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Q2 Algorithm of Midpoint circle.

Step - 01 :- Assign the starting point coordinates (X_0, Y_0) as.

- $X_0 = 0$
- $Y_0 = R$

step - 02 :- Calculate the value of initial desicion Parameter P_0 as -

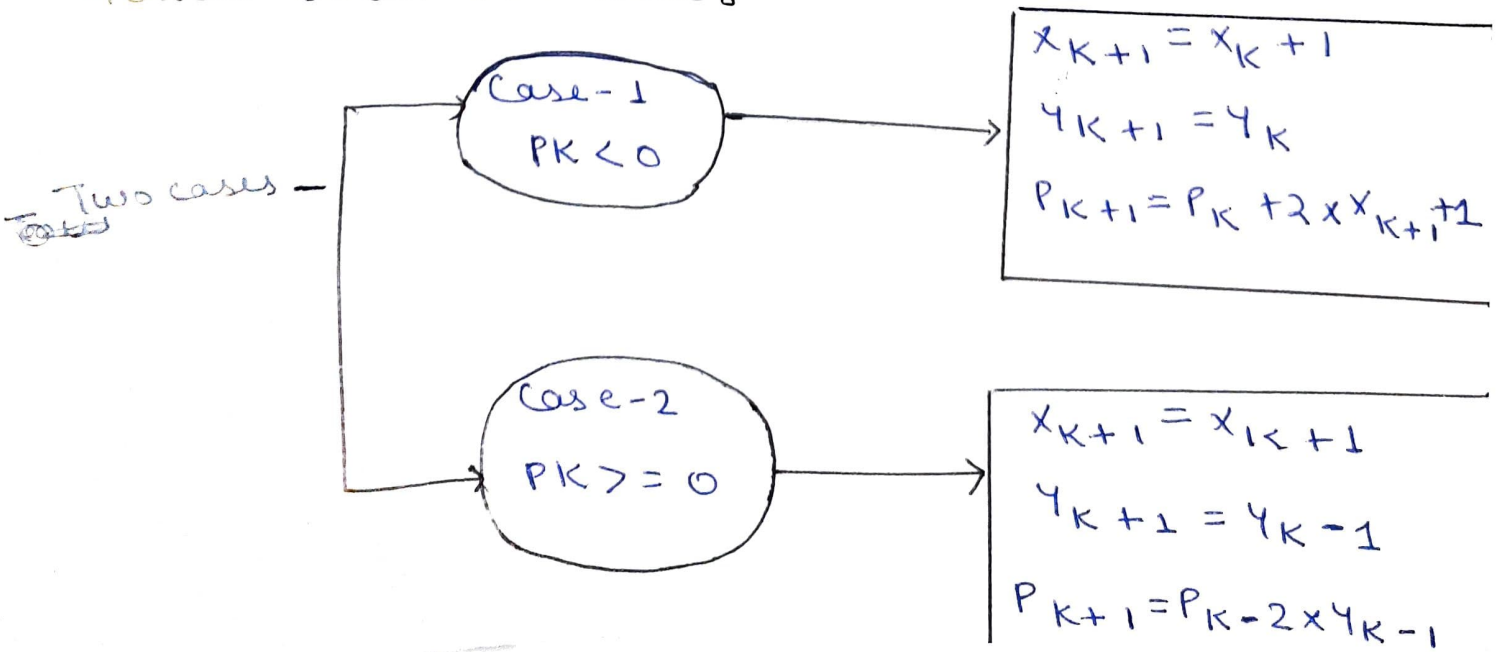
$$P_0 = 1 - R.$$

step - 03 :-

Suppose the current point is (X_K, Y_K) and the next point is (X_{K+1}, Y_{K+1}).

find the next point of the first octant depending on the value of desicion parameter P_K.

follow below Two cases :-



step-04.

If the given centre point (x_0, y_0) is not $(0, 0)$ then,

- $x_{plot} = x_c + x_0$
- $y_{plot} = y_c + y_0$.

Here (x_c, y_c) denotes current value of x and y coordinates.

step-05. Keep repeating step 03 and step-04 until $x_{plot} >= y_{plot}$.

step-06:-

step-05 generates all the points for one octant To find the points for other seven octants, follow the eight symmetry property of circle.

Garima