SOFTWARE PRESENTATION FOR EPAP

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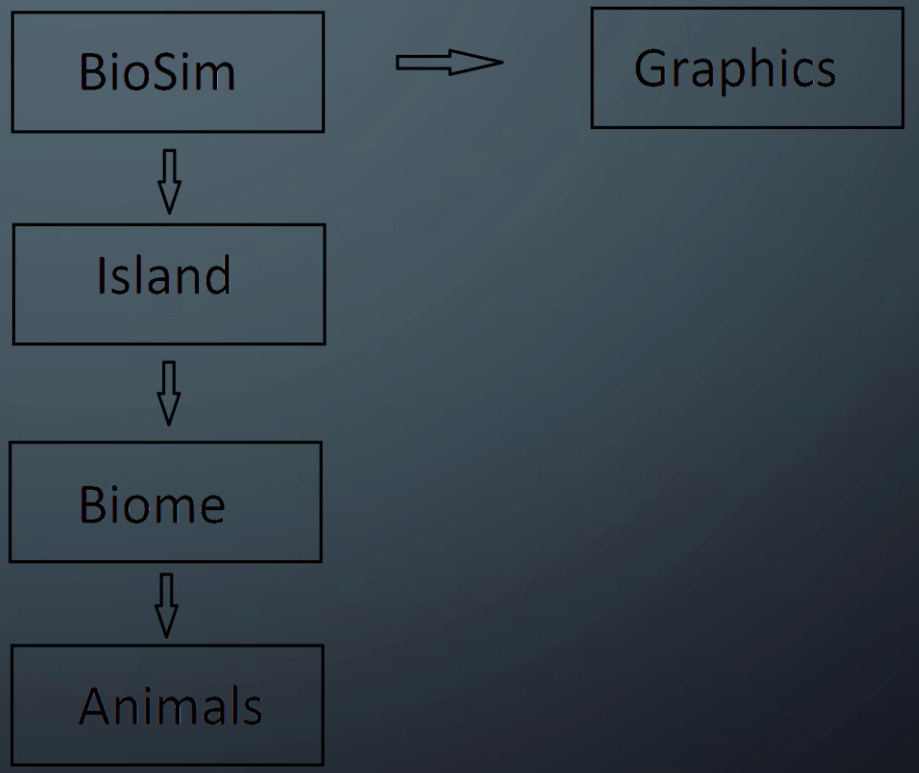
POPULATION DYNAMICS SIMULATION EXPERTS

STRUCTURE

- Classes
- Challenges
- Interface



EXAMPLES

```python
class Herbivores:
    """
    This class contains all the at
    """
    w_birth = 8.0
    sigma_birth = 1.5
    beta = 0.9
    eta = 0.05
    a_half = 40
    phi_age = 0.6
    w_half = 10
    phi_weight = 0.1
    mu = 0.25
    gamma = 0.2
    zeta = 3.5
    xi = 1.2
    omega = 0.4
    F = 10
    name = 'Herbivore'

    @staticmethod
    def feeding(cell, animal):
```

```python
class Carnivores:
    """
    This class contains all the attri
    """
    w_birth = 6.0
    sigma_birth = 1.0
    beta = 0.75
    eta = 0.125
    a_half = 40
    phi_age = 0.3
    w_half = 4
    phi_weight = 0.4
    mu = 0.4
    gamma = 0.8
    zeta = 3.5
    xi = 1.1
    omega = 0.8
    F = 50
    DeltaPhiMax = 10
    name = 'Carnivore'

    @staticmethod
    def feeding(cell, animal):
```

```python
class Lowland:
    """
    Contains the attributes of Lowland.
    Max amount of fodder and availability.
    """
    f_max = 800
    availability = True


class Highland:
    """
    Contains the attributes of Highland.
    Max amount of fodder and availability.
    """
    f_max = 300
    availability = True


class Desert:
    """
    Contains the attributes of Desert.
    Max amount of fodder and availability.
    """
    f_max = 0
    availability = True


class Water:
    """
    Contains the attributes of Water.
    Max amount of fodder and availability.
    """
    f_max = 0
    availability = False
```

QUALITY

- Reliable
- Accurate
- Execution time

```
ValueError: Animals can't spawn here at 1,1
```

```
ValueError: 'zet' is not a parameter in Herbivore. Check spelling!
```

```
ValueError: ('Map has no boundary at', (21, 5))
```

```
Total count, mean
201.63 Herbivores
```

```
125.75
```

USAGE

- Easy to use for end user
- Comprehensive documentation

- BioSim
  - The simulation module
  - The island module
  - The biome module
  - The animals module
  - The math functions module
  - The graphics module

- Formulas used in our simulation

- Mapmaker's guide to the gala… err.. Island

- readME

```
ini_carns_2 = [{'loc': (6, 23), 'pop': [{'species': 'Carnivore', 'age': 5, 'weight': 20}
                                        for _ in range(60)}]

sim = BioSim(geogr, ini_herbs + ini_carns + ini_herbs_2 + ini_carns_2, seed=103, vis_years=4)

sim.simulate(400)
```

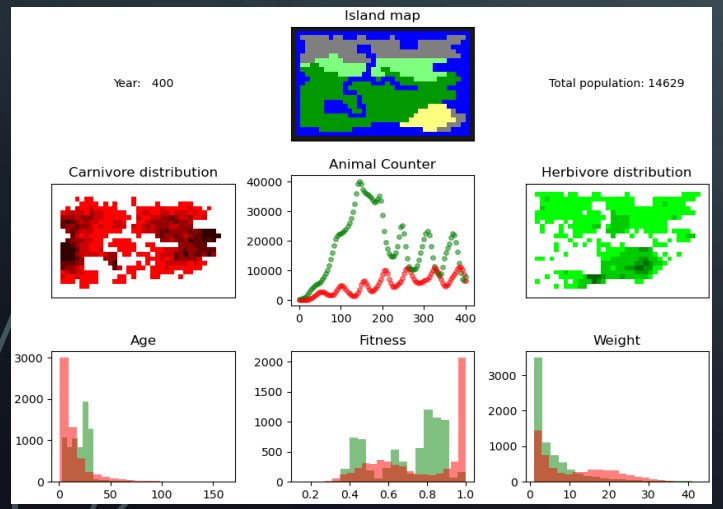
RESULTS & ADDITIONAL FEATURES

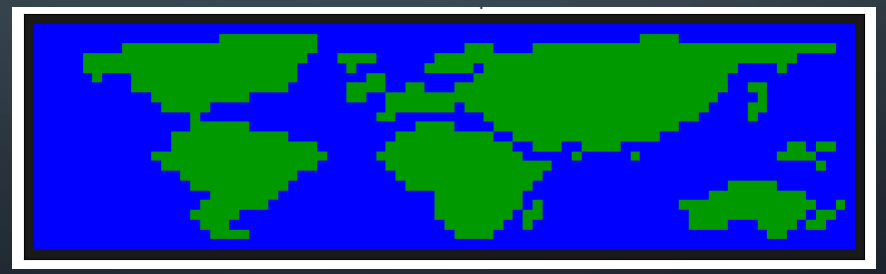
- Can be modified quite easily.
- End product satisfactory.

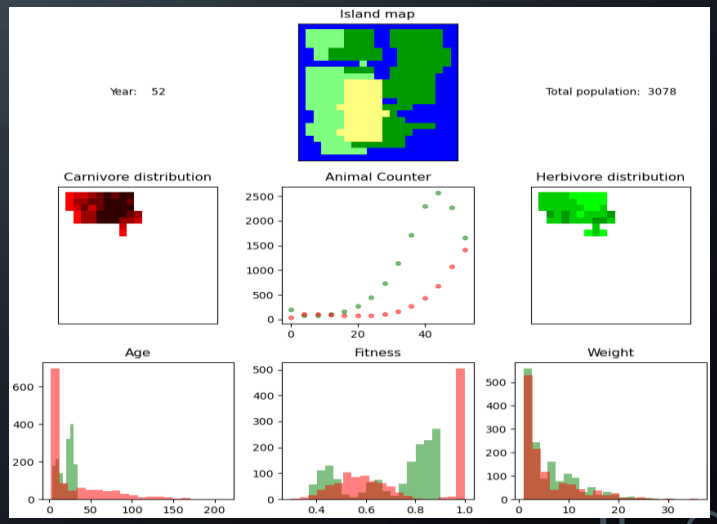
```
class Salt_Water:
    """..."""
    f_max = 0
    availability = False

class Fresh_water:
    """..."""
    f_max = 30
    availability = True

class Mountain:
    """..."""
    f_max = 50
    availability = True
```







```
1
2 if 0.1 + 0.2 == 0.3:
3     print("There is 15 more slides!")
4 else:
5     print("Thank you for your attention!")
6
```