United Technical College, Bharatpur, Chitwan

Computer Graphics

Chapter 3: Two Dimensional Algorithms

Date Assigned: 11th November	**Homework #2**	Date Due: 25th November

1. Digitize a line from (0, 0) to (-6, -6). Use the simple DDA line drawing algorithm.
2. Plot a line between (2,7) and (9,1) using DDA algorithm.
3. Digitize a line from P (3, 6) to (12, 13) using DDA algorithm. Also, digitize this problem with Bresenham's line drawing algorithm. Observe and list out advantages of Bresenham's line drawing algorithm over DDA.
4. Write the algorithm for symmetric DDA. Using the above algorithm find all the coordinates while plotting line segment (4,8) to (9,13)
5. Derive Bresenham's line drawing algorithm for drawing line with $|m|$ <1. What necessary changes do you need to incorporate in it to draw lines with $|m|$ >1?
6. Calculate the raster locations that would be computed by Bresenham's line drawing algorithm while scan converting a line with end points (12, 5) and (18, 12).
7. Rasterize the points of given line end points A(-2,-4) and B(-6,-9) using Bresenham's line drawing algorithm.
8. Draw a line from (20,10) to (30,18) using Bresenham's line drawing algorithm.
9. Digitize the line with endpoints (2,20) and 16, 40) using Bresenham's Line Algorithm.
10. Digitize the line having endpoints (10, 10) and 17, 20) using Bresenham's line drawing algorithm.
11. Digitize the line with endpoints (4,3), (12, 15) using Bresenhem's line drawing algorithm.