Date:

Assignment-1

UWU/CST/18/022 - H.G.D.A.P Gunasekara

Date:

1) In mid Point circle drawing Alogorithe we are calculating a deasion Parametters accoding to the Procedure.
In theire every iteration x values increses from 1 and y we can see two values as y and y-1.
In theire we can calculate thare two Parameters.

$$P_k = 1 - r$$

$$P_{k+1} = P_k + 2(x_{k+1}) + (y_{k+1}^2 - y_k^2) - (y_{k+1} - y_k) + 1$$

if $P_k \geq 0$,

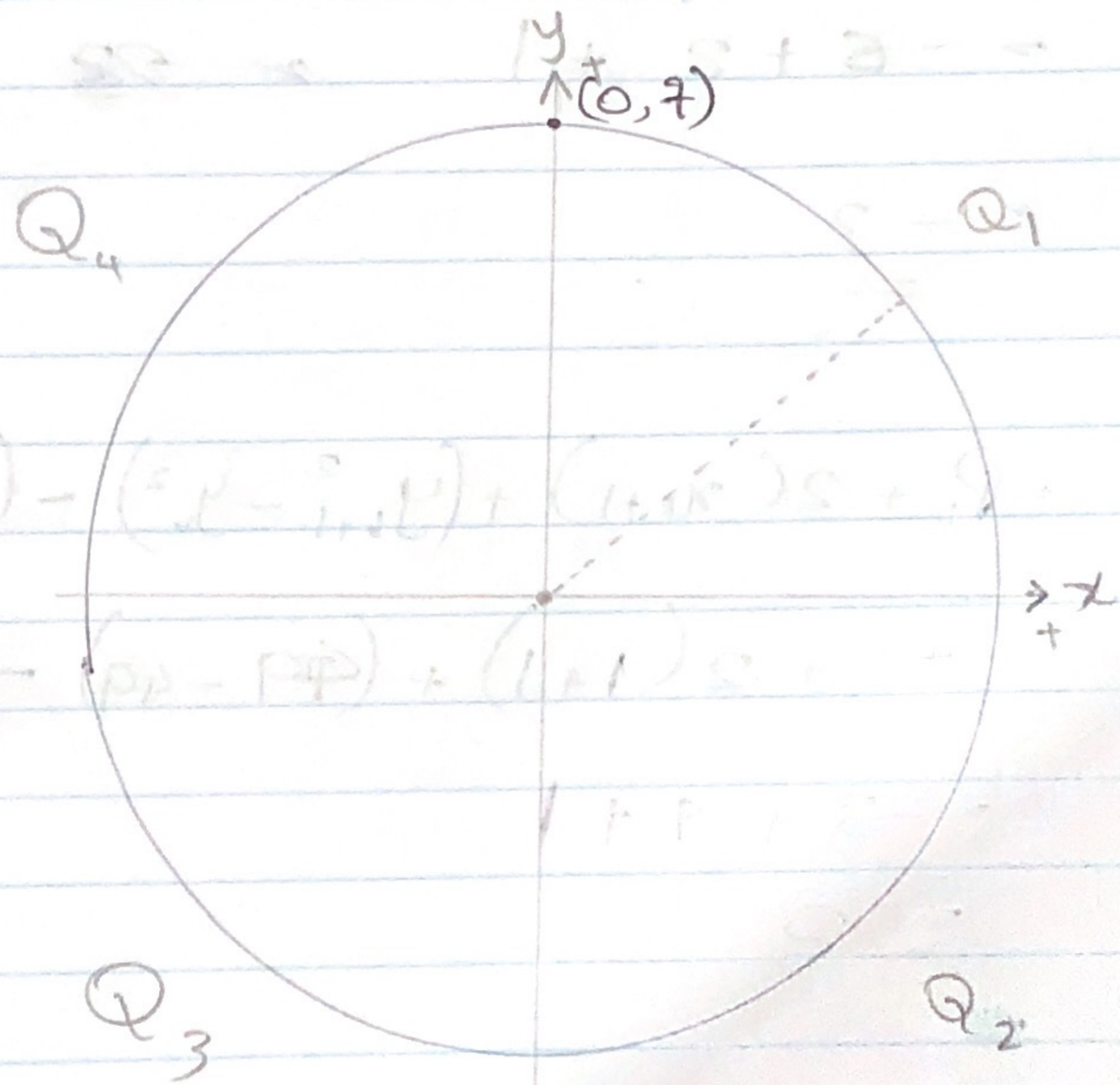
$$x_{k+1} = x_k + 1$$

$$y_{k+1} = y_k - 1$$

if $P_k < 0$,

$$x_{k+1} = x_k + 1$$

$$y_{k+1} = y_k$$



In this,

$$r = 7$$

In this Radius = 7

There for starting point of $Q_1 = (0,7)$

∴ Now we find P_k,

$P_k = 1 - r$

$= 1 - 7 \quad = -6$

$P_{k+1} = P_{0k} + 2(0+1) + (-7)^2 - (-7)^2 - (-7) - (7)) + 1$

$= -6 + 2(1) + (49 - 49) - (7 - 7) + 1$

$= -6 + 2 + 1 \quad = -3$

$= -3$

$P_{k+1} = P_k + 2(x_{k+1}) + (y_{k+1}^2 - y_k^2) - (y_{k+1} - y_k) + 1$

$= -3 + 2(1+1) + (49 - 49) - (7 - 7) + 1$

$= -3 + 4 + 1$

$= 2$

$$P_{k+1} = 2 + 2(2+1) + (36-49) - (6-7) + 1$$

$$= 2 + 6 + (-13) + 1 + 1$$

$$= -3$$

$$P_{k+1} = -3 + 2(3+1) + (36-36) - (6-6) + 1$$

$$= -3 + 8 + 1$$

$$= 6$$

$$P_{k+1} = 6 + 2(4+1) + (25-36) - (25-6) + 1$$

$$= 6 + 10 + (-11) + 1 + 1$$

$$= 7$$

x_k	y_k	P_k	x_{k+1}	y_{k+1}	
0	7	-6	1	7	$x < y$
1	7	-3	2	7	$x < y$
2	7	2	3	6	$x < y$
3	6	-3	4	6	$x < y$
4	6	6	5	5	$x = y$ / $x > y$
5	5	7	6	4	

This is the stopping Point of the O_1 and starting Point of the O_2.

Date.....

Q_1	Q_2	Q_3	Q_4
	(x, y)	$(x, -y)$	$(-x, -y)$	$(-x, y)$
(0, 7)	(0, -7)	(0, -7)	(0, 7)
(1, 7)	(1, -7)	(-1, -7)	(-1, 7)
(2, 7)	(2, -7)	(-2, -7)	(-2, 7)
(3, 6)	(3, -6)	(-3, -6)	(-3, 6)
(4, 6)	(4, -6)	(-4, -6)	(-4, 6)
(5, 5)	(5, -5)	(-5, -5)	(-5, 5)
(6, 4)	(6, -4)	(-6, -4)	(-6, 4)
(6, 3)	(6, -3)	(-6, -3)	(-6, 3)
(7, 2)	(7, -2)	(-7, -2)	(-7, 2)
(7, 1)	(7, -1)	(-7, -1)	(-7, 1)
(7, 0)	(7, 0)	(-7, 0)	(-7, 0)