Assignment - 8

GoodLuck | Page No.
Date

Problem statement :-

Write a C++ program to draw 4x4 chessboard rotated 45°, ~~create~~ write horizontal axis. Use Bresenham's algorithm to draw all the lines use seed fill algorithm to fill the black squares.

Objectives :-

To understand basic rotation transformation & seed fill algorithm for the chessboard.

Outcome :-

We will be able to do rotation & fill the chessboard with seed fill algorithm.

S/W requirements :-

OS linux 64 bit,

Qt creator.

Theory :-

4x4 chessboard. We draw 5 horizontal & 5 vertical lines forming 16 small squares & 1 big square Alternately filled with white & black.

2020/4/20 19:57

Date

2020/4/20 19:57

~~Algorithm : construction~~

Algorithm :-

Rotation :-

{

Float A[max], B[max], C[max], D[max]

Float t1 = π/180 ;

for i=0 to 10

A[i] = (x[i]-200) cos45 - (y[i]-200) sin45

B[i] = (x2[i] - 200) sin45 + (y[i]-200) cos45.

C[i] = (x2[i]-200) cos45 + (y2[i]-200) sin45

D[i] = (x2[i] - 200) sin45 - (y2[i]-200) cos45.

for i=0 to 10

A[i] += 200

B[i] += 200

C[i] += 200

D[i] += 200

for i=0 to 10

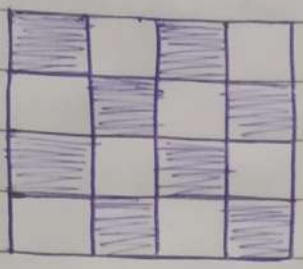
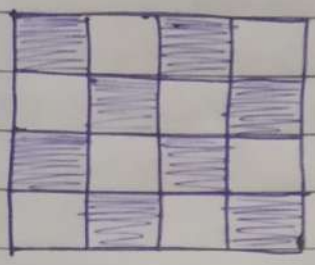
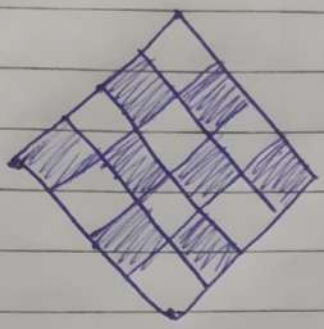
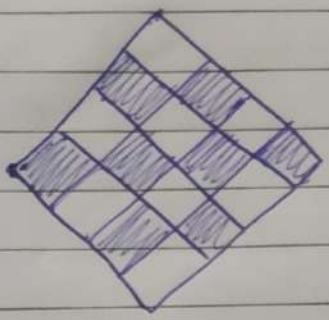
~~to~~ bresenham (A[i], B[i], C[i], D[i]);

}

Date

2020/4/20 19:57

Test cases :-

I/p	O/p	Expected o/p	Results
1] Draw chessboard & fill			Success
2] Rotate by 45° & fill alternate squares			Success

Conclusion :-

Successfully implemented the algorithm to draw the chessboard & rotated it & filled it by seedfill algorithm.