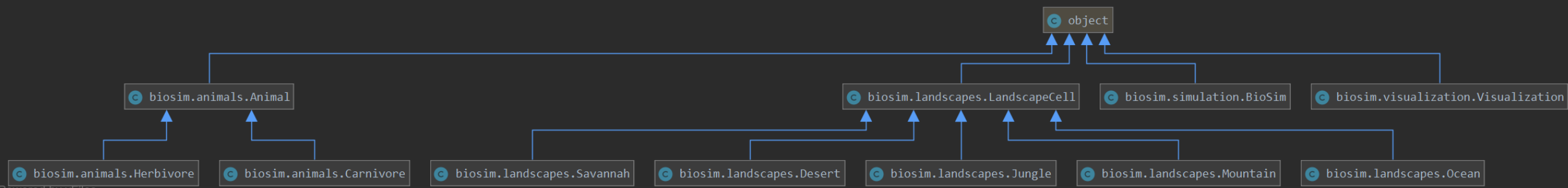


# Modellering av økosystemet Rossumøya

Av Nina Mariann Vesseltun og Trude Haug Almestrand

# Klassesammensetning



# Animal:

**c** biosim.animals.Animal

- m** \_\_init\_\_(self, attribute\_dict)
- m** set\_params(cls, new\_params=None)
- p** phi(self)
- m** aging(self)
- m** weightloss(self)
- m** dies(self)
- m** movable(self)
- m** get\_rel\_abundance(self, cell)
- m** get\_propensity(self, cell)
- m** migrate(self, current\_cell, neighbours)
- m** choose\_new\_cell(self, neighbours)
- m** move(self, old\_cell, new\_cell)
- m** fertile(self, n)
- m** procreate(self, cell)

**f** phi

**f** lambdah

**f** weight

**f** params\_set

**f** age

**c** biosim.animals.Herbivore

- m** \_\_init\_\_(self, attribute\_dict=None)
- m** feeding(self, cell)

**f** params\_set

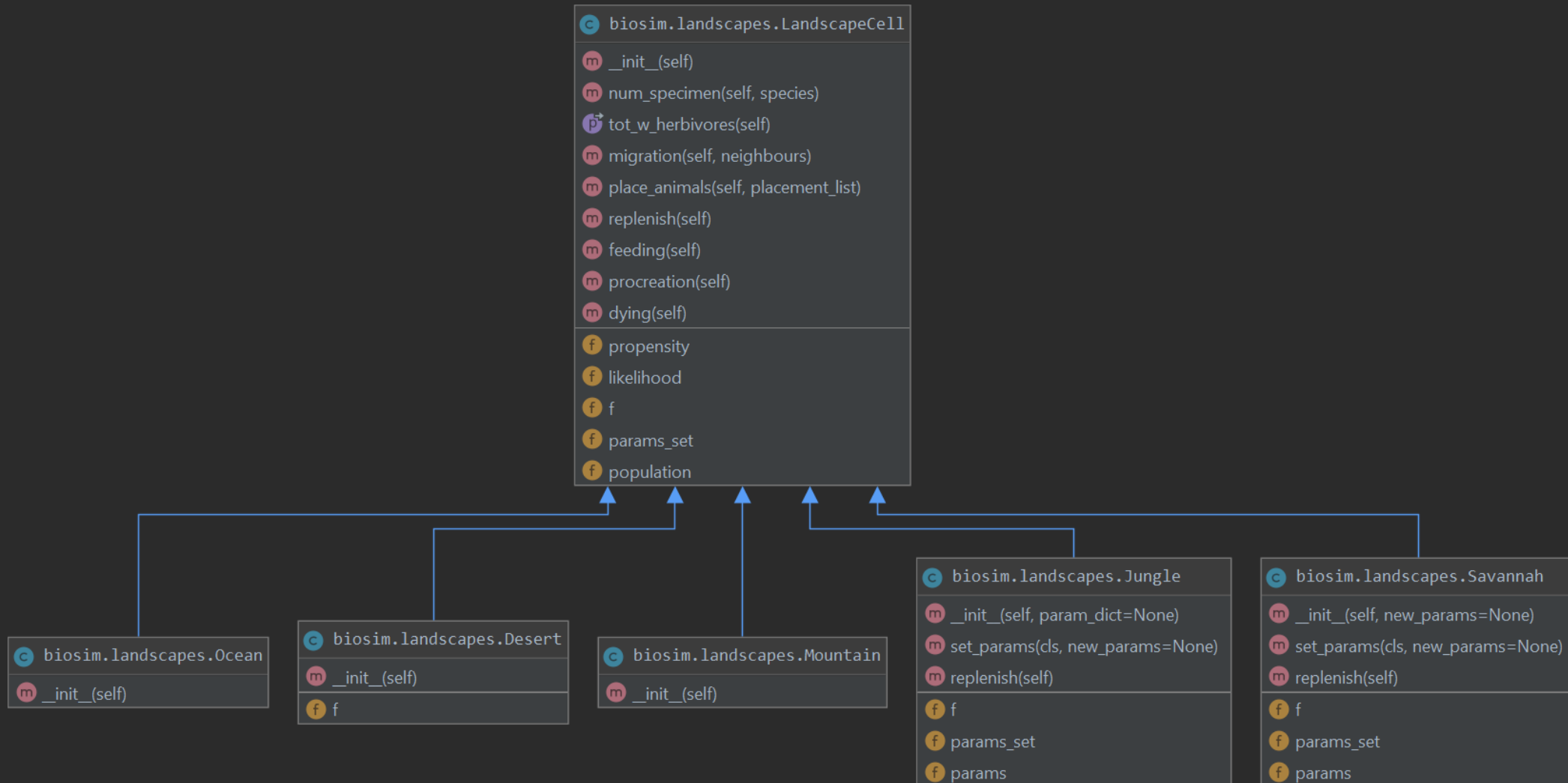
**f** params

**c** biosim.animals.Carnivore

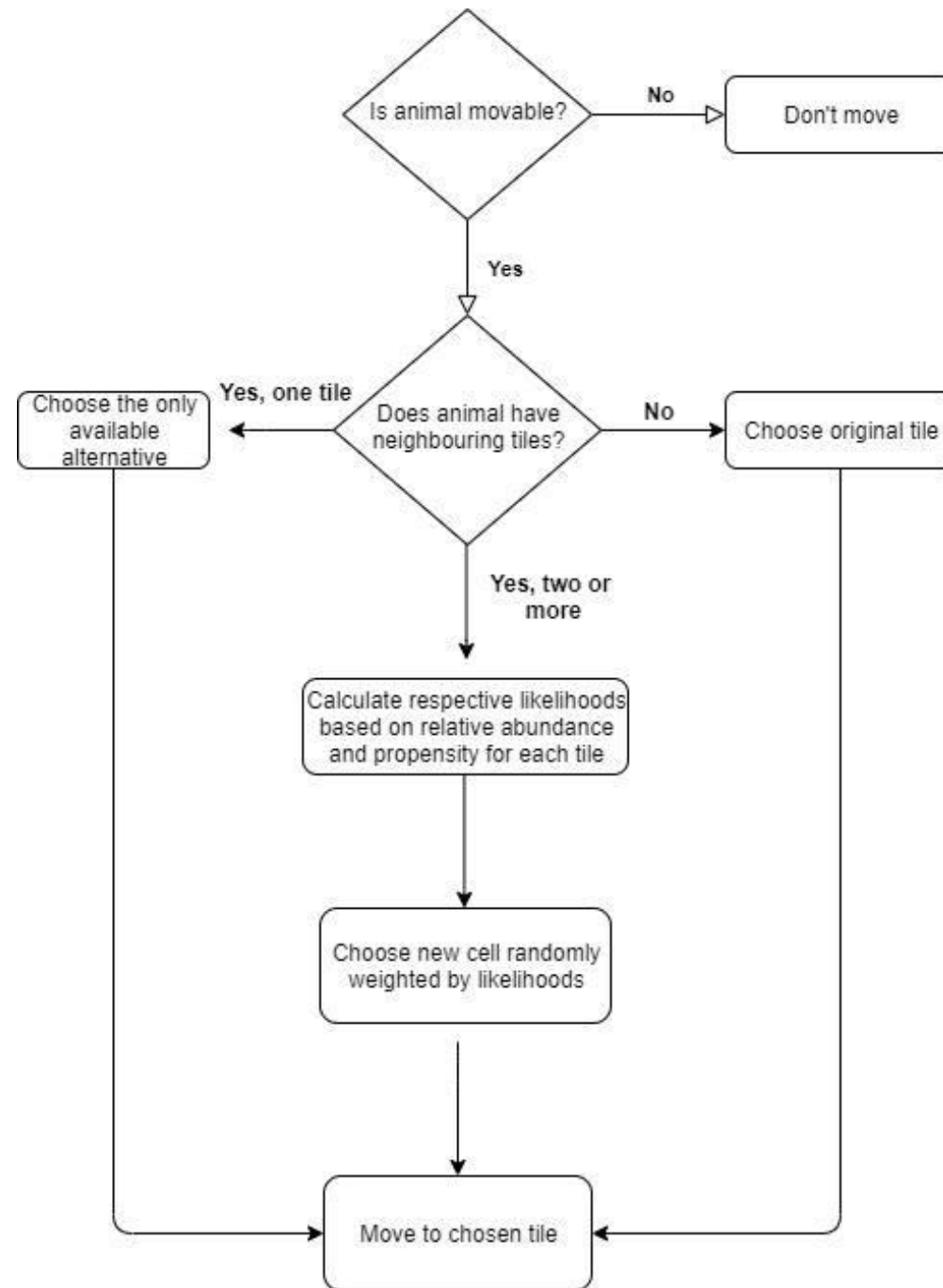
- m** \_\_init\_\_(self, attribute\_dict=None)
- m** check\_if\_kills(self, herbivore)
- m** feeding(self, cell)

**f** params












# Landscape:



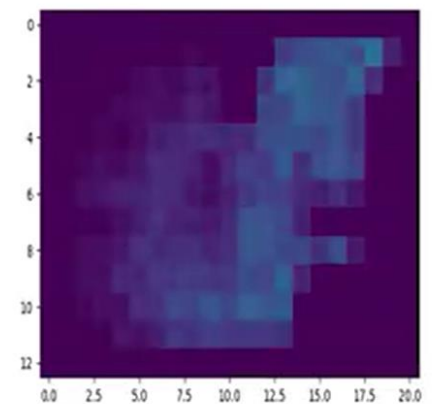
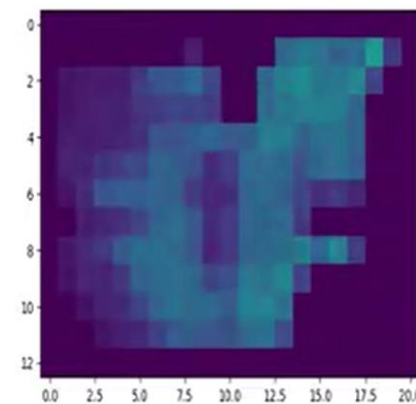
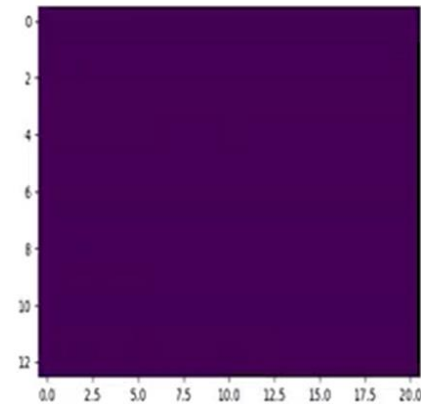
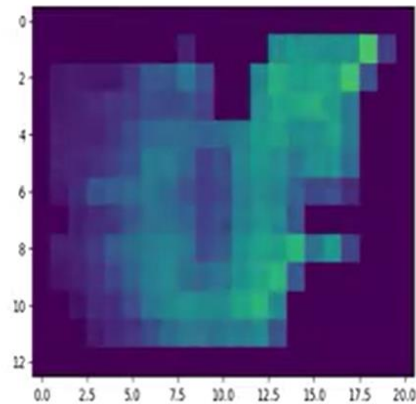
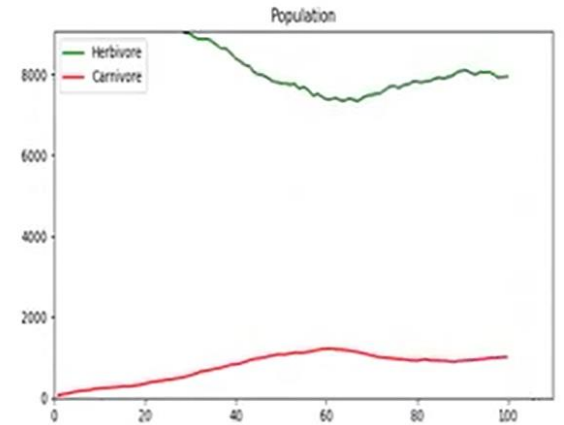
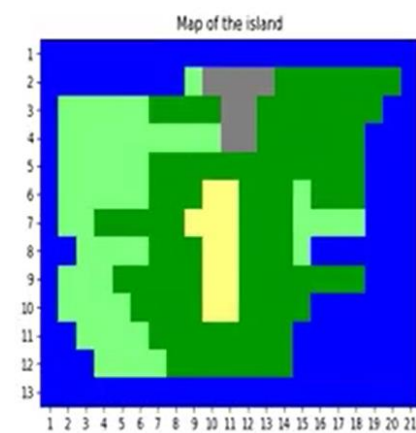
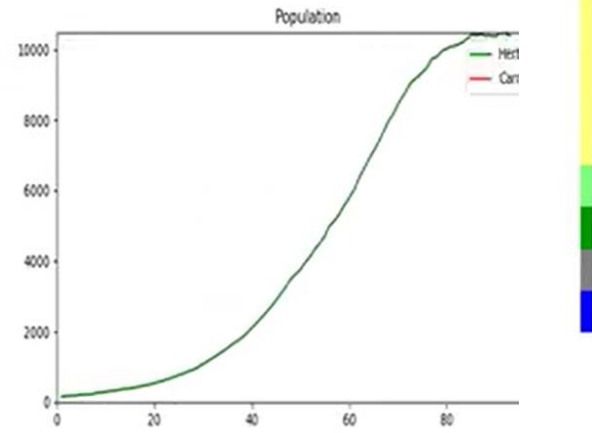
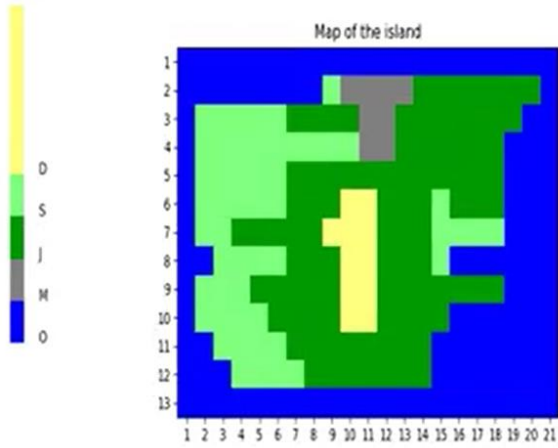
# Migration



# Testing

- ▼  src 71% files, 82% lines covered
  - ▼  biosim 71% files, 82% lines covered
    - >  .idea
    - >  doc 0% files, not covered
    -  \_\_init\_\_.py 100% lines covered
    -  animals.py 65% lines covered
    -  check\_sim.pdf
    -  landscapes.py 86% lines covered
    -  rosum.txt
    -  simulation.py 96% lines covered
    -  visualization.py 82% lines covered

# Visualisering



Herbivore density map

Carnivore density map

Herbivore density map

Carnivore density map

# Visualisering:

```
biosim.visualization.Visualization
m __init__(self, simulator, cmax_animals, ymax_animals, img_base=None, img_name=_DEFAULT_GRAPHICS_NAME, img_fmt='png', )
m make_rgb_map(self)
m population_line_plot(self, vis_years)
m update_population_line_plot(self)
m heatmap_herbivore(self)
m heatmap_carnivore(self)
m update_heatmap_herb(self)
m update_heatmap_carn(self)
m visualize(self, vis_steps)
m update_graphics(self)
m make_movie(self, movie_fmt=_DEFAULT_MOVIE_FORMAT)
m _save_graphics(self)
f heat_herb
f img
f img_base
f _fig
f cmax_animals
f _img_ctr
f line_carnivore
f heat_carn
f sim
f img_fmt
f _final_step
f ymax_animals
f ax2
f _step
f ax1
f ax4
f ax3
f line_herbivore
```



# Biosim:

```
biosim.simulation.BioSim
m __init__(self, island_map=None, ini_pop=None, seed=None, ymax_animals=None, cmax_animals=None, img_base=None, img_fmt=None)
m str_to_dict(self, txt)
m check_txt(self, txt)
m set_animal_parameters(self, species, params)
m set_landscape_parameters(self, landscape, params)
m add_population(self, population)
p year(self)
p year(self, n)
p num_animals(self)
p num_animals_per_species(self)
p animal_distribution(self)
m all_cells(self, myfunc)
m all_animals(self, myfunc)
m migration(self)
m one_year(self)
m simulate(self, num_years, vis_years=1, img_years=None)
f Vis
f year
f land_dict
f active
f island_map
f per_species_results
f _year
f cmax_animals
f num_years
f num_animals_results
f img_years
f map_full
f ymax_animals
f name
f sim_years
f map
f vis_years
f map_active
```