

# Lines

Drawing lines is also essential for 2D graphics

We can easily take this for granted !

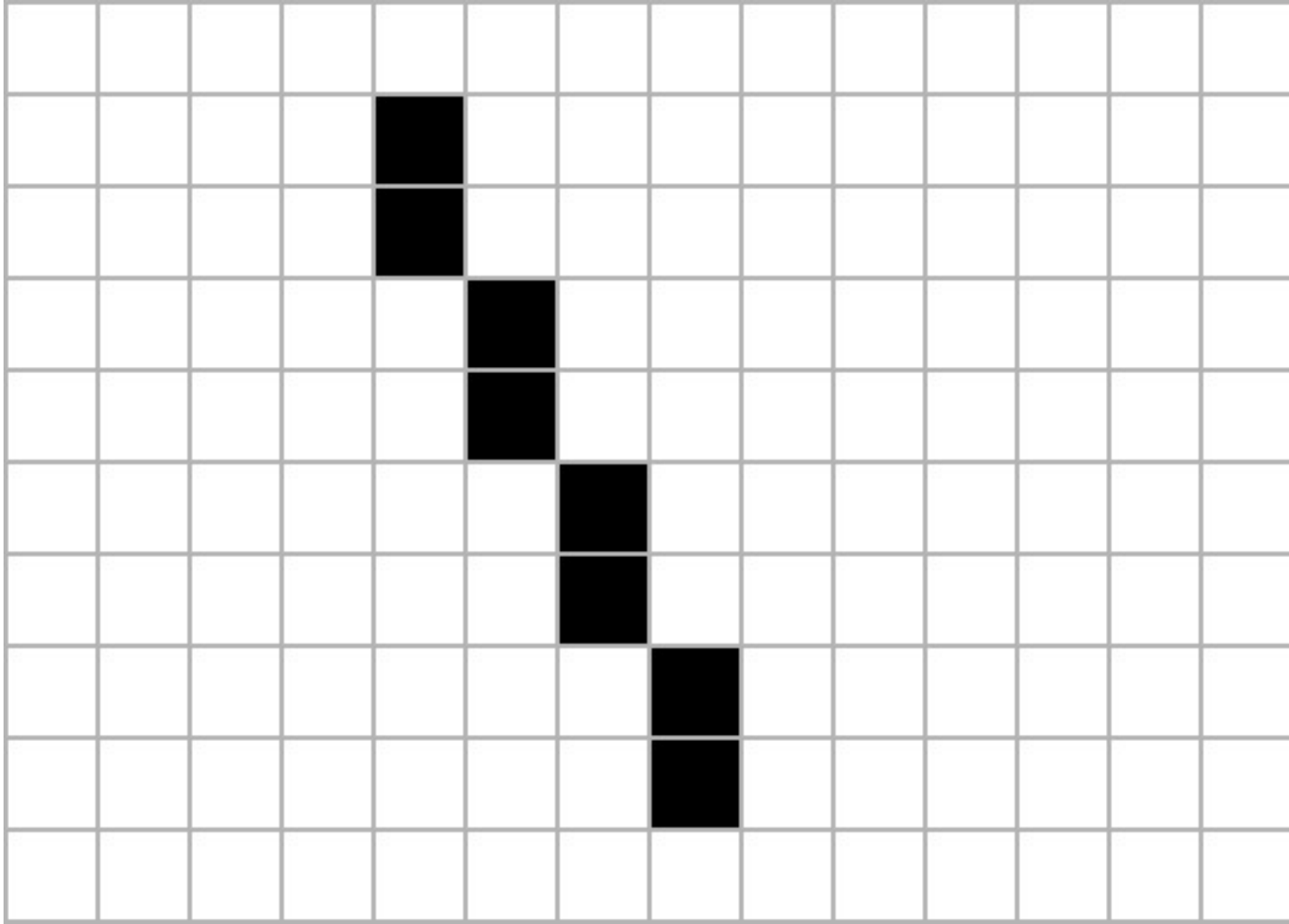
Since most frameworks provide "line" functions

You aren't given a line drawing function for practicals

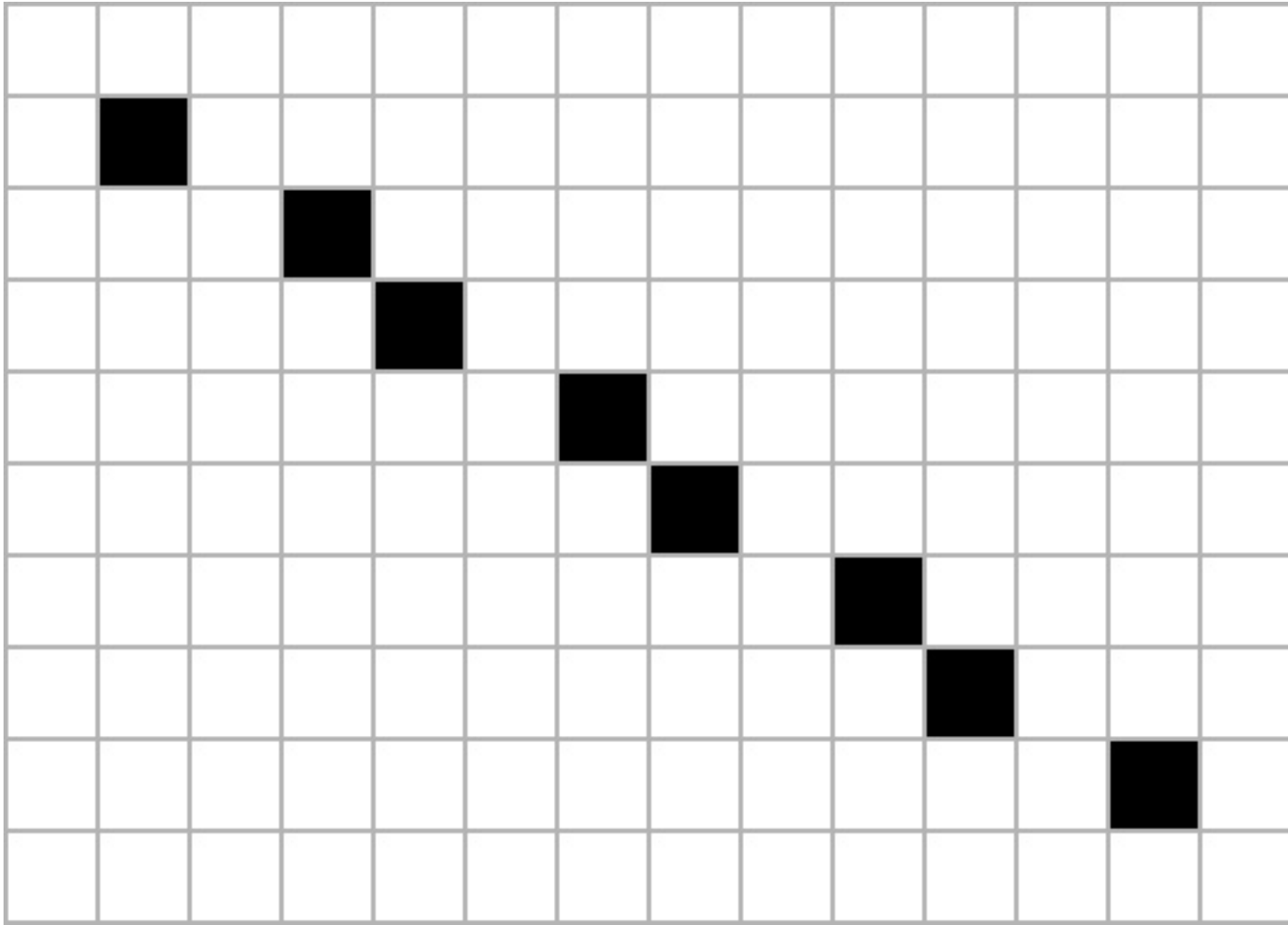
So you will have to write your own ;op

It's a bit more complex than you might think...

We want to achieve something like this...



Whilst avoiding something like this...



# Implementing Line Drawing

Basically a linear sequence of pixels !

We interpolate between "from" and "to" points:

```
float xDiff = toX - fromX;
float yDiff = toY - fromY;
float numberOfSteps = max(abs(xDiff), abs(yDiff));
float xStepSize = xDiff/numberOfSteps;
float yStepSize = yDiff/numberOfSteps;
for (float i=0.0; i<=numberOfSteps; i++) {
    float x = fromX + (xStepSize*i);
    float y = fromY + (yStepSize*i);
    display.setPixelColour(round(x), round(y), BLACK);
}
```