Assignment -1 on DDA questions

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Assignment-1

[1] Calculate the points between the starting point (5,5) and ending point (8,15)

Solution: $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{15-5}{8-5} = \frac{10}{3} = 3.3 \quad \therefore \frac{1}{m} = 0.3$

x	y	Round	Pixel
5	5	5	(5, 5)
5.3	6	5	(5, 6)
5.6	7	6	(6, 7)
5.9	8	6	(6, 8)
6.2	9	6	(6, 9)
6.5	10	7	(7, 10)
6.8	11	7	(7, 11)
7.1	12	7	(7, 12)
7.4	13	7	(7, 13)
7.7	14	8	(8, 14)
8	15	8	(8, 15)

[2] Calculate point between (5,7) & ending int (18,10).

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{10-7}{18-5} = 0.2$

x	Y	Round	Pixel
5	7	7	(5, 7)
6	7.2	7	(6, 7)
7	7.4	7	(7, 7)
8	7.6	8	(8, 8)
9	7.8	8	(9, 8)
10	8	8	(10, 8)
11	8.2	8	(11, 8)
12	8.4	8	(12, 8)
13	8.6	9	(13, 9)
14	8.8	9	(14, 9)

x	Y	Round	Pixel
15	8.9	9	(15, 9)
16	9.2	9	(16, 9)
17	9.4	9	(17, 9)
18	9.6	10	(18, 10)

3. Calculate Points betn (1,2) and (11,17)

Solution: $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{17-2}{11-1} = \frac{15}{10} = 1.5$, $\therefore \frac{1}{m} = 0.7$

x	y	Round	Pixel
1	2	1	(1, 2)
1.7	3	2	(2, 3)
2.4	4	2	(2, 4)
3.1	5	3	(3, 5)
3.8	6	4	(4, 6)
4.5	7	5	(5, 7)
5.2	8	5	(5, 8)
5.9	9	6	(6, 9)
6.6	10	7	(7, 10)
7.3	11	7	(7, 11)
8	12	8	(8, 12)

x	y	Round	Pixel
8.7	13	9	(9, 13)
9.4	14	9	(9, 14)
10.1	15	10	(10, 15)
10.8	16	11	(11, 16)
11	17	11	(11, 17)

4. Calculate (4,2) and (11,17)

Solution: $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{17-2}{11-4} = \frac{15}{7} = 2.14$ $\frac{1}{m} = 0.46$

x	y	Round	Pixel
4	2	4	(4, 2)
4.46	3	4	(4, 3)
4.92	4	5	(5, 4)
5.38	5	5	(5, 5)
5.84	6	6	(6, 6)
6.76	7	7	(7, 7)
7.22	8	7	(7, 8)
7.68	9	8	(8, 9)
8.14	10	8	(8, 10)

x	y	Round	Pixel
8.6	11	9	(9, 11)
9.06	12	9	(9, 12)
9.52	13	10	(10, 13)
9.98	14	10	(10, 14)
10.44	15	10	(10, 15)
10.9	16	11	(11, 16)
11.36	17	11	(11, 17)

Calculate (2, 2) and (6, 6).

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{6-2}{6-2} = \frac{4}{4} = 1$.

x	y	Round	Pixel
2	2		(2, 2)
3	3		(3, 3)
4	4		(4, 4)
5	5		(5, 5)
6	6		(6, 6)