

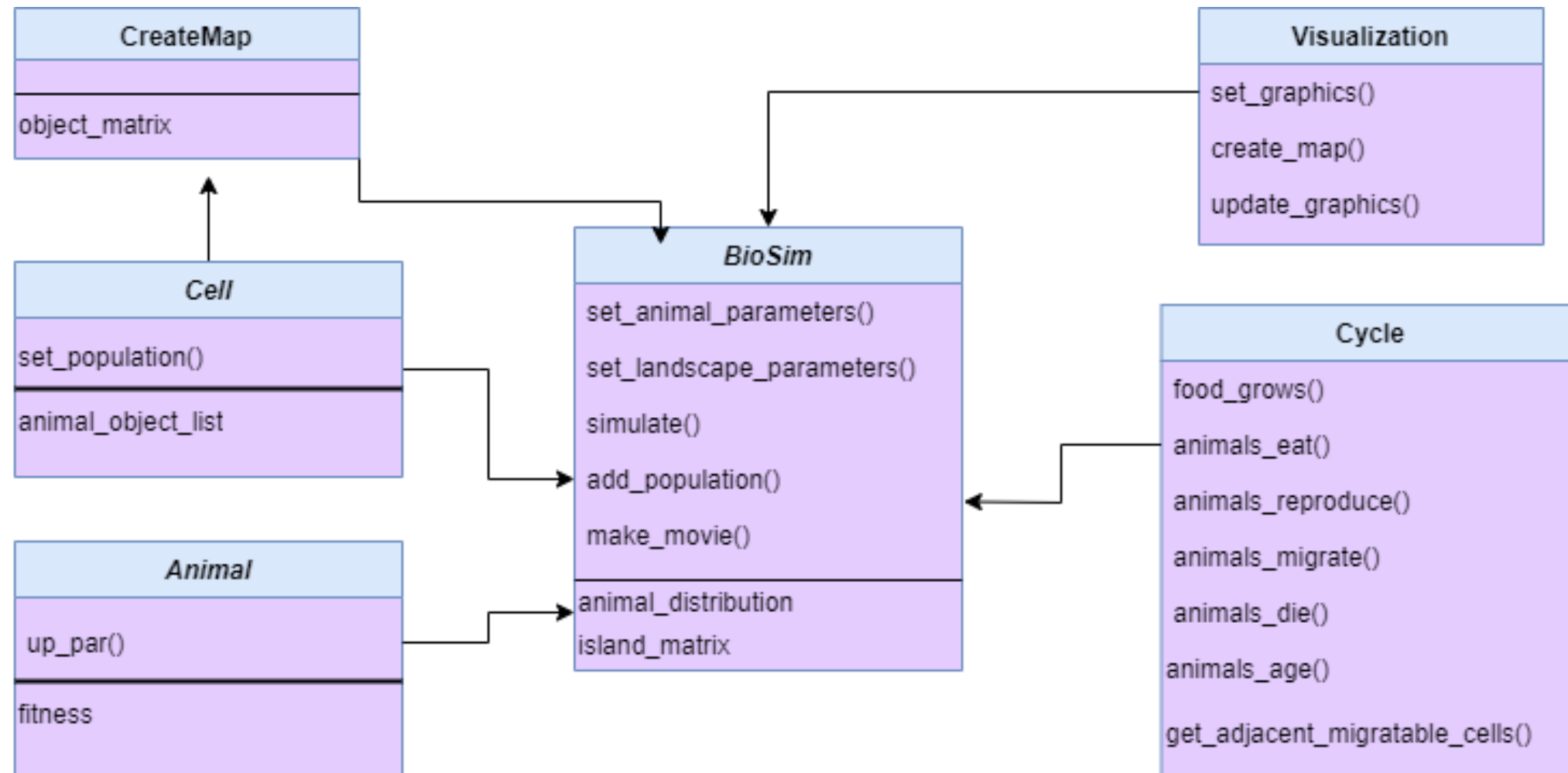
# Modelling the ecosystem of Rossumøya

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# Our approach

- CreateMap class to put animals in.
- Cell → Jungle, Savannah
- Herbivores, simple simulation.
- Added carnivores.
- Implemented the annual cycles (Cycle class)
- Biosim (put it all together)
- Visualization



# Simplifying the code

- Make it work → Make it pretty
- Entire implementations in single methods
- Cycle
  - Eating, procreating and migration
  - Improvement, «animal methods»
  - Migration, animal properties
- \* Inline comments



## TDD, Test coverage

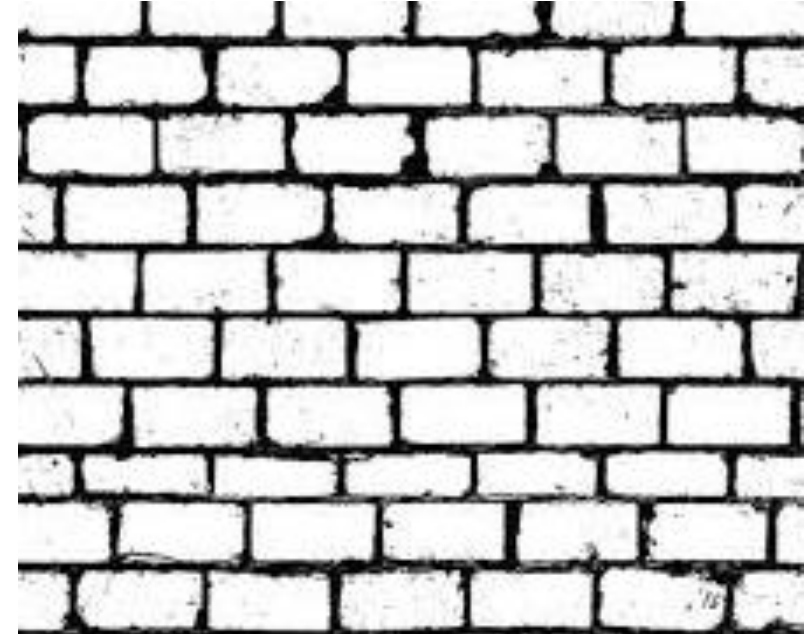
- One test file for each file, and each function tested.
- Tested while programming, made sure methods worked before moving on.
- High test coverage.
- Additional tests for visualization, simulation

```

animal.py 95% lines covered
cycle.py 93% lines covered
ffmpeg.exe
geography.py 97% lines covered
simulation.py 96% lines covered
terrain.py 95% lines covered
visualization.py 100% lines covered
  
```

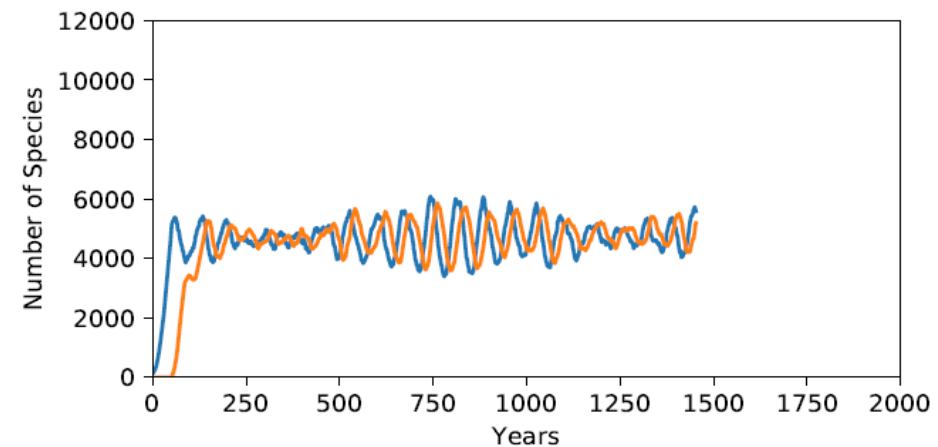
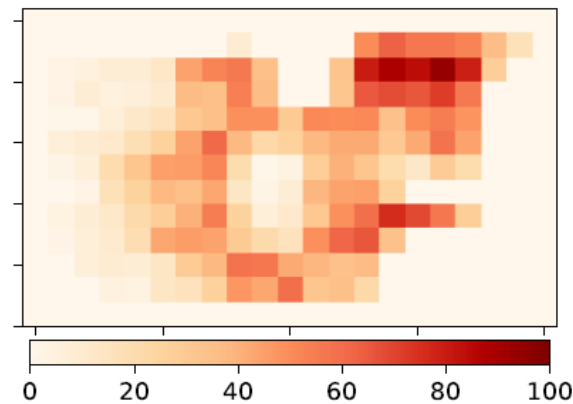
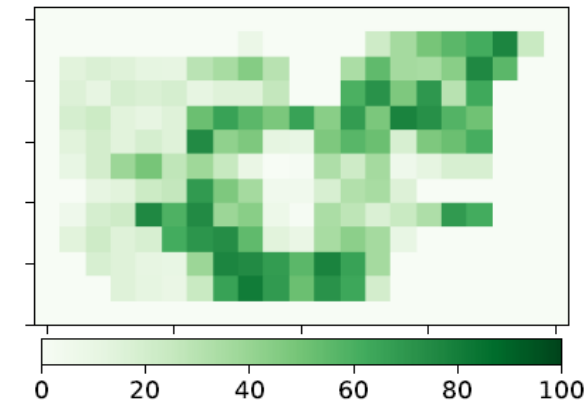
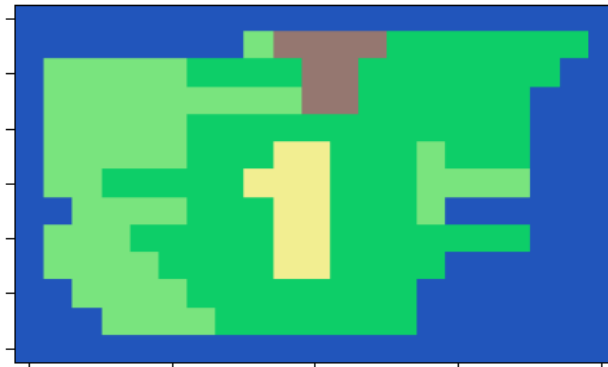
# Extras

- Script auto creates video, auto deletes previous pngs
- Main focus: all requirements
- Made sure to debug tests
- Double checked the logic
- Good and detailed documentation (inline comments, long code)



# Visualization- Maps and Line graph

Maximum number of years: 2000



# Improvements

- Made a separate list for Herbivore and Carnivore
- Use a numpy object array instead of lists
- Cached properties --> fitness



# Simulation of Ecosystem in Russmøya

