rules for each layer

1. Ground layer

- Free for all - you can put whatever you want in this layer, it will have 0 effect on functionality. Same goes for any other layer below Walking.

2. Walking layer

   - Only *one* type of tile should be used - the grass tile - to define where the player can walk (we may decide to use a better tile later, or we can create more - just need to let us know the ID of the new tile so we can update the code).

   - Remember - the player should *not* be able to walk where trees or houses are, so keep an eye on that

   - The player can and *should* walk on roads, you need to make sure to trace the road tiles with grassy tiles (visually will make no difference). *However*, if we have time or decide to create a sidewalk tile, this may change!

3. Roads layer

   - Defines where vehicles can drive (including cars *and* buses). Any of the road tiles can be used.
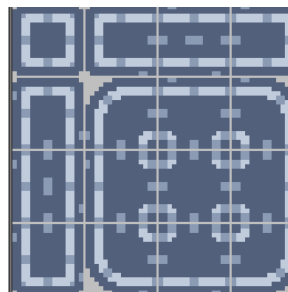
4. Bus layer

   - Defines where the bus drives and its stops.

   - To define bus route, trace on top of the roads in the existing Roads layer (visibly makes no difference but code-wise it matters!).

- To define bus stops, use one of the numbers from 1 - 9 and place them *on* the road

  NOTE: do you have a better idea for indicating bus stops?? let us know!!

5. Train layer

   - Defines where the train goes and its stops.

   - To define train route, use the blue lines (exclusive of the arrowheads, but if you need them we can add them)

   - To define stops, use the 1-9 icons. Stops must be directly to the left or right of the train route and on a road.

6. Houses layer

   - Defines where houses/mailboxes are. Any of these icons can be used:
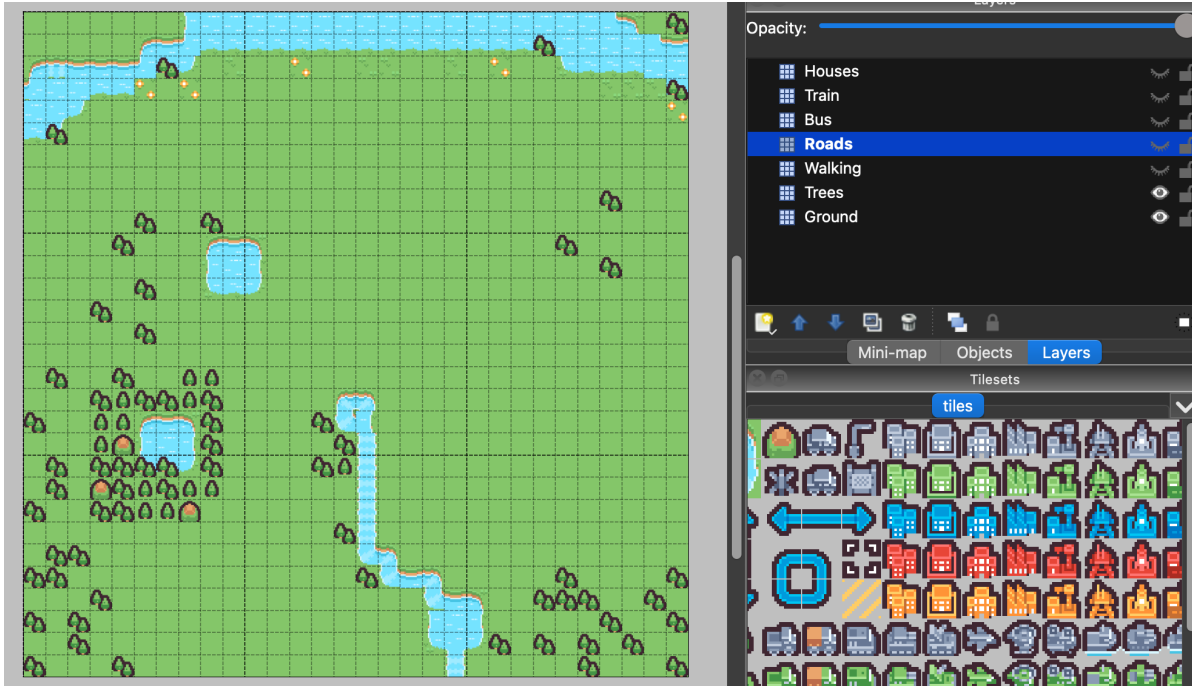
- Houses should *not* be on top of walking paths, roads or train routes.

- Houses *must* have one empty space to the right (because this is where the mailboxes get rendered).
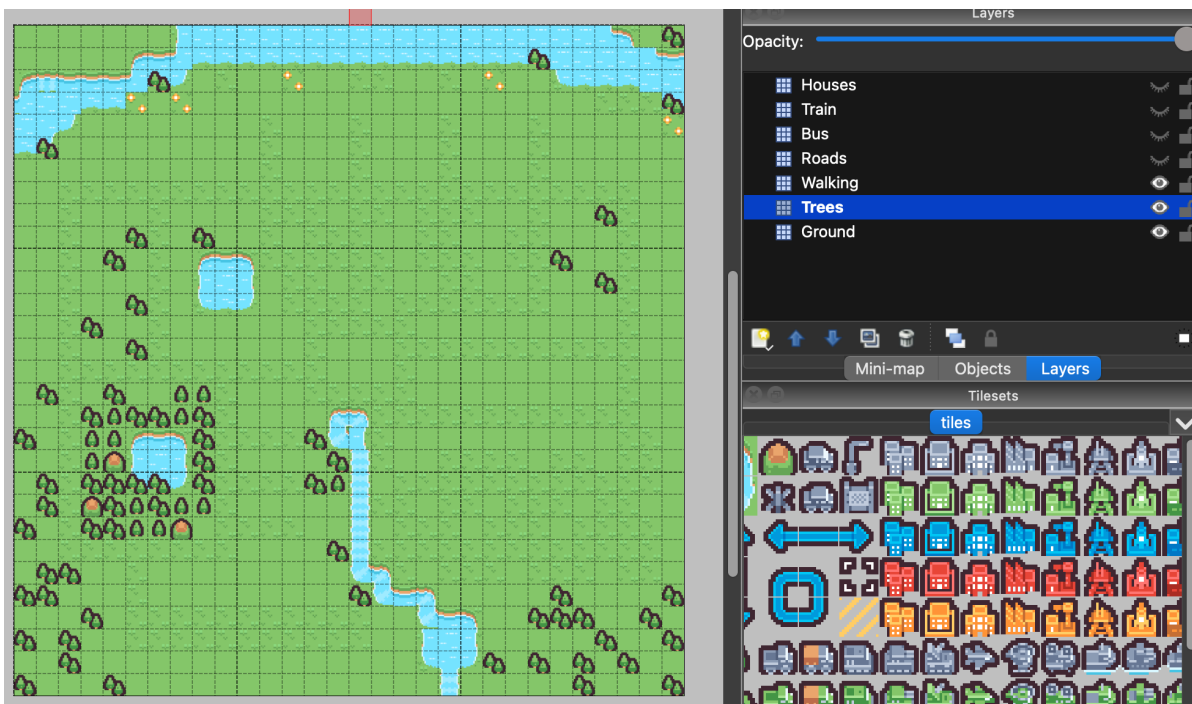
Using new tiles

You are more than welcome to use new tiles - just make sure to consult first because it required code changes.

Example layering (from level-1.tmj)

Ground & Trees layers
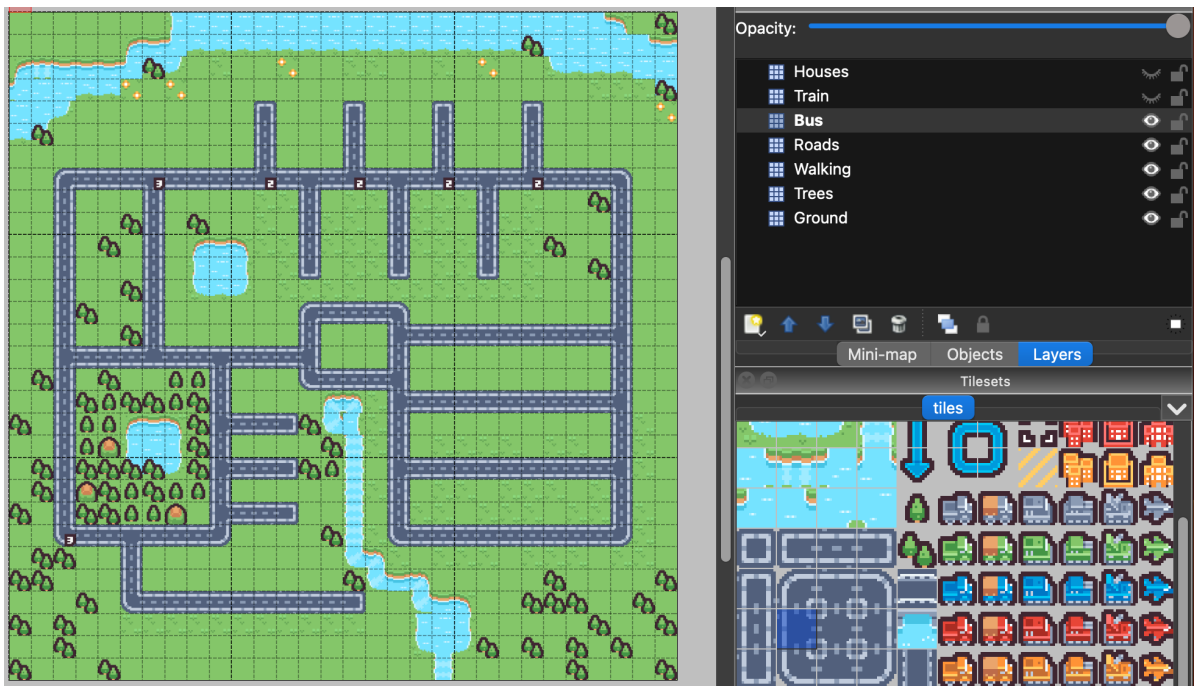
Walking layer (notice the grassy patches)

Roads layer - notice that most grassy patches are under the roads, but there are a few locations that are more "walkable"

Buses layer - when the roads layer is turned on, all you will see is the numbers of the stops. However, if you turn off the roads layer you can clearly see the bus route

With roads:

Without roads:

Train layer

Houses layer

Export

When you are satisfied with your map, click `File` → `Save As…` and save it into `src/main/resources/images/maps` . It will save as a .tmj file. Make a duplicate of the file with the same name and extension of `.json` . And that's all!