2D transformation:

#include<stdio.h>

#include<conio.h>

#include<graphics.h>

#include<math.h>

void main()

{

int gd,gm,c,ang,t,tx,ty,Sx,Sy,x1,y1,x2,y2,x3,y3,nx1,nx2,nx3,ny1,ny2,ny3;

float f=3.14;

detectgraph(&gd,&gm);

initgraph(&gd,&gm,"C:\\TC\\BGI");

clrscr();

printf("enter the values for x1,y1,x2,y2,x3,y3:");

scanf("%d%d%d%d%d%d",&x1,&y1,&x2,&y2,&x3,&y3);

line(x1,y1,x2,y2);

line(x2,y2,x3,y3);

line(x3,y3,x1,y1);

do

{

printf("\n1.Translation\n2.Rotation\n3.Scaling\nEnter choice:");

scanf("%d",&c);

switch(c)

{

case 1:

printf("\nEnter tx and ty:");

scanf("%d%d",&tx,&ty);

nx1=x1+tx;

nx2=x2+tx;

nx3=x3+tx;

ny1=y1+ty;

ny2=y2+ty;

ny3=y3+ty;

line(nx1,ny1,nx2,ny2);

line(nx2,ny2,nx3,ny3);

line(nx3,ny3,nx1,ny1);

getch();

case 2:

printf("\nEnter the angle:");

scanf("%d",&ang);

t=3.14\*(ang/180);

nx1=abs(x1\*cos(t)-y1\*sin(t));

nx2=abs(x2\*cos(t)-y2\*sin(t));

nx3=abs(x3\*cos(t)-y3\*sin(t));

ny1=abs(x1\*sin(t)+y1\*cos(t));

ny2=abs(x2\*sin(t)+y2\*cos(t));

ny3=abs(x3\*sin(t)+y3\*cos(t));

line(nx1,ny1,nx2,ny2);

line(nx2,ny2,nx3,ny3);

line(nx3,ny3,nx1,ny1);

getch();

case 3:

printf("\nEnter Sx and Sy:");

scanf("%d%d",&Sx,&Sy);

nx1=x1\*Sx;

nx2=x2\*Sx;

nx3=x3\*Sx;

ny1=y1\*Sy;

ny2=y2\*Sy;

ny3=y3\*Sy;

line(nx1,ny1,nx2,ny2);

line(nx2,ny2,nx3,ny3);

line(nx3,ny3,nx1,ny1);

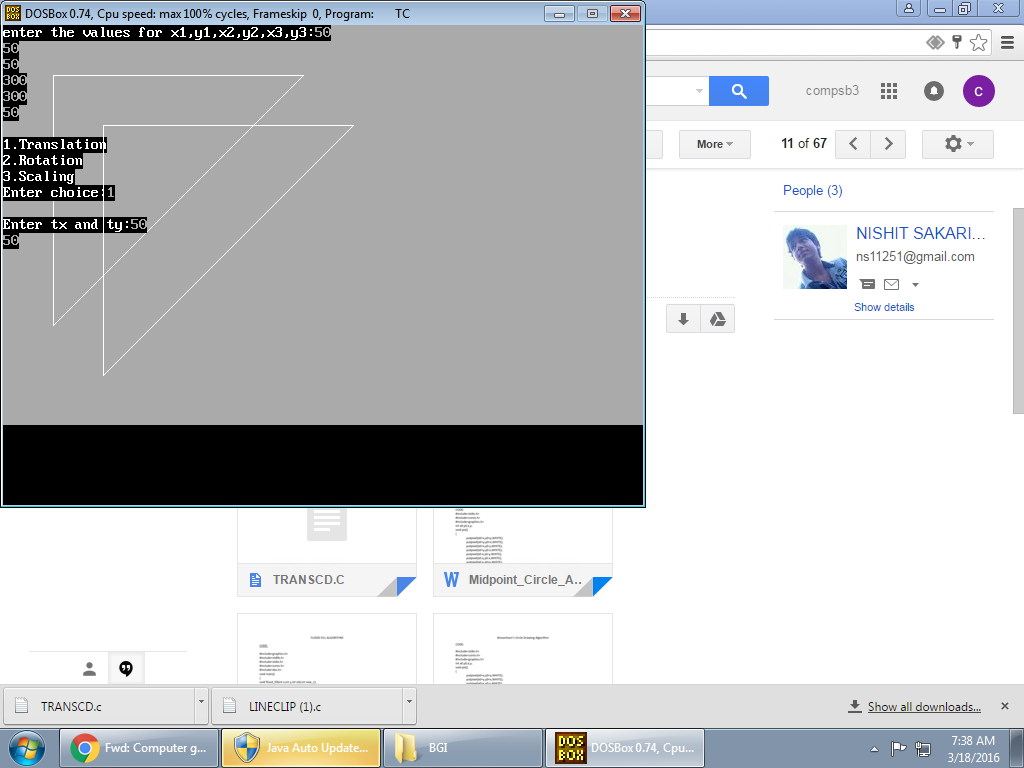
getch();

}

}while(c!=4);

getch();

}

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