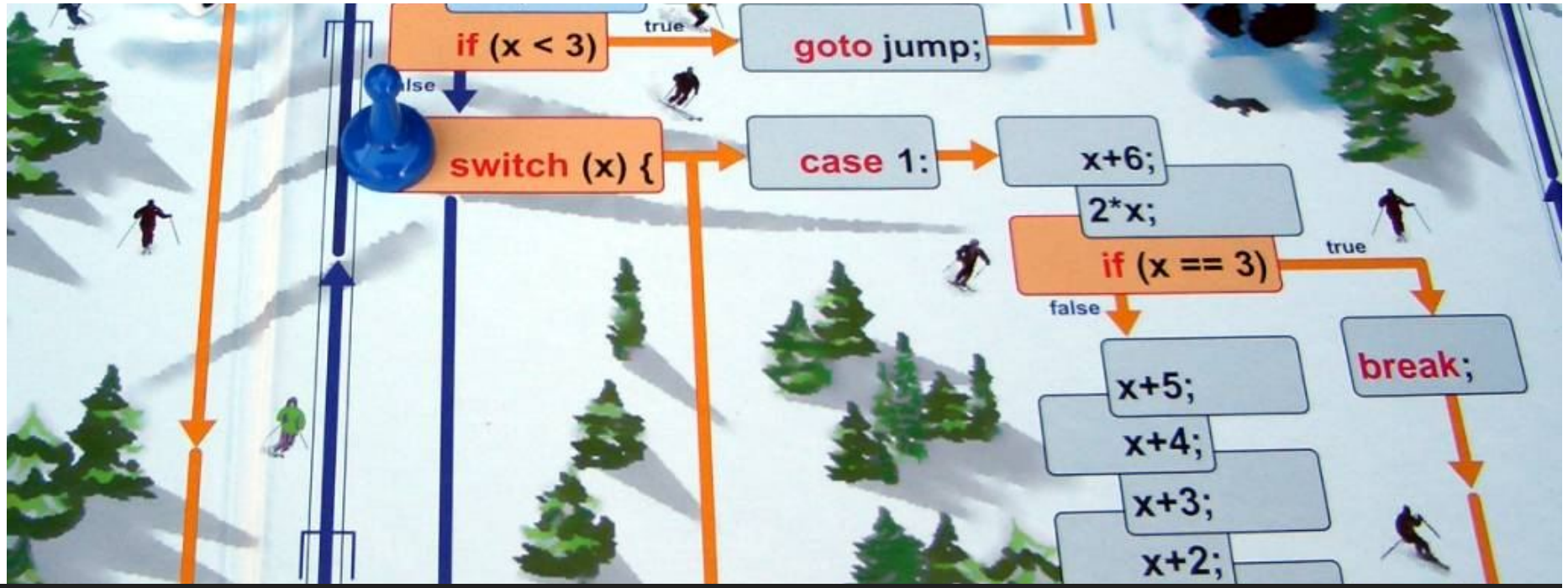


Creative Coding 2023

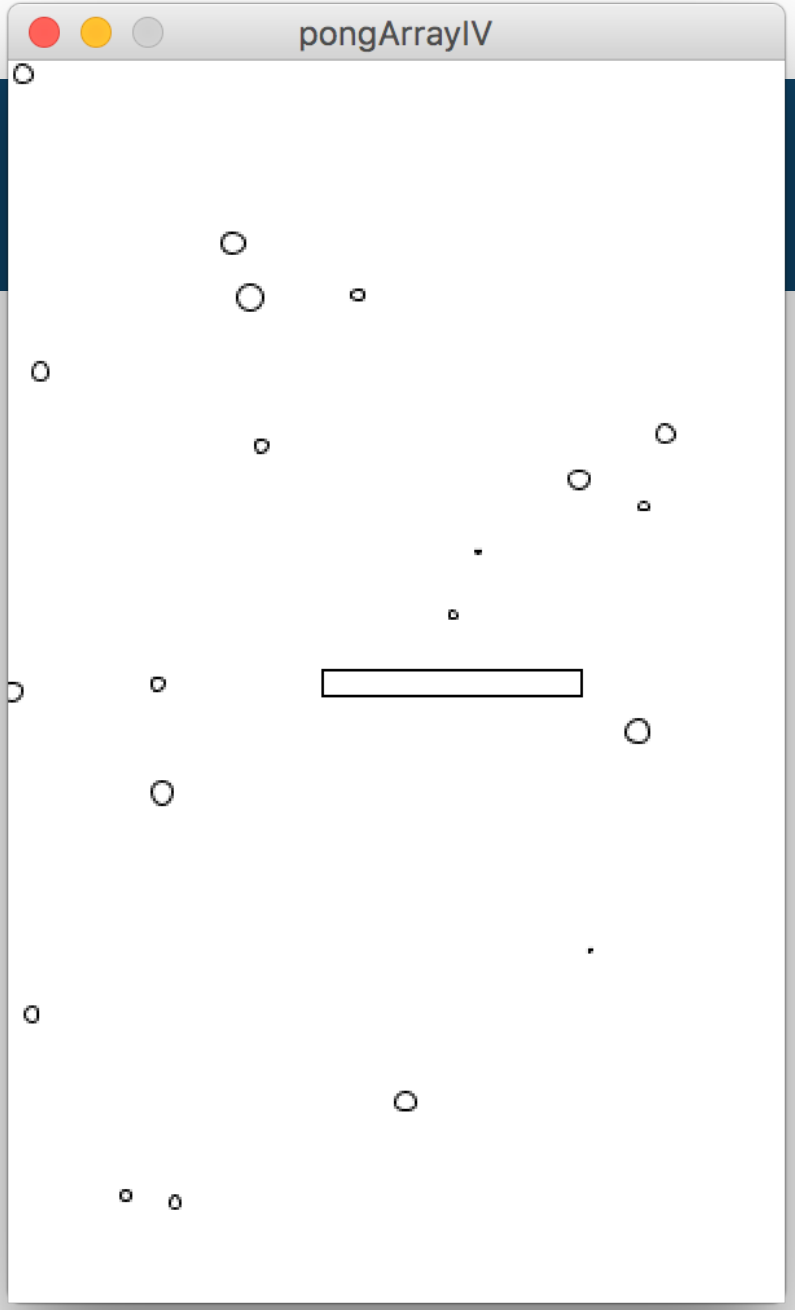
Instructor: Neng-Hao (Jones) Yu

Course website: https://openprocessing.org/class/83620

pongArrayIII

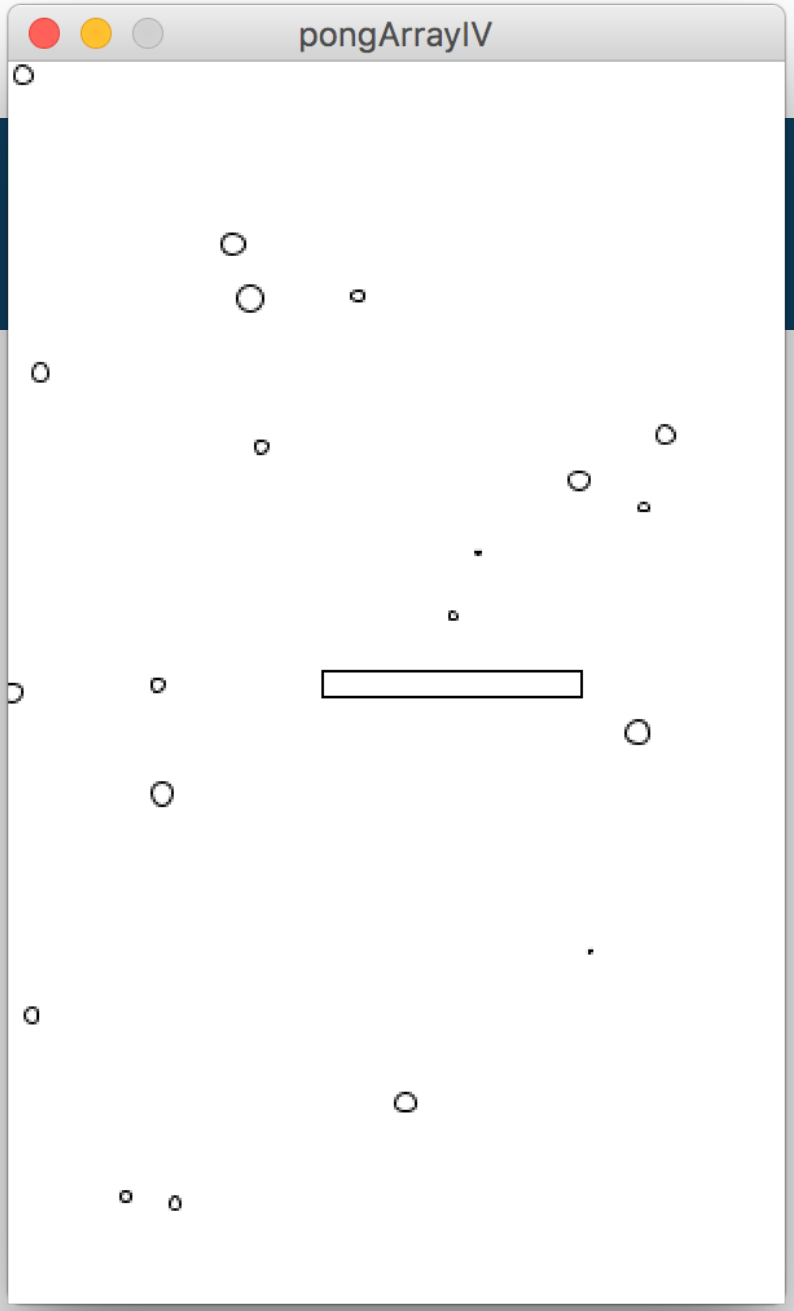
- Design a **Bar** class
  - **`Properties:`**
    `x,y,w,h`
  - **`Methods:`**
    `.move() -> follow mouseX`
    `.display()`

- Make the ball bounce when it hits the bar.
  - **`Hint:`** `boolean isHit(Bar b)`
  - isHit() is a member method in **Ball**. You can used it to detect circle-rectangle collision.



Bar class

```
class Bar{
  float x, y w, h;
  void move(){
    x = mouseX;
  }
  void display(){
    rectMode(CENTER);
    rect(x,y,w,h);
  }
  Bar(float len){
    w = len;
    h = 10;
    x = width/2;
    y = height/2;
  }
}
```



Composition

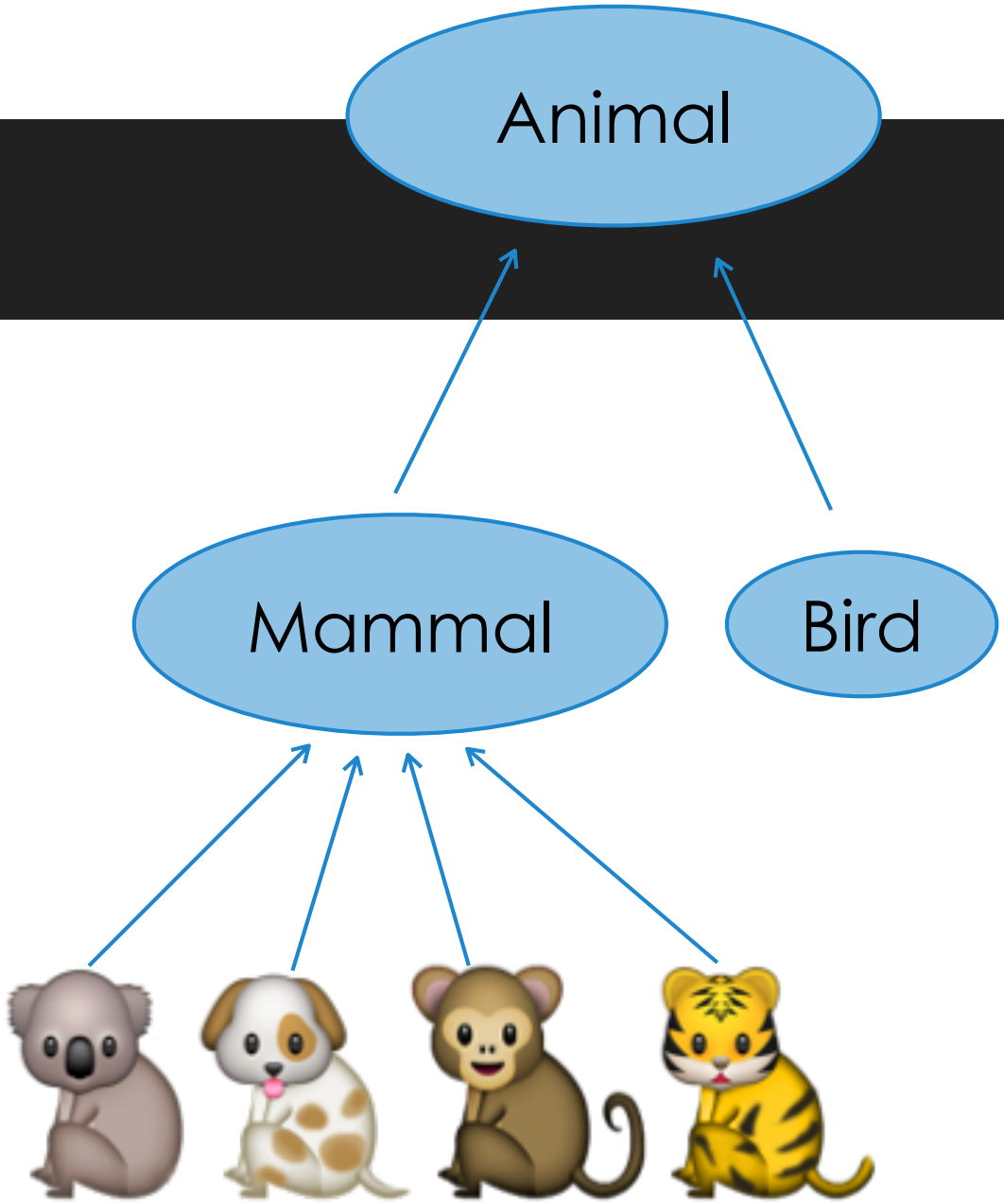
- Car
  - truck
- Mammal
  - tiger
  - dog
  - monkey
  - koala

Composition

- Car **has a** driver

Inheritance

- tiger is an Mammal
- dog is an Mammal
- Mammal is a Animal
- Bird is a Animal



Recap

- Relationships between classes:
  - Independent
  - Composition
    - A has B
  - Inheritance
    - parent / child
    - superclass / subclass

Assign 5: redesign chickenRun with OOP

Fork here: https://classroom.github.com/a/jllLcKTV

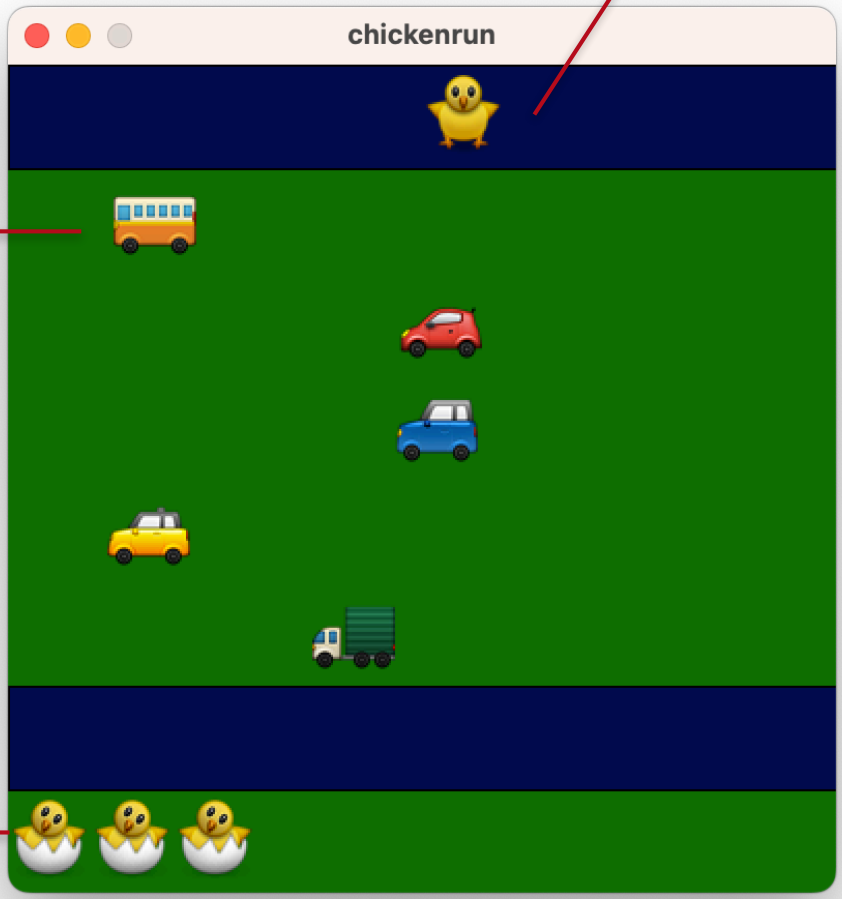
Submission deadline: 5/21 12pm

Chicken

Car

Array: cars

HPUI



Requirements

Level C:

- Complete the Chicken class (Chicken.pde) including its constructor, isWin() and move() methods.
- Please ensure that the constructor fills in the default values for the chicken's properties..
- Ensure that the isWin() method returns true when the chicken reaches the finish line.
- In the move() method, the chicken's x and y position will be updated based on the corresponding direction and constrained within the screen boundaries.
- After completing this part, you will be able to control the chicken and receive a win message upon reaching the finish line.

Requirements

Level B:

- Complete the Car class (Car.pde) including its constructor, and move() methods.
- Please ensure that the constructor fills in the default values for the car's properties..
- In the move() method, the car should move from right to left with the carSpeed and shift to the right when it moves out of the left boundary.
- Complete the main program (chickenrun_oop.pde) so that it produces the same result as the chickenrun.pde program, which includes five cars running on lanes and hitting the chicken to trigger a game over.

Requirements

Level A:

- Please create an overloading method named 'isHit' that takes a Chicken object as input and returns a boolean value indicating whether the input chicken has collided with a car.
- Please use the 'isHit' method in the main program to perform collision detection between the chicken and the five cars.