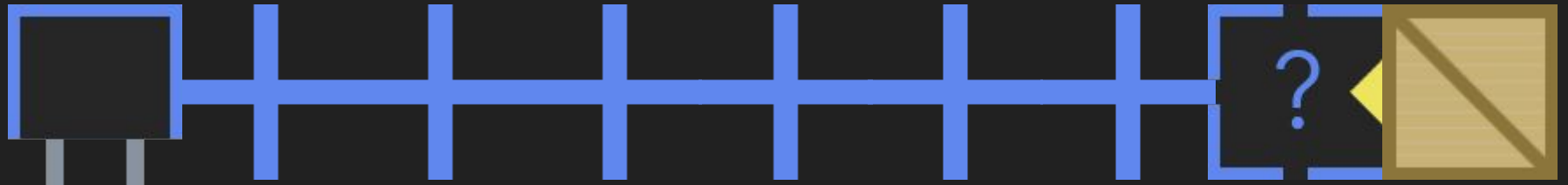


Fun Factory

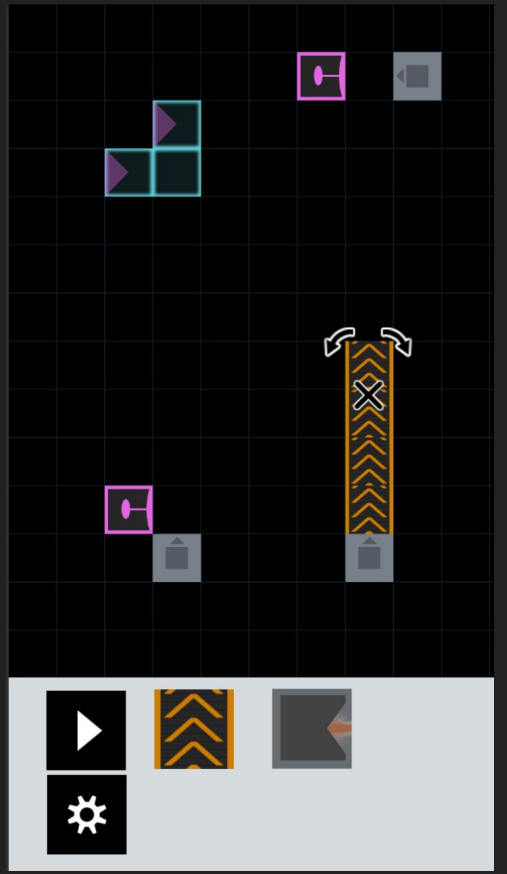
Connor Levesque and Max Shashoua

Unity Game Engine

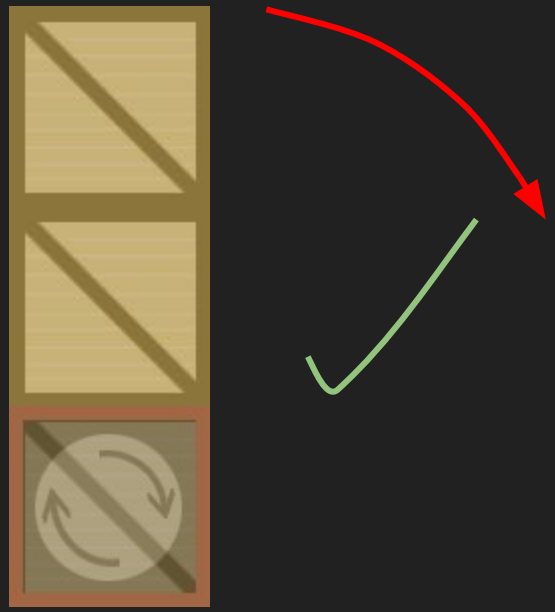
Unity provides us with a framework for sprites, animation, position, debugging, and compilation to multiple mobile platforms.

Goal

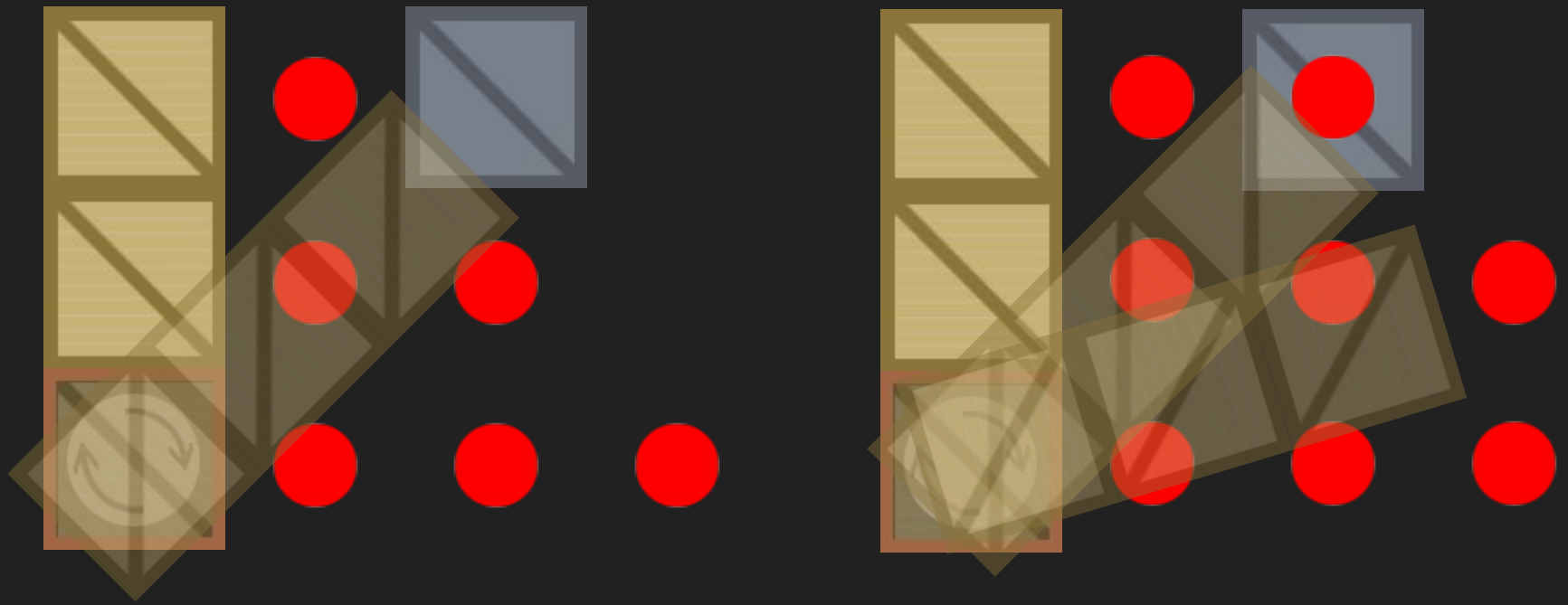
Paint crates and get them to the drop zones



?



How do it know?



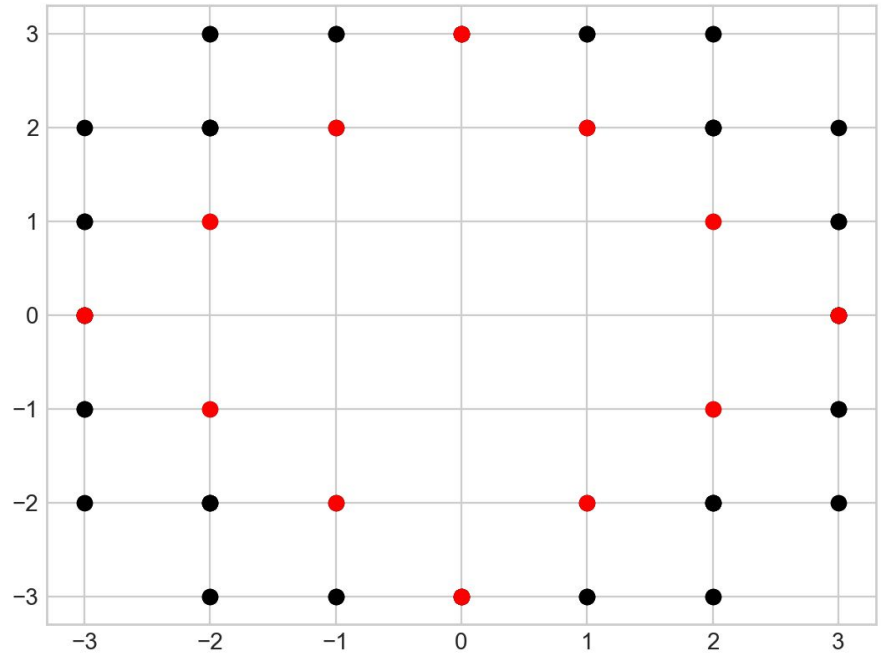
How do we choose pixels to check?

Midpoint Circle Algorithm

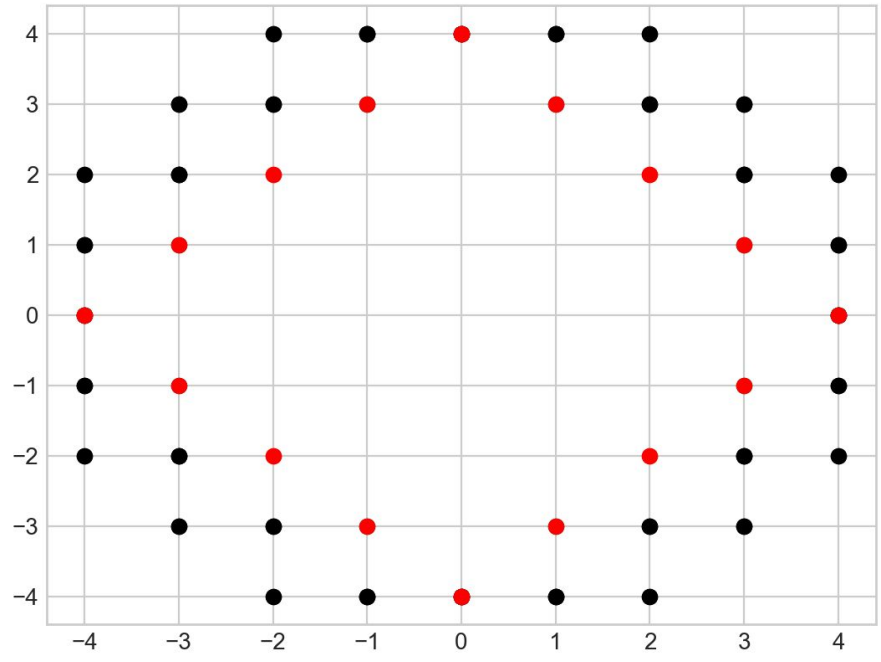
- Pros:
  - Used to draw circles with pixels
  - Fast and efficient (no trig)
  - Already exists (no need to design new alg)
- Cons:
  - Doesn’t account for crate thickness

Radius = 3

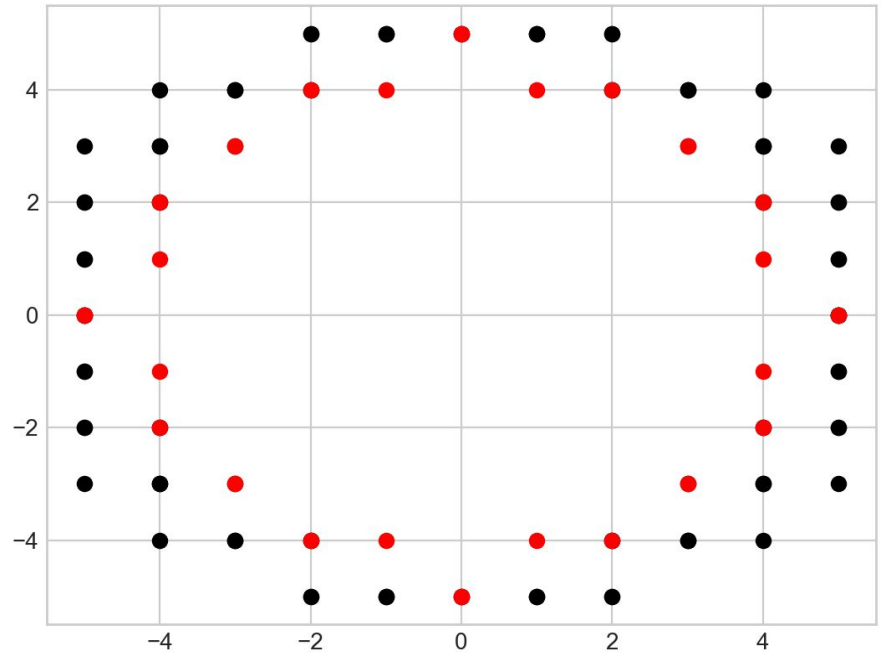
Red = midpoint circle
Black = custom alg



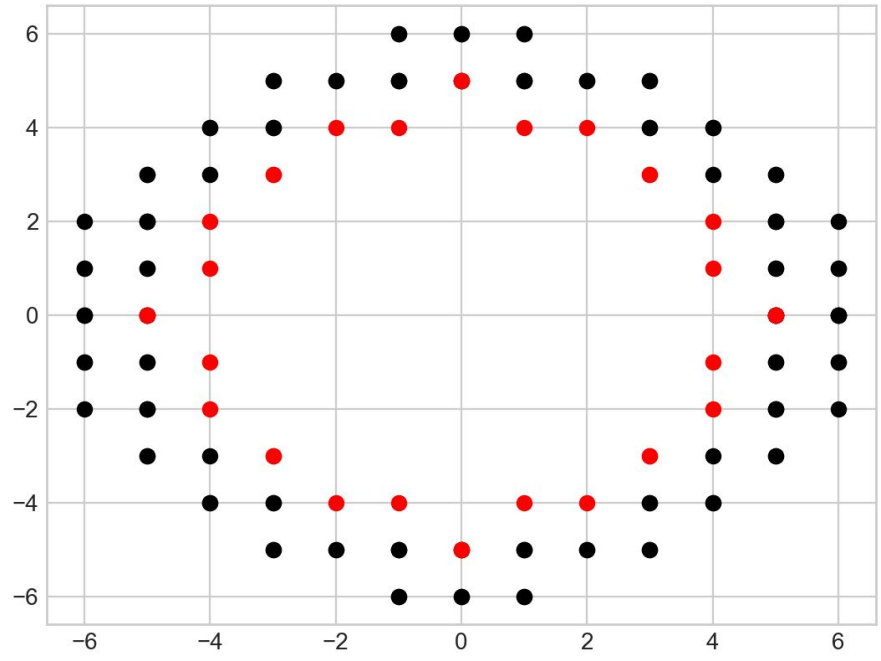
Radius = 4



Radius = 5

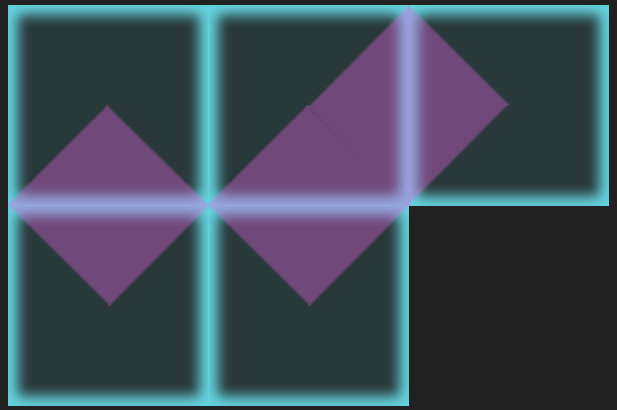


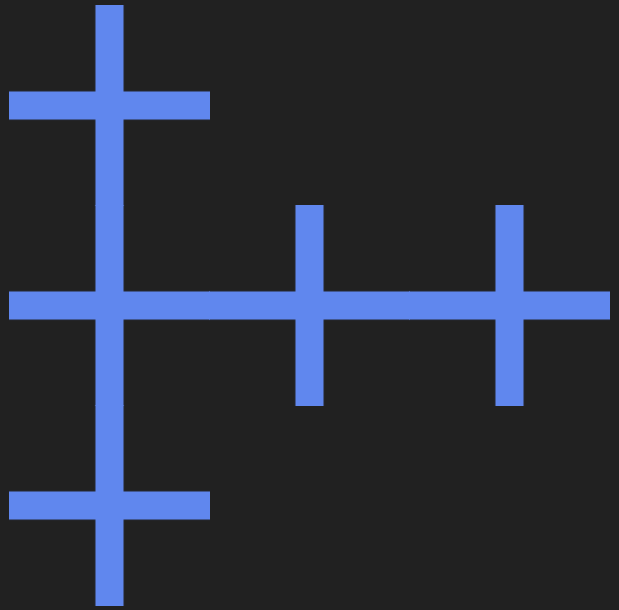
Radius = 5.5



Grouping System

CrateGroups, WireGroups, DropZoneGroups



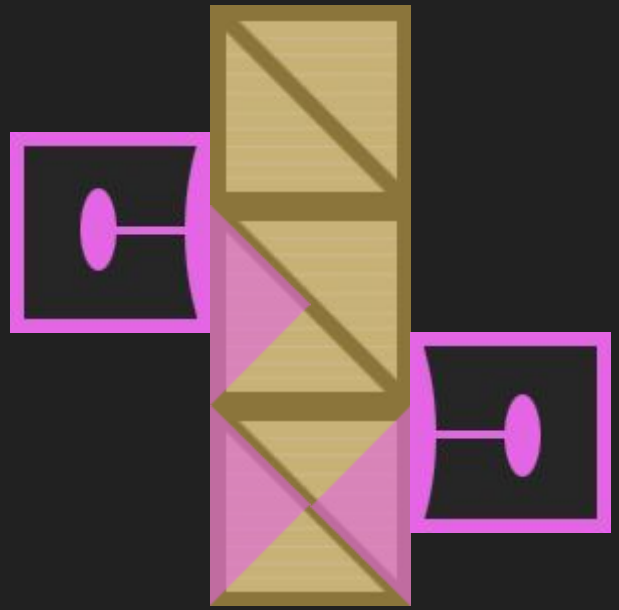


The Singleton Design Pattern

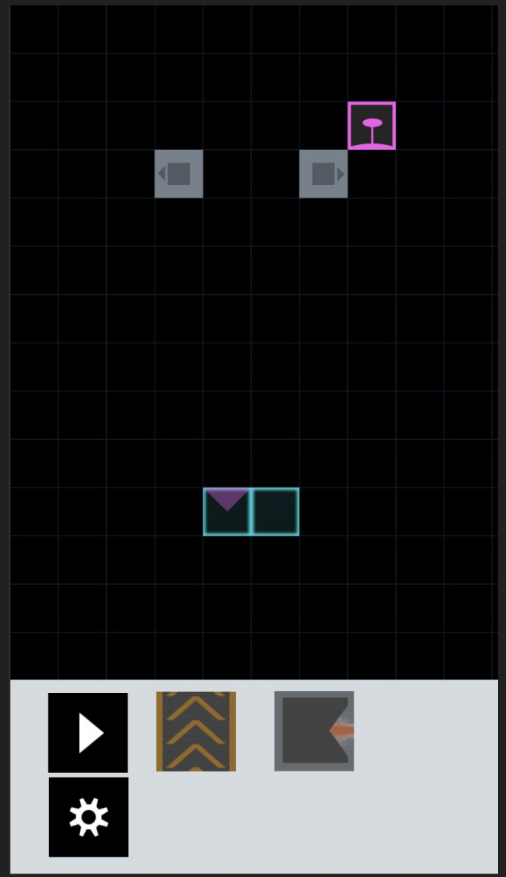
Ensures that one instance of an object exists in the whole program.

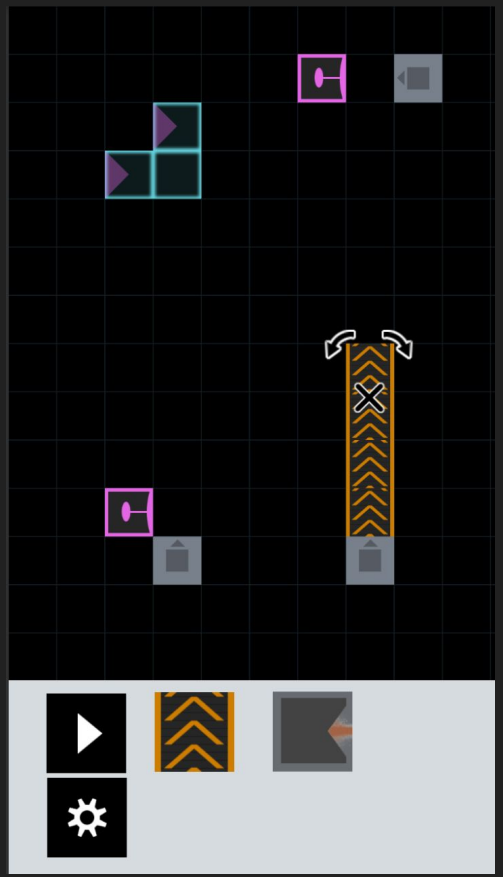
```
public class GameManager : MonoBehaviour {

    private static GameManager instance;
    private StairMaster stairMaster;
    public static StairMaster StairMaster {get{ return instance.stairMaster;
    private Tap tap;
    public static Tap Tap {get{ return instance.tap; }}
    public int height;
    public int width;
    public GameObject tilePrefab;

     void Awake () {
       instance = this;
```

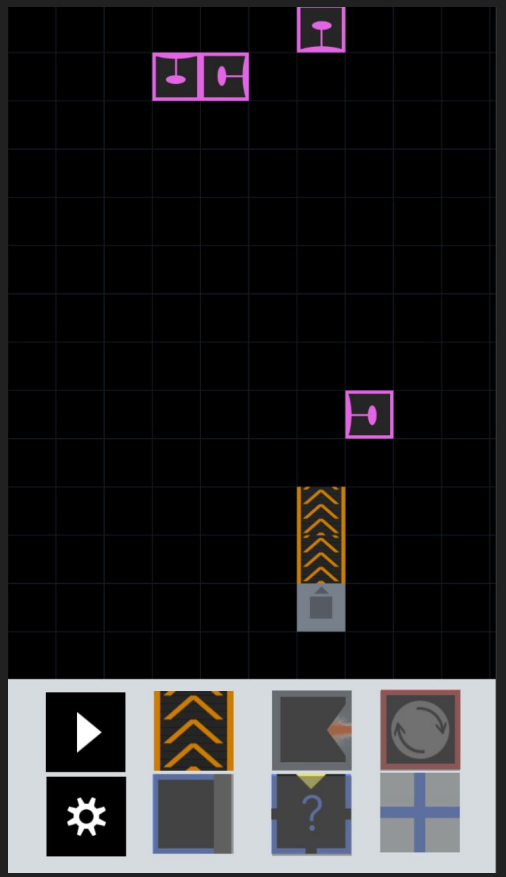
Painters



UI







Max plays a level

Future Work

a tutorial

art and sound polish

additional levels and features

rewarding points for solution quality

Fin