08/12/21

Implemented basic canvas with panning and zooming (this took me a very long time)

16/12/21

Implemented basic Voronoi grid, each cell will be used as an ingame location. Current cells look uneven because of the distribution of random points. Setting cell centers to the average of the cell's corners would even the cells out (Lloyd relaxation)

Basic debug information has been inplemented (highlight cell centers on click)

17/12/21

Implemented Lloyd relaxation, mass reading of others implementations. Also did some reading on graph theory (as internally I should build a graph structure for my cells)

18/12/21

Logic for assigning neigbours to cells, also enabled a cell to store its own corners

19/12/21

Refactoring map generation code flow

20/12/21

Logic for which corners are connected to others, also added corner rendering to display highlighted cell's corners

Basic thoughts for temperature (generate a random straight line for equator)

Also general refactoring

21/12/21

Added height assignment and made maps look more islandy

27/12/21

Keyboard controls for map panning and zooming

29/12/21

Logic for inland water and ocean cell determination (and associated colours so they can be rendered)

02/01/22

Added mountain generation

12/01/2022

Mountains have been removed because I cannot render them nicely in 2D. Thoughts on biome determination - need temperature and moistness. Temp can be done by generating an equator and propagating temperature from there

[[Pasted image 20220112143737.png]] ### 14/01/22

Added cell equator distance to determine temperature, also added debug visualisation for this

17/01/22

Implemented debug panel as all debug information is being drawn by default

20/01/22

Fixed alignment issues with debug pane, need to add all other options to debug settings (so much refactoring needed - all debug drawing needs to be moved to the correct function)

drawFocused was split into 2 functions because it was handling edge rendering for the focused cell.

I need to implement moisture information (from noise) and then we can finally add biomes / polish everything and map gen is in a shippable state - so then gameplay work can start.

23/01/22

Temperature and moistness have been standardised to scale from 0->99 (so 100 possible values).

The best method I could come up with for biome assignment is a 100x100 grid, each cell is filled with a biome. Temp and moist values can be rounded and used as keys to this array

Moist	Temp	Biome
100	100	Tropical Rainforest
50	100	Tropical seasonal forest / savannah
0	100	Subtropical Desert
100	50	Temperate Rainforest
75	50	Temperate Seasonal Forest
50	50	Woodland / Shrubland
25	50	Temperate Grassland / Cold desert

Moist	Temp	Biome
25	25	Boreal Forest
0	0	Tundra

Main TODOs at this point: - Decide number of biomes - Pick some better colours

We could also transition the biome colours based on the decimal after the temp/moisture value. Maybe not? Next cell could be the same biome. If we had a measure of how far the cell is away from different biomes we could do a gradient like thie equator distance.

Biome types depedant on what type of bees exist (not sure)

We could do a post-processing step where we check neighbours and change colour depending on what biome is there? But angry processing time.

25/01/22

Going to decide which biomes we need today, so I am going to look at some bee species and see if we can get one bee per biome.

Tundra - [[Bombus Polaris (Artic Bees)]] General / Grassland - [[Bombus Hypnorum (Tree Bumblebee)]]

Also updated height assignment function and added debug settings to draw height map.