COMP 160
Object-oriented Programming

Lab 6

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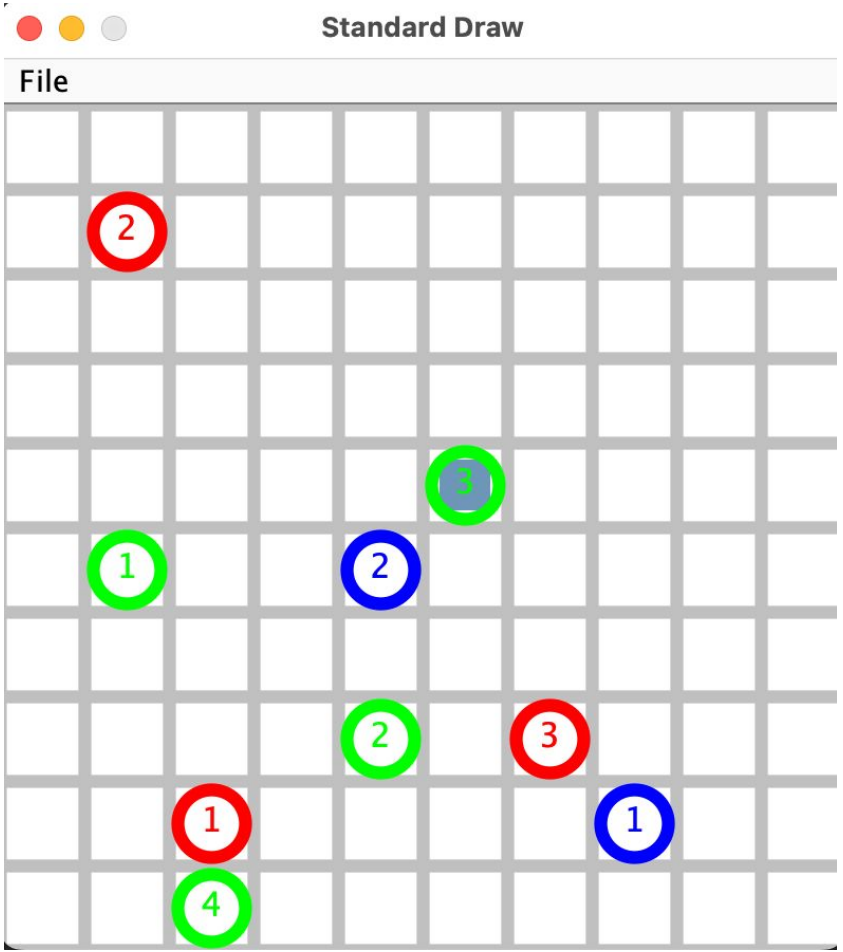
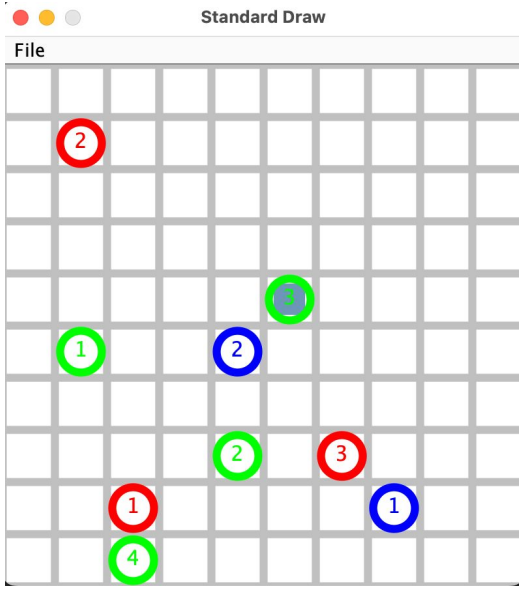
2D Animal World

- Create a 10x10 2D Grid World Environment
  - ROWS: 10
  - COLUMNS: 10
  - CELL_SIZE: 40
- Animals are represented by circles
  - Frog
  - Cat
  - Dog
- Rewards are represented by filled squares.
  - Each reward will have a random color.
- If the animal is in the same cell as the reward, the animal can collect the reward.

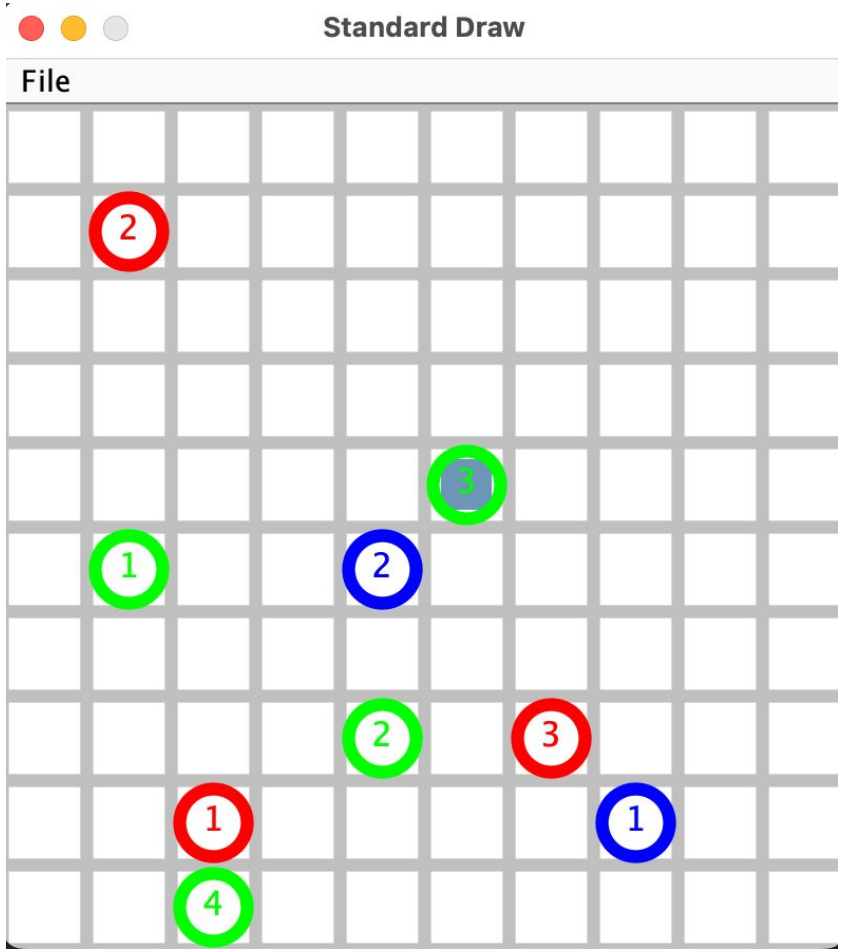


Animals

- Each subclass of the animal class will move in a different way
  - 4 equally likely actions (North, South, East, West)
- Each subclass will have a specific id
- Dog:
  - Dogs can move in all directions with equal probability.
  - v=1 cell/timestep
- Frog:
  - Frogs take the same action twice at each timestep. (jumping)
  - v=2 cells/timestep
- Cat:
  - Cats cannot move to the cells located at the boundaries of the canvas.
  - v=1 cell/timestep



ROWS: 10
COLUMNS: 10
CELL_SIZE: 40
NUM_CATS: 3
NUM_DOGS: 2
NUM_FROGS: 4
NUM_REWARDS: 5
PEN_RADIUS: 0.012



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UML Diagrams