

Ministry of Higher Education and Scientific Research
University of Anbar
College of Computer Science and Information Technology
Computer Science Department



Computer Graphics 2D

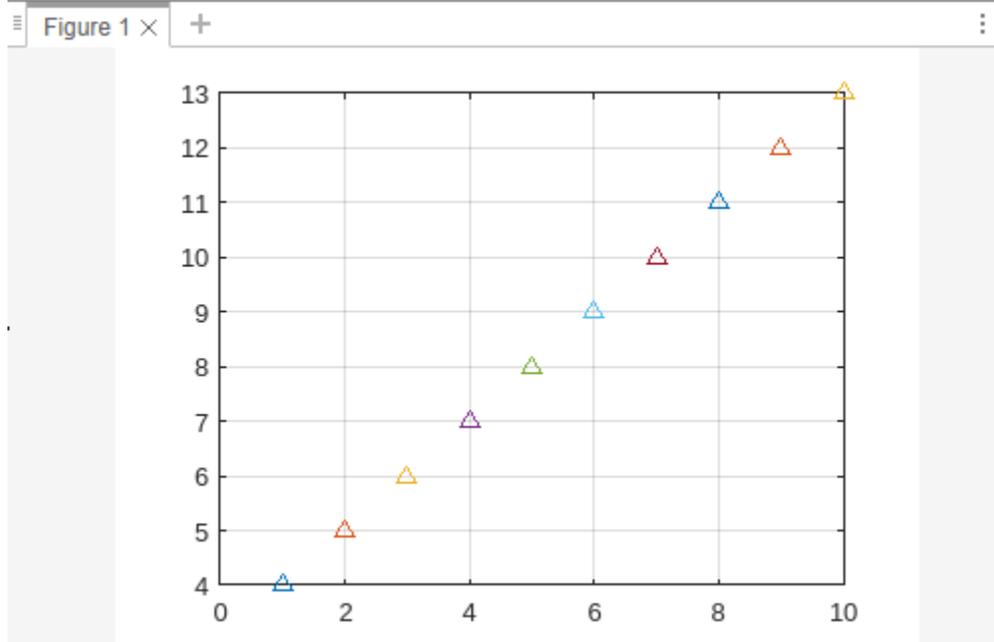
3rd Lab

By:

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Bresenham's Line Drawing Algorithm:

```
x1 = 1;
y1 = 4;
x2 = 10;
y2 = 20;
dx = x2 - x1;
dy = y2 - y1;
e=(dy/dx)-0.5;
x=x1;
y=y1;
for i= 0 : abs(dx)
    plot((x), (y), '^');
    hold on;
    if e > 0
        if y1>y2
            y=y-1;
        else
            y=y+1;
            e=e-1;
        end
    end
    if x1>x2
        x=x-1;
    else
        x=x+1;
    end
    e=e+(dy/dx);
end
grid;
```



```
x1 = 2;
y1 = 1;
x2 = 20;
y2 = 10;
dx = x2 - x1;
dy = y2 - y1;
e=(dy/dx)+ 0.5;
x=x1;
y=y1;
for i= 0 : abs(dx)
    plot(x, y, '*');
    hold on;
    if e < 0
        if y1>y2
            y=y-1;
        else
            y=y+1;
            e=e+1;
        end
    end
    if x1>x2
        x=x-1;
    else
        x=x+1;
    end
    e=e+(dy/dx);
end
grid;
```

