Modelling the ecosystem of Rossumøya

INF200 Advanced Programming – exam project January 2021

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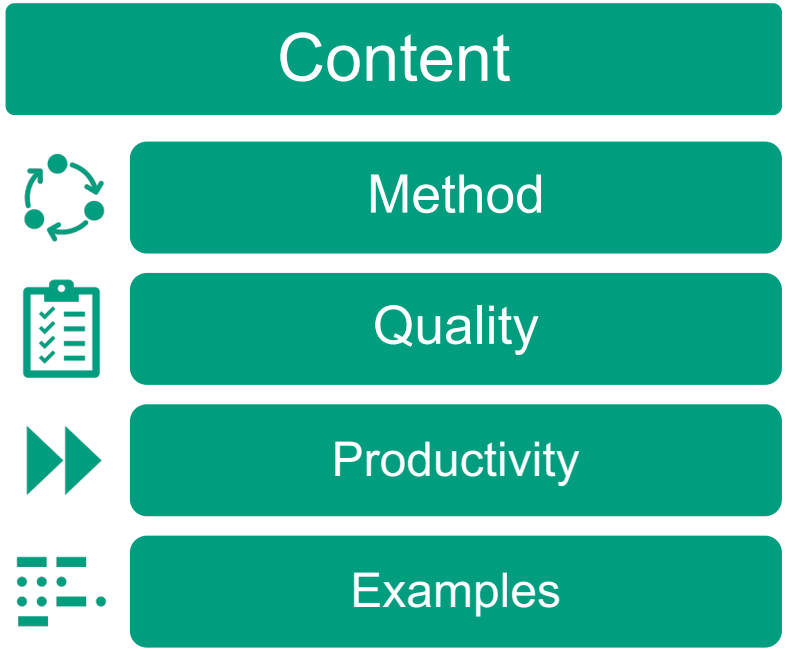
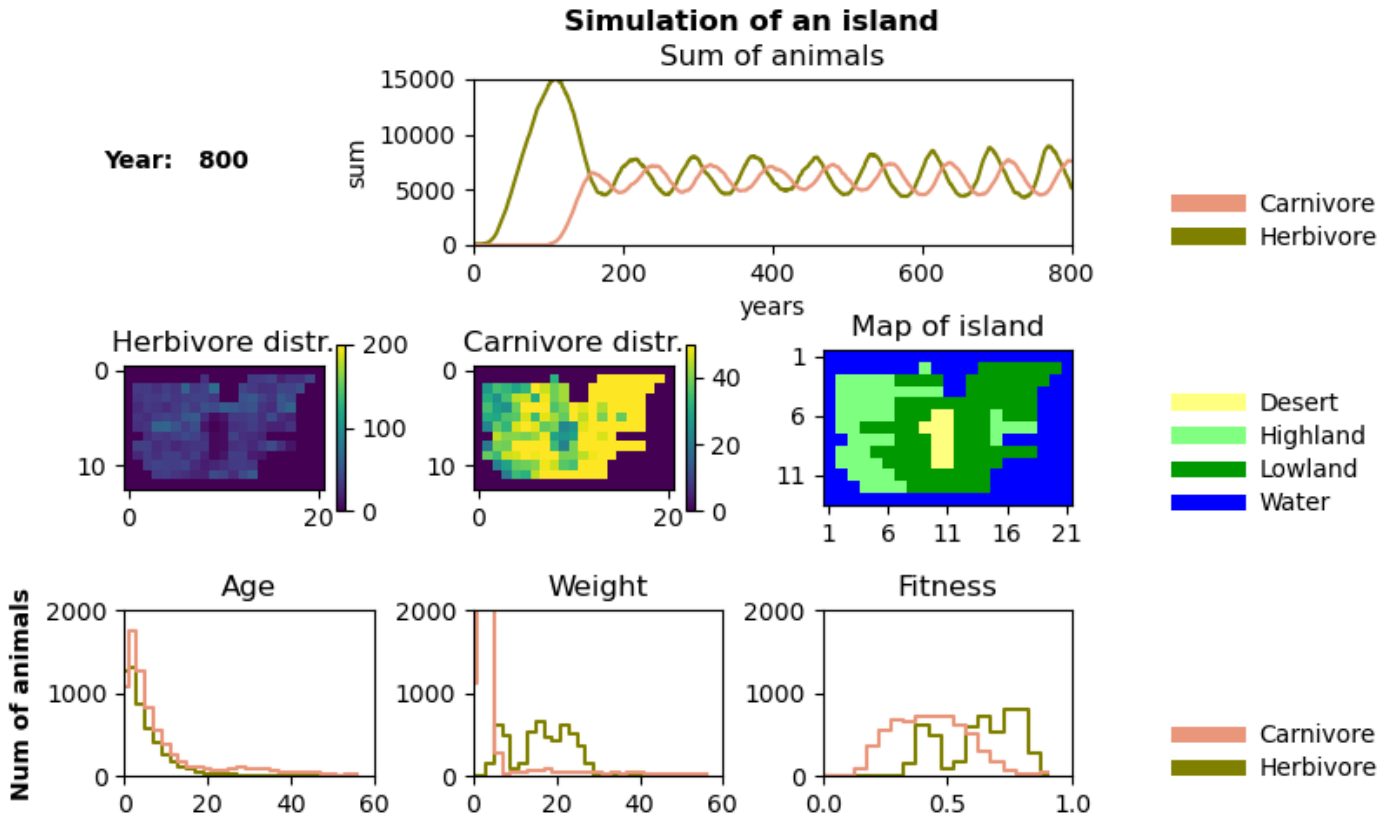
Introduction

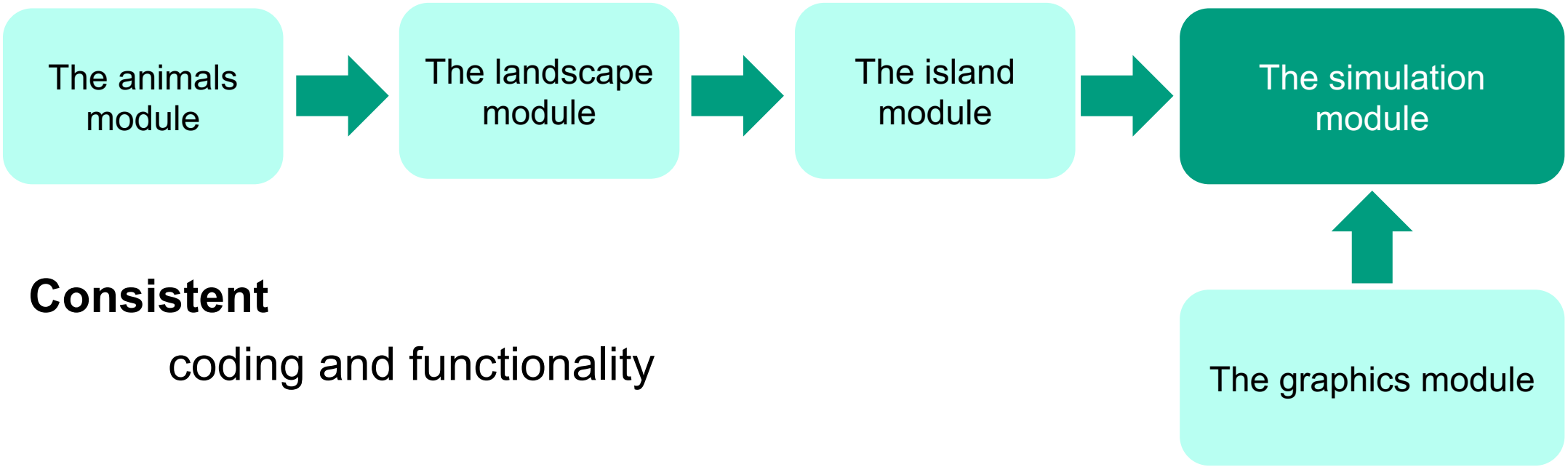
A request from Environmental Protection Agency of Pylandia (EPAP)



Animation of simulated result



Method



Consistent

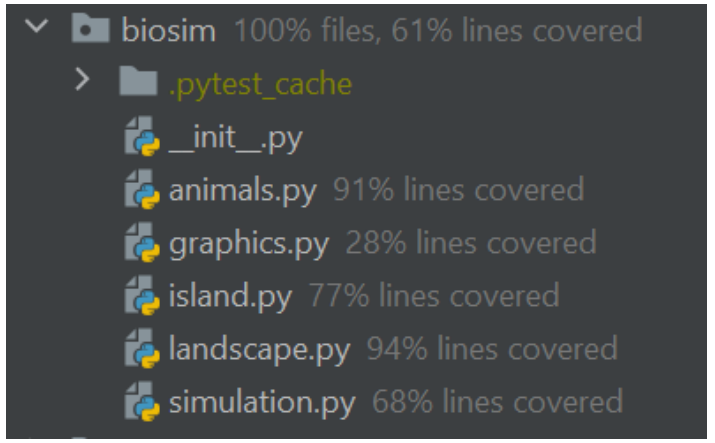
coding and functionality

“Independent” functionality

Quality

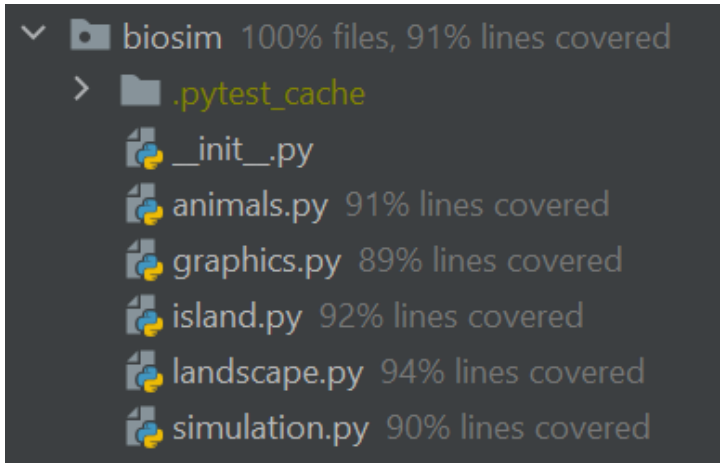
Testing

thorough testing of foundation



Documentation

structured and user-friendly



Quality

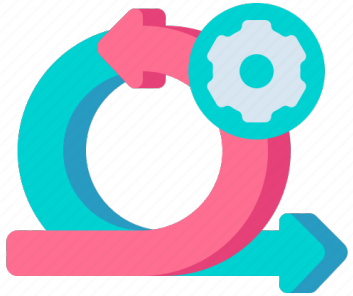
Control of user input

'herbivore', 'HERBIVORE', 'HERbivore'

and typing corrections

Future development

Functionality
before optimization



Productivity

Profiling

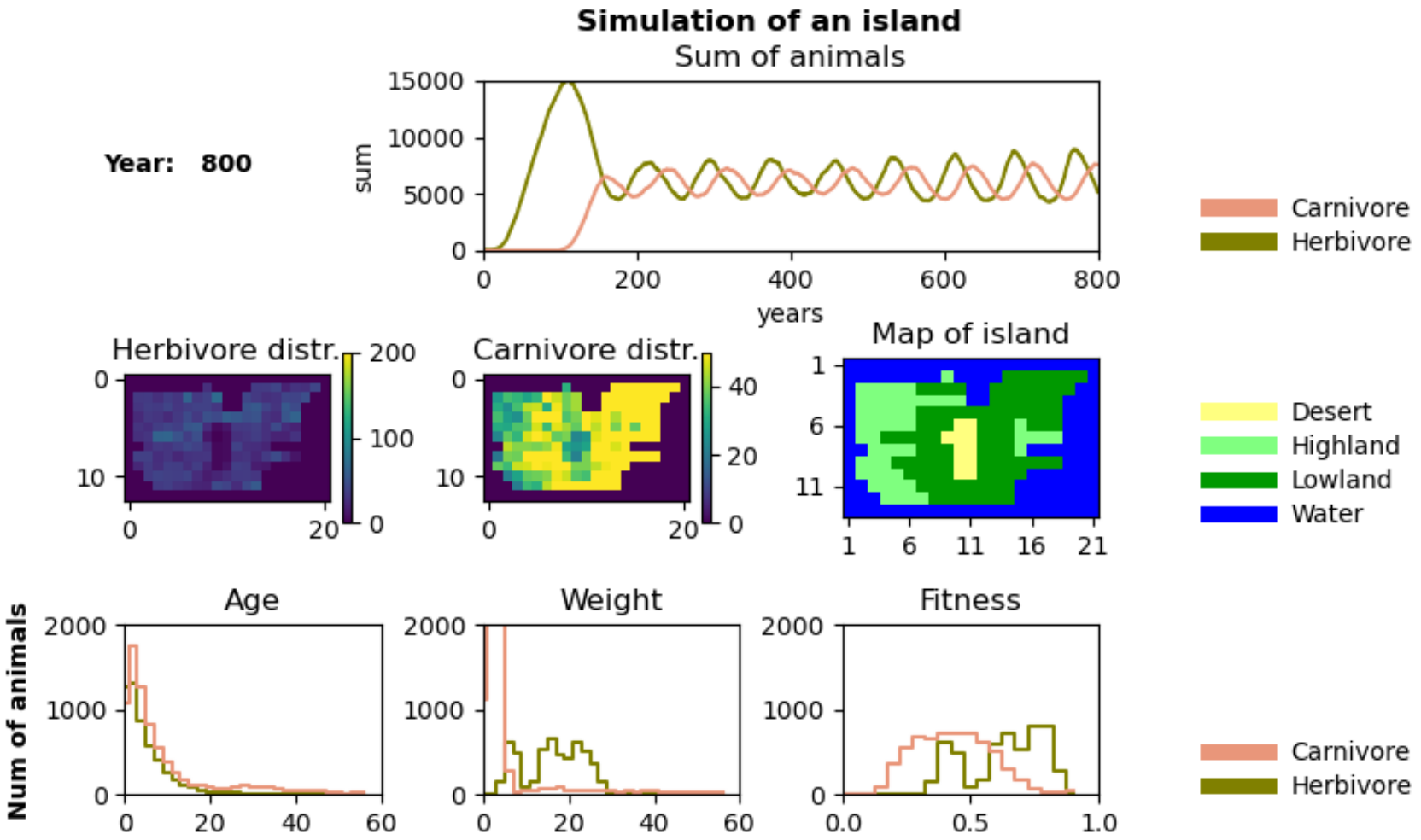
Dictionary > nested list

Feeding of carnivore

Feeding of carnivore

```
if self.fitness <= herb.fitness:
    # If fitness is too low, return survivors
    return herb_survivors + available_prey[i:]
```

```
else:
    self.weight_gain(self.param['F'])
    # If satisfied, return the survivors
    return herb_survivors + available_prey[i + 1:]
```


Simulation of an island
Sum of animals
Year: 800
sum
15000
10000
5000
0
0
200
400
600
800
years
Carnivore
Herbivore
Herbivore distr.
Carnivore distr.
Map of island
200
100
0
40
20
0
10
20
1
6
11
16
21
Desert
Highland
Lowland
Water
Num of animals
Age
Weight
Fitness
2000
1000
0
0.0
0.5
1.0
60
Carnivore
Herbivore