**CGG ASSIGNMENT 3**

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Block B1

Topic: Program to draw Audi Symbol using Bresenham Circle Drawing Algorithm

Code:

#include <stdio.h>

#include <math.h>

#include<GL/gl.h>

#include <GL/glut.h>

void plot\_point(int x, int y,int xc, int yc)

{

glBegin(GL\_POINTS);

glVertex2i(xc+x, yc+y);

glVertex2i(xc+x, yc-y);

glVertex2i(xc+y, yc+x);

glVertex2i(xc+y, yc-x);

glVertex2i(xc-x, yc-y);

glVertex2i(xc-y, yc-x);

glVertex2i(xc-x, yc+y);

glVertex2i(xc-y, yc+x);

glEnd();

}

void bresenham\_circle(int xc1,int yc1, int r)

{

int x=0,y=r;

float pk=3-2\*r;

plot\_point(x,y,xc1,yc1);

int k;

while(x <= y)

{

x = x + 1;

if(pk < 0)

pk = pk + 4\*x+6;

else

{

y = y - 1;

pk = pk + 4\*(x - y) + 10;

}

plot\_point(x,y,xc1,yc1);

}

glFlush();

}

void circles()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glColor3f(1.0,1.0,1.0);

bresenham\_circle(0,0,200);

bresenham\_circle(0+300,0,200);

bresenham\_circle(0+3\*200,0,200);

bresenham\_circle(0-300,0,200);

}

void Init()

{

glClearColor(0.0,0.0,0.0,0);

gluOrtho2D(-1000,1000,-1000,1000);

}

int main(int argc, char \*\*argv)

{

plot\_point(0,200,0,0);

glutInit(&argc,argv);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowPosition(0,0);

glutInitWindowSize(500,500);

glutCreateWindow("Using bresenham's algorithm for circle pattern");

Init();

glutDisplayFunc(circles);

glutMainLoop();

return 0;

}

Output:

