



15-112  
Lecture 2

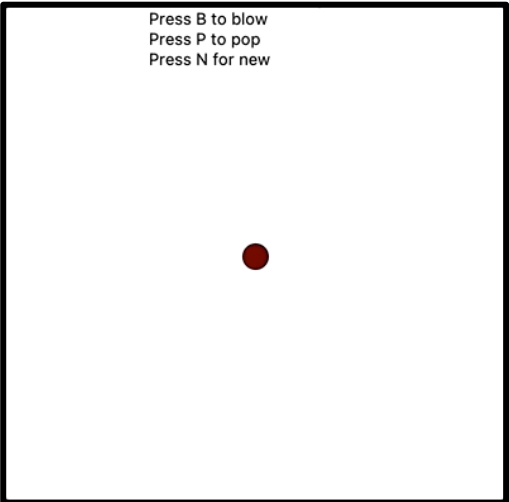
112 Graphics

Instructor: Pat Virtue

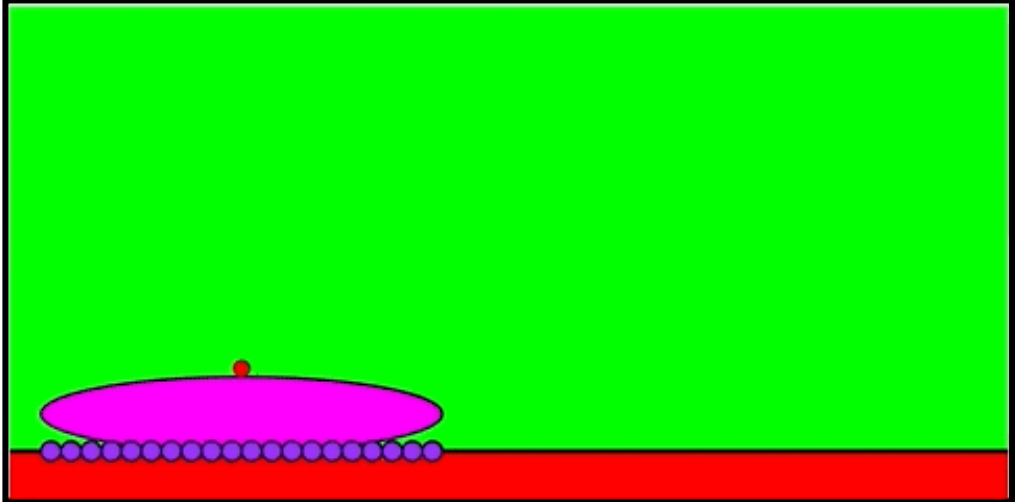
# Graphics (CS Academy)

# Coding with Pat's Minions

Grace



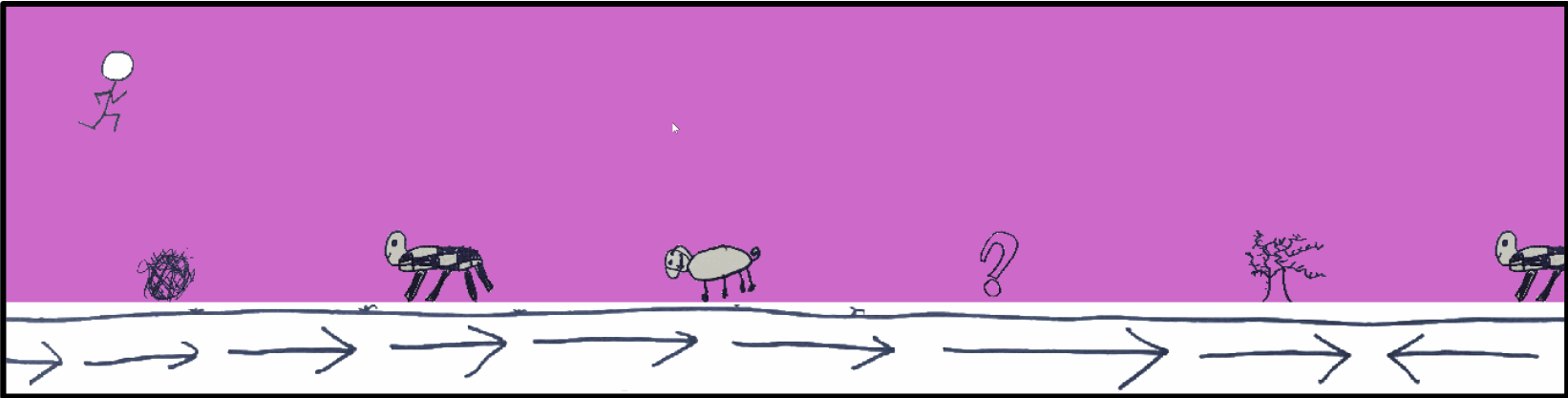
Elliot



Jay

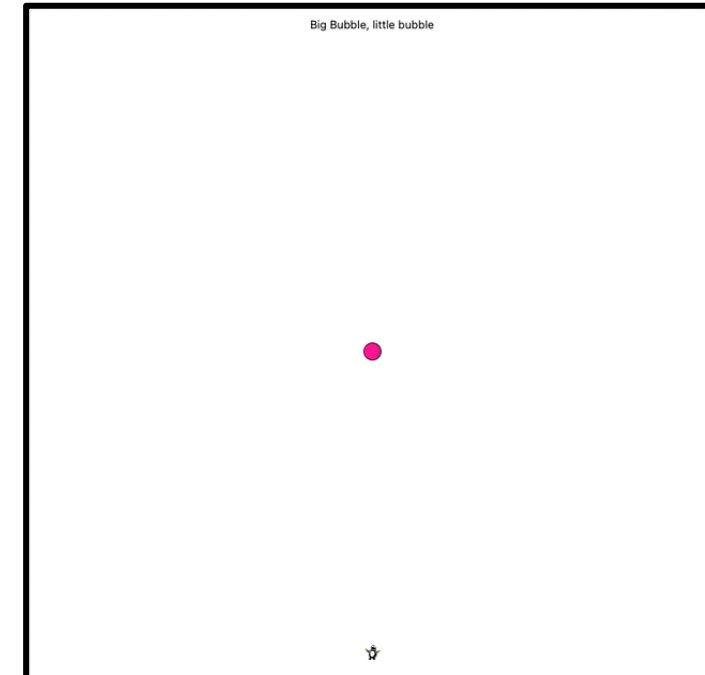
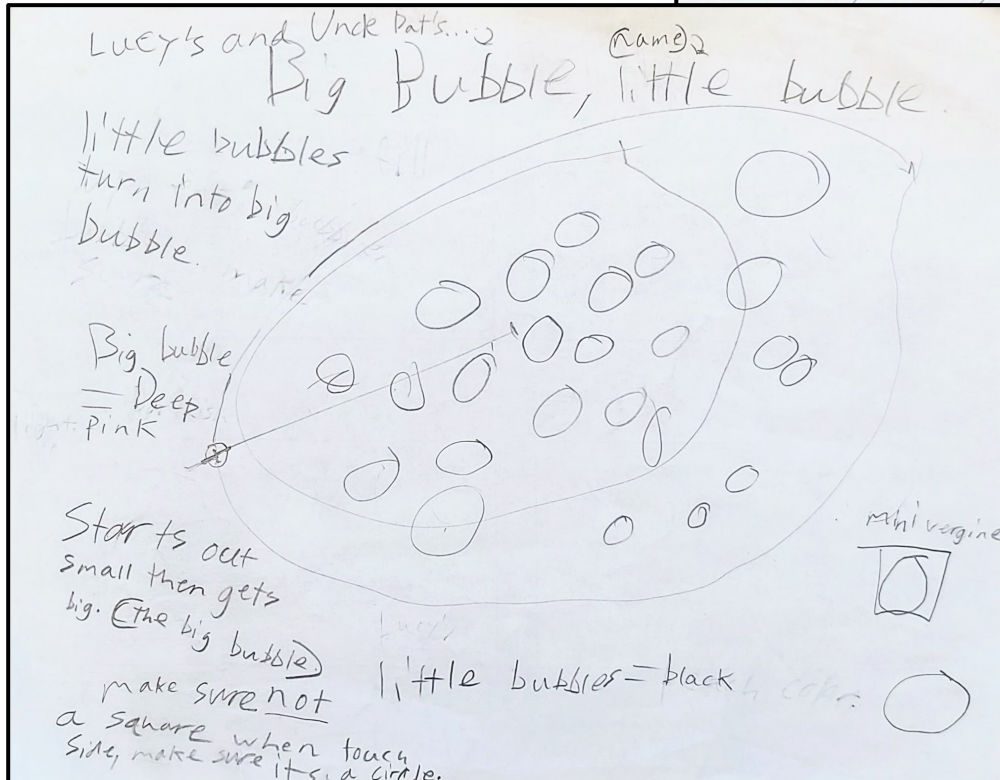
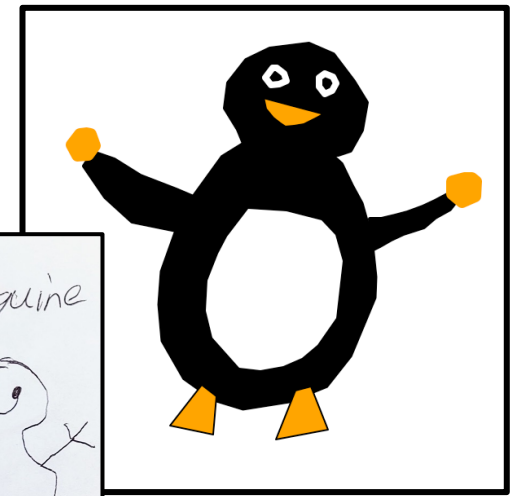
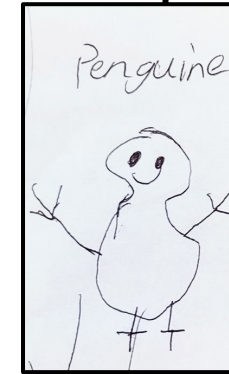
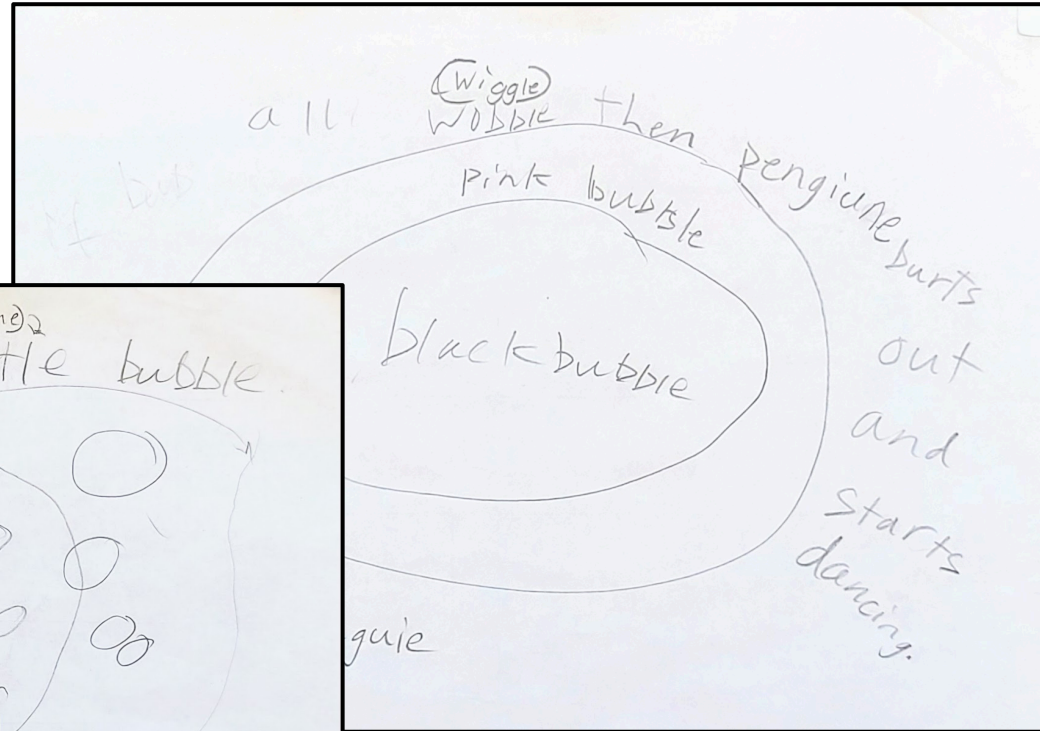


Ellie, Ryan, Lucy, and Uncle Pat



# Coding with Pat's Minions

Lucy (and Uncle Pat just trying to keep up)



helloGraphics.py

Stop

CPCS Mode

Run



Print

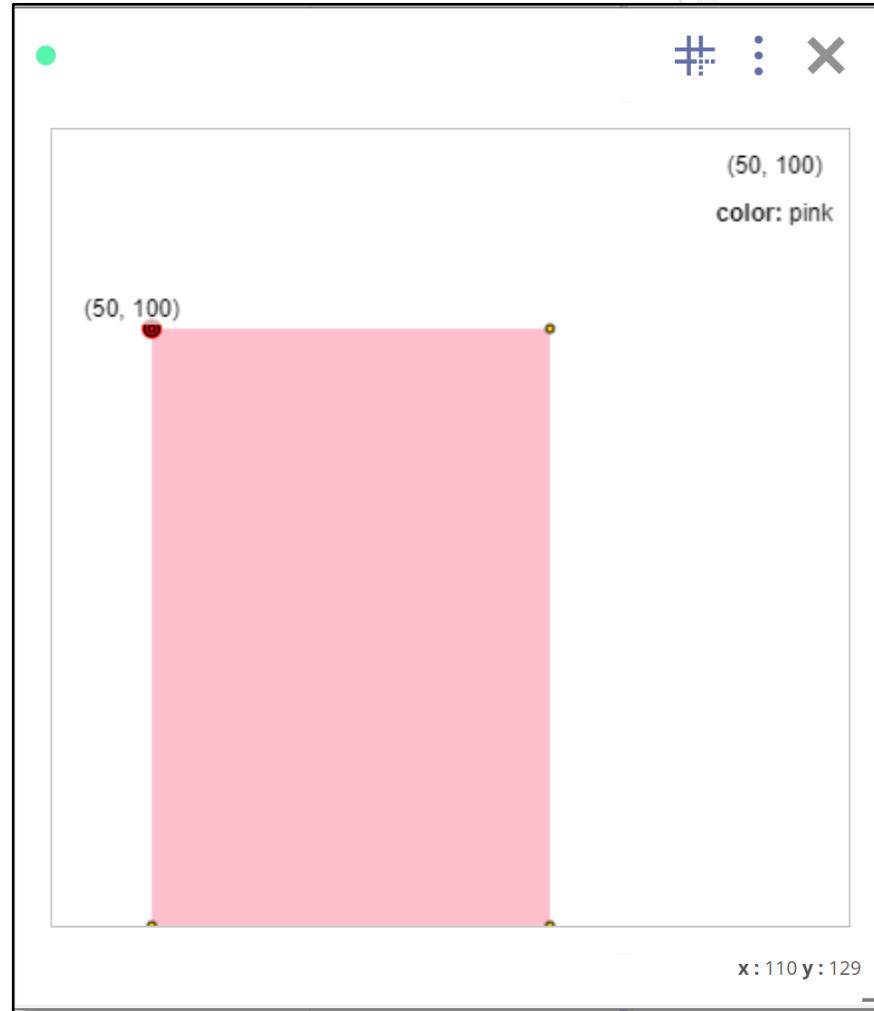
Code History

Saved

```
1 from cmu_graphics import *
2
3 def redrawAll(app):
4     drawRect(50, 100, 200, 300, fill='pink')
5
6 def main():
7     print('Hello pink square!')
8     runApp()
9
10 main()
11
```

Hello pink square!

>>>

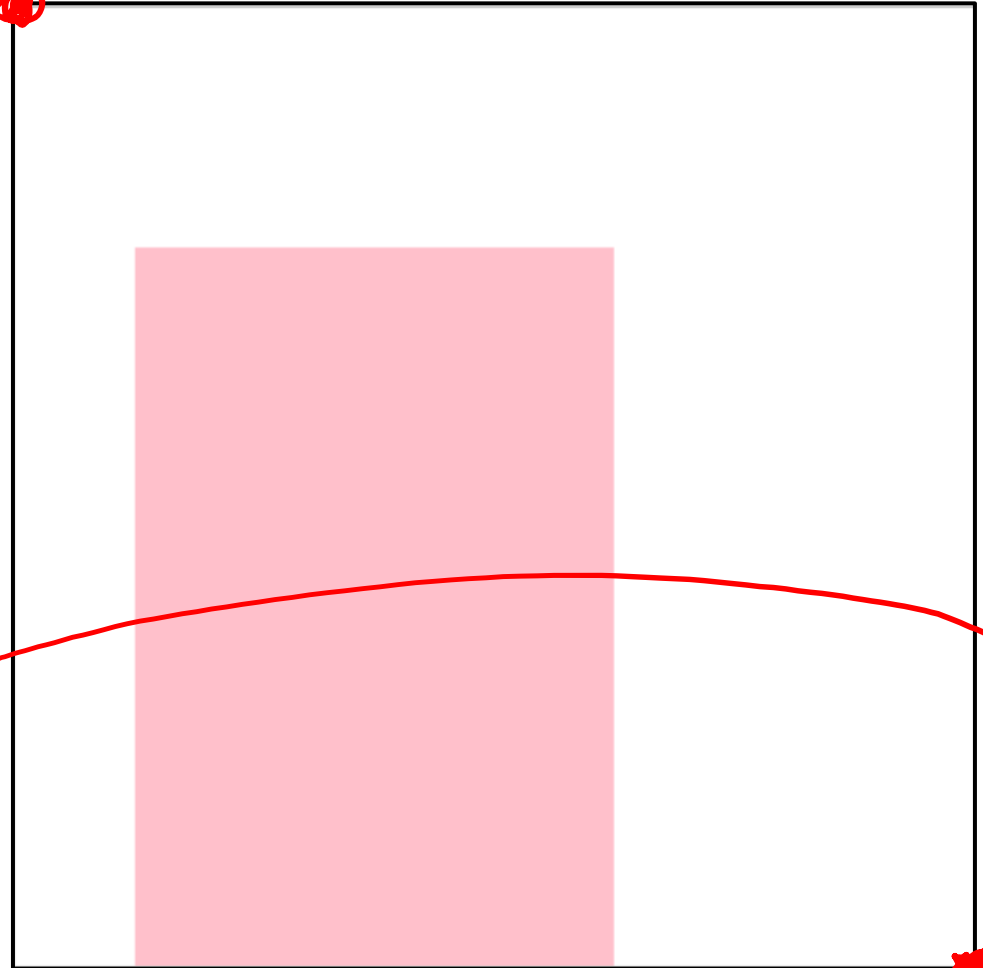


# Canvas and Coordinates for Graphics

```
from cmu_graphics import *  
  
def redrawAll(app):  
    drawRect(50, 100, 200, 300,  
            fill='pink')  
  
def main():  
    runApp()  
  
main()
```

(0,0)

Canvas



app.width

app.height

app.meatX

(400,400)

# Rectangles, Ovals, Lines, and Labels

```
drawRect(x0, y0, width, height)
```

```
drawOval(centerX, centerY, width, height)
```

```
drawLine(x0, y0, x1, y1)
```

```
drawLabel(text, centerX, centerY)
```

# Rectangles, Ovals, Lines, and Labels

```
drawRect(x0, y0, width, height, fill='black', opacity=100,  
border=None, borderWidth=2, rotateAngle=0))
```

```
drawOval(centerX, centerY, width, height, fill='black', opacity=100,  
border=None, borderWidth=2, rotateAngle=0)
```

```
drawLine(x0, y0, x1, y1, fill='black', lineWidth=2, opacity=100,  
dashes=False, arrowStart=False, arrowEnd=False)
```

```
drawLabel(text, centerX, centerY, fill='black', opacity=100,  
border=None, borderWidth=2, rotateAngle=0,  
size=12, font='arial', bold=False, italic=False, align='center')
```