PIC 10B Discussion
Week 4
Professor: Michael Lindstrom
TA: Thomas Tu
Exercise: Inheritance and Polymorphism

• Let’s make a game (again)

• GameObject: parent class
  • Has a position(private): stored as vector<int>
  • Has a virtual void update() method: override it
  • Has a private const char* art: defaults to “ “
  • Weak_ptr to Board it is stored in(so you can check for collisions)

• Rock: is a GameObject
  • Art: “*”
  • Update(): does nothing
Exercise: Inheritance and Polymorphism

• Board
  • hasObj(int x, int y): returns if there is an object at that location
  • Update(): updates all GameObjects

• Player: is a GameObject
  • Update(): get an up, down, left, or right from cin, and change position accordingly
  • Make sure to check for rocks/other objects
  • Assign art for Player to be “P”
Exercise: Inheritance and Polymorphism

• GameObject
  • Has a unique id

• Grass
  • Similar to Rock, does nothing
  • When it updates, have it check if it is colliding(using hasObj)
    • Temporarily comment out the code that prevents Player from colliding with objects
  • If it does, delete the Grass
    • Search the Board’s objects for an item of the same id, and remove it from the list
    • Or, just send it to (-500, -500), where hopefully it won’t bother anyone
  • Also make the art “G”
Exercise: Inheritance and Polymorphism

• Enemy
  • Art: “E”
  • When a Player collides with an Enemy, they lose
    • Set willPlay=false
  • Enemies follow random movement, and do not check collision with objects
  • They move after the Player