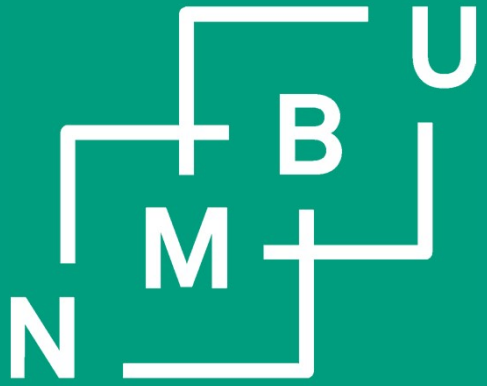
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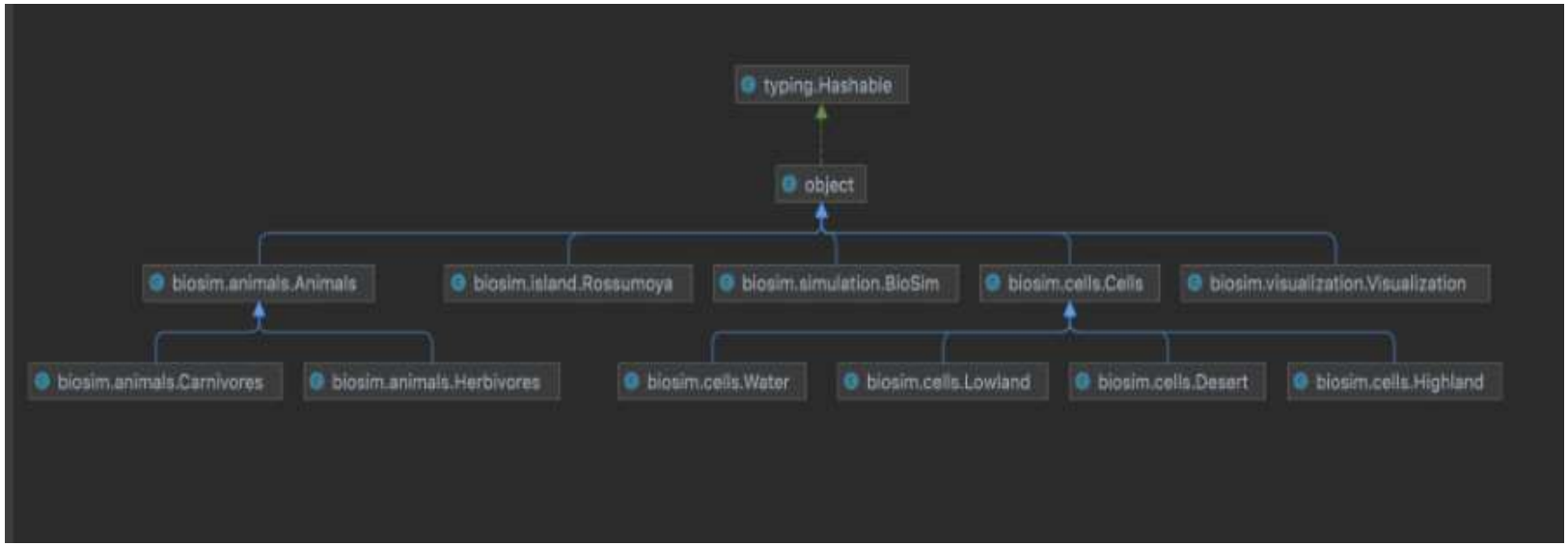
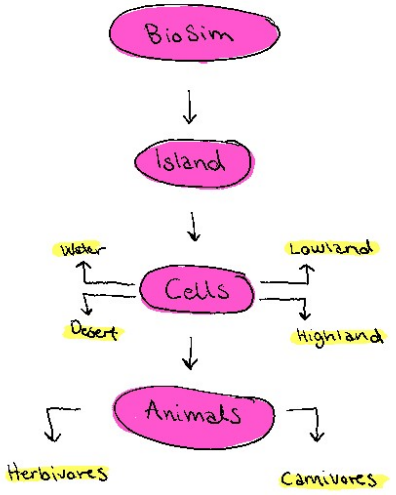
TABLE OF CONTENST

OVERALL STRUCTURE



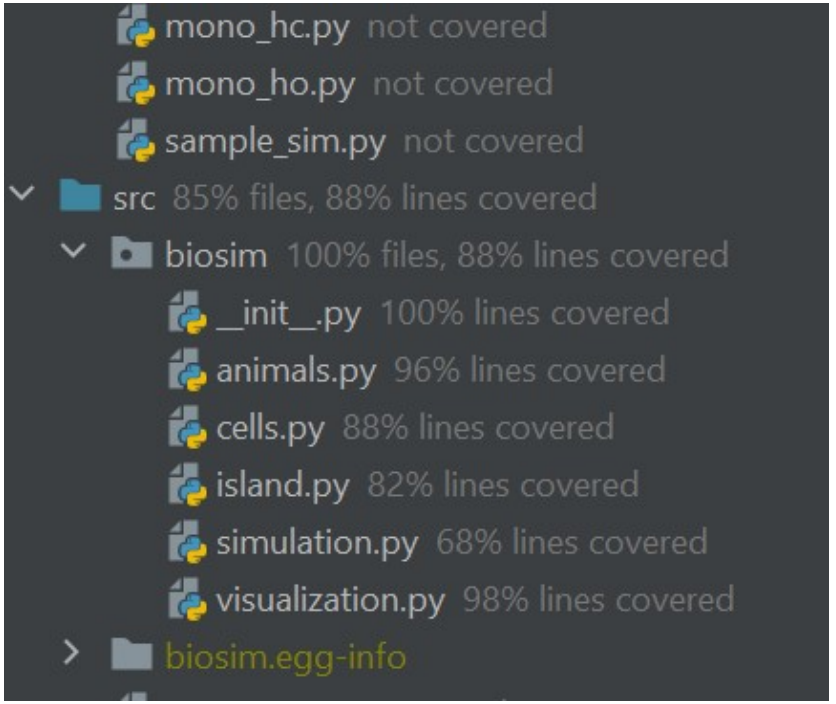


```python
def animal_aging(self):
    """..."""
    self.age += 1

def calc_birth_weight(self):
    r"""Calculates weight of an animal at birth..."""
    birth_weight = random.gauss(self.parameters['w_birth'], self.parameters['sigma_birth'])
    return birth_weight

def weight_gain(self, food):
    r"""When eating, the animal gains weight..."""
    self.weight += self.parameters["beta"] * food
    self.calc_fitness()

def weight_loss(self):
    r"""Each cycle the animal lose weight..."""
    self.weight -= (self.parameters['eta'] * self.weight)
    self.calc_fitness()

def calc_fitness(self):
    r"""Fitness is the overall health of the animal..."""

    q_age = 1 / (1 + math.exp(self.parameters['phi_age'] * (self.age - self.parameters['a_half'])))
    q_weight = 1 / (1 + math.exp(-self.parameters['phi_weight'] * (self.weight - self.parameters['w_half'])))

    if self.weight <= 0:
        self.fitness = 0
    else:
        self.fitness = q_age * q_weight
```

OUR SOLUTIONS

TRUSTWORTHY CODE

- Safe code = well tested code
- Our projects biggest flaw



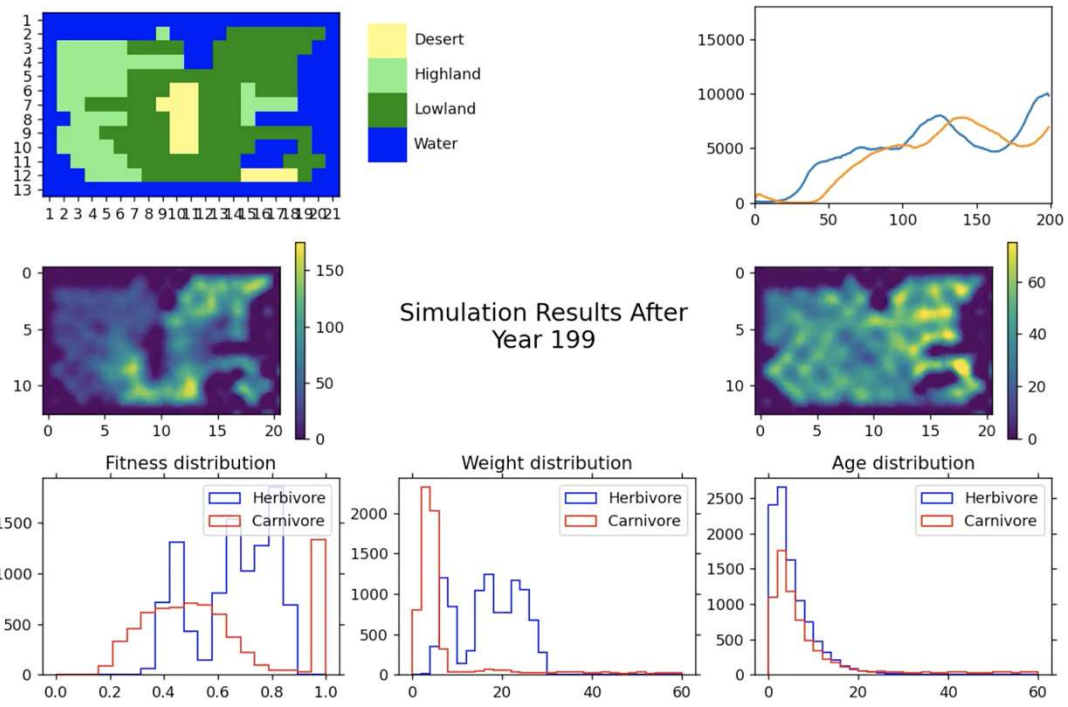
With the given biosim_interface test we got good coverage

WITH MORE TIME

- Testing
  - Should have over 80% coverage
- Optimalization
  - Faster code
- Thorough documentation
  - Easier for the user to use
  - Code examples

FINAL PRODUCT

```
                'pop': [{'species': 'Herbivore',
                         'age': 5,
                         'weight': 20}
                        for _ in range(150)]}]
ini_carns = [{'loc': (9, 6),
              'pop': [{'species': 'Carnivore',
                       'age': 2,
                       'weight': 45}
                      for _ in range(300)]}]
new_carns = [{'loc': (4, 13),
              'pop': [{'species': 'Carnivore',
                       'age': 5,
                       'weight': 30}
                      for _ in range(10)]}]

sim = BioSim(island_map=geogr, ini_pop=ini_herbs+ini_carns,
             seed=123456,
             hist_specs={'fitness': {'max': 1.0, 'delta': 0.05},
                         'age': {'max': 60.0, 'delta': 2},
                         'weight': {'max': 60, 'delta': 2}},
             vis_years=1)

sim.set_animal_parameters('Herbivore', {'zeta': 3.2, 'xi': 1.8})
sim.set_animal_parameters('Carnivore', {'a_half': 60, 'phi_age': 0.5,
                                        'omega': 0.3, 'F': 65,
                                        'DeltaPhiMax': 9.,
                                        "mu":0.9})
sim.set_landscape_parameters('L', {'f_max': 1200})

sim.simulate(num_years=100)
sim.add_population(population=new_carns)
sim.simulate(num_years=100)
sim.make_movie()
```



Thank you!