

Bresenham's Line Drawing

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<!DOCTYPE html>

<html>

<head>

    <title>Bresenham's Line Drawing</title>

</head>

<body>

    <center>

        <h1>Bresenham's Line Drawing</h1>

        <button onclick="call()" style="top:11% left:55%">Click To start drawing</button></center>

        <center><canvas id="c" width="500" height="500"></canvas></center>

<script type="text/javascript">

    function call(){

        var t1=(window.prompt("Enter x1 y1 point of Traingle ").split(" "));

        var t2=(window.prompt("Enter x2 y2 point of Traingle ").split(" "));

        var t3=(window.prompt("Enter x3 y3 point of Traingle ").split(" "));


        var p1=(window.prompt("Enter x1 y2 point of Line ").split(" "));

        var x1=parseInt(p1[0]);

        var y1=parseInt(p1[1]);


        var p2=(window.prompt("Enter x2 y2 point of Line ").split(" "));

        var x2=parseInt(p2[0]);

        var y2=parseInt(p2[1]);
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canvas=document.getElementById("c");
context=canvas.getContext("2d");
context.beginPath();
context.lineWidth = 4;

context.moveTo(parseInt(t1[0]),parseInt(t1[1]));
context.lineTo(parseInt(t2[0]),parseInt(t2[1]));
context.lineTo(parseInt(t3[0]),parseInt(t3[1]));
context.lineTo(parseInt(t1[0]),parseInt(t1[1]));

context.stroke();
context.closePath();

context.beginPath();
context.lineWidth = 1;

var dy=y2-y1;
var dx=x2-x1;

if(dx==0){
    while(1){
        if (x1==x2 && y1==y2)
            break;
        y1++;
        context.lineTo(x1,y1);
        context.stroke();
    }
}
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else if(dy==0){
    while(1){
        if (x1==x2 && y1==y2){
            break;
        }
        x1++;
        context.lineTo(x1,y1);
        context.stroke();

    }
}
else{
    var m=dy/dx;
    if(m==1){
        while(1){
            if (x1==x2 && y1==y2){
                break;
            }
            x1++;
            y1++;
            context.lineTo(x1,y1);
            context.stroke();

        }
    }
    else if(m<1){
        if(dx<0) //if x is larger than xdest so we have to decrement
            incx=parseInt(-1);
    }
}

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else if(dx>0) //if xdest is larger than x so we have to increment
    incx=parseInt(1);
if(dy<0) //if y is larger than ydest so we have to decrement
    incy=parseInt(-1);
else if(dy>0) //if ydest is larger than y so we have to increment
    incy=parseInt(1);
if(m<0)
    if(dy<0)
        dy=-dy;
    if(dx<0)
        dx=-dx;
console.log(m, '\n' , dx , '\n' , dy);
var pk=(2*dy)-dx;
while(1){
    if(pk < 0){
        if(x1!=x2){
            x1+=incx;
        }
        pk=pk+(2*dy);
    }
    else{ //if (pk>=0)
        if(x1!=x2){
            x1+=incx;
        }
        if(y1!=y2){
            y1+=incy;
        }
        pk=pk+(2*dy)-(2*dx);
    }
}

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    }

    console.log(x1, ' ', y1)
    context.lineTo(x1,y1);
    context.stroke();
    if(x1==x2 && y1==y1){
        break;
    }
}

}

else{
    var pk=(2*dx)-dy;
    while(1){
        if(pk < 0){
            if(y1!=y2){
                y1++;
            }
            pk=pk+(2*dx);
        }

        else{ //if (pk>=0)
            if(x1!=x2){
                x1++;
            }
            if(y1!=y2){
                y1++;
            }
            pk=pk+(2*dx)-(2*dy);
        }

        context.lineTo(x1,y1);
    }
}

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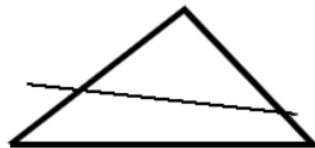
        context.stroke();
        if(x1==x2 && y1==y1){
            break;
        }
    }
}
context.closePath();
}
}

</script>
</body>
</html>

```

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Click To start drawing



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