UM EECS 487

Lab 1: Practice Line Rasterization

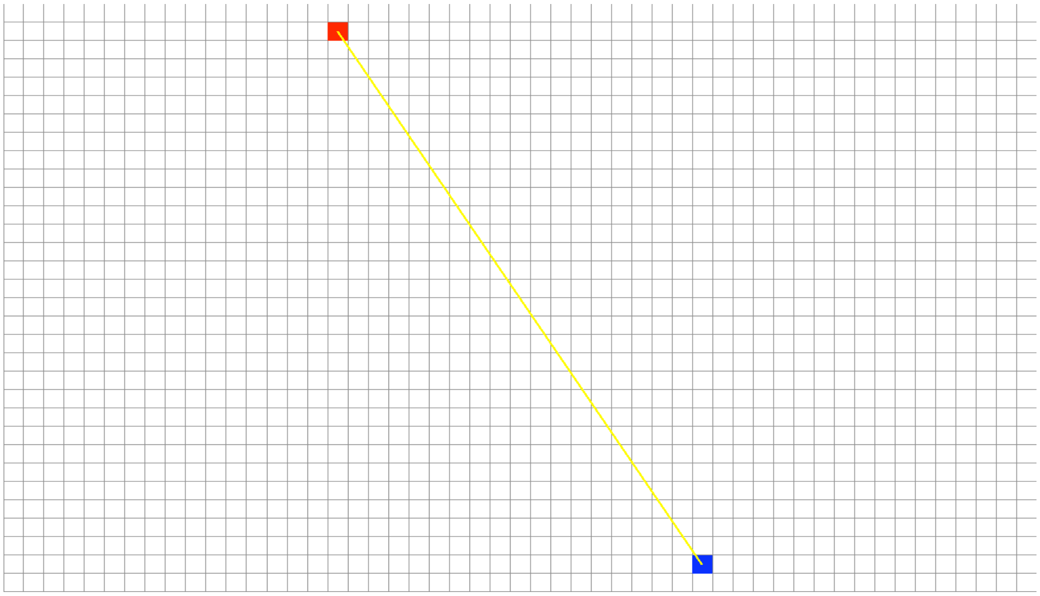

Fig 1: Screenshot showing a coarse grid in which each square represents a virtual pixel. The endpoints of the line (in blue and red) are selected by mouse-clicks.

In this lab we will practice line rasterization on a coarse grid of virtual pixels. The support code provided as part of this lab displays a grid of squares, each representing a pixel. For the purpose of this discussion the term *virtual pixel* will refer to such a square. As shown in Fig 1, the endpoints of the line appear in red and blue when the user clicks on the squares on the grid. Two clicks give you two endpoints and a yellow line connecting them. An additional click resets the screen.

Your task is to implement an algorithm to calculate and *plot* the virtual pixels that form the line between these two endpoints. The virtual pixels must also interpolate the color between the endpoints. You can start with the disp() function that is registered as the display callback function with GLUT. You may add helper functions as you see fit.

The one function that you will absolutely need to use to *plot* a *virtual pixel* with a specified RGB color is:

```
void drawpoint(int x, int y, Glclampf r, Glclampf g, Glclampf b);
```

You are encouraged to examine how this function is implemented.

Learning Objectives:

1. Understand the practical issues that arise when implementing line rasterization/scan conversion.