**Experiment Code Documentation**

**Introduction**

This document captures the experiment implementation details.

**Code Details**

**File Name: Bressenhem.js**

**File Description: JavaScript File**

**Functions:**

1. **Bresenham**

This function is main driving function of algorithm with the help of plotLineLow and plotLineHigh functions generates the set of coordinates of the line to be drawn.

1. **Datapicker**

This function picks up the data from the input box.

1. **previousStep**

This function takes the experiment one step back.

1. **nextStep**

This function takes the experiment one step forward.

1. **plotLineLow**

This is called by the Bresenham function to plot the line with negative slope.

1. **plotLineHigh**

This is called by the Bresenham function to plot the line with positive slope.

1. **generateXY**

This function generates the coordinate system.

1. **frameCreator**

This function fixes the frame size and calls the drawGraph function.

1. **drawGraph**

This function draws the Graph.

1. **drawLine**

This function draws the Line.

1. **Experiment**

This function is the wrapper function which generates the line coordinates and calls the drawGraph and drawLine

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**Other details:**

**Algorithm used in the Experiment**

plotLineLow(x0,y0, x1,y1)

dx = x1 - x0

dy = y1 - y0

yi = 1

if dy < 0

yi = -1

dy = -dy

end if

D = 2\*dy - dx

y = y0

for x from x0 to x1

plot(x,y)

if D > 0

y = y + yi

D = D - 2\*dx

end if

D = D + 2\*dy

plotLineHigh(x0,y0, x1,y1)

dx = x1 - x0

dy = y1 - y0

xi = 1

if dx < 0

xi = -1

dx = -dx

end if

D = 2\*dx - dy

x = x0

for y from y0 to y1

plot(x,y)

if D > 0

x = x + xi

D = D - 2\*dy

end if

D = D + 2\*dx

plotLine(x0,y0, x1,y1)

if abs(y1 - y0) < abs(x1 - x0)

if x0 > x1

plotLineLow(x1, y1, x0, y0)

else

plotLineLow(x0, y0, x1, y1)

end if

else

if y0 > y1

plotLineHigh(x1, y1, x0, y0)

else

plotLineHigh(x0, y0, x1, y1)

end if

end if