1. Draw a line using DDA algorithm

a) A(100,50) to B(100,250)

b) A(100,50) to B(200,50)

c) A(100,200) to B(200,390)

d) A(100,200) to B(190,500)

#include<iostream.h>

#include<conio.h>

#include<graphics.h>

#include<dos.h>

#include<math.h>

void main()

{

int gd = DETECT, gm;

initgraph(&gd,&gm,"");

int x1=200,y1=300,x2=300,y2=200,steps;

float dx,dy,x,y;

if(abs(x2-x1)>=abs(y2-y1))

steps=abs(x2-x1);

else

steps=abs(y2-y2);

dx=(x2-x1)/(float)steps;

dy=(y2-y1)/(float)steps;

x=x1+0.5;

y=y1+0.5;

putpixel(x,y,WHITE);

for(int i=1;i<=steps;i++)

{

x=x+dx;

y=y+dy;

delay(100);

putpixel(x,y,WHITE);

}

getch();

}

2. Draw a line using Bresenhems algorithm for above 4 cases

#include<stdio.h>

#include<conio.h>

#include<graphics.h>

#include<math.h>

#include<dos.h>

void main()

{

intgd=DETECT,gm;

intdx,dy,p,end;

float x1,x2,y1,y2,x,y;

initgraph(&gd,&gm,"c:\\tc\\bgi");

printf("Enter value of x1:");

scanf("%f",&x1);

printf("Enter value of y1:");

scanf("%f",&y1);

printf("Enter value of x2:");

scanf("%f",&x2);

printf("Enter value of y2:");

scanf("%f",&y2);

dx=abs(x1-x2);

dy=abs(y1-y2);

p=2\*dy-dx;

if(x1>x2)

{

x=x2;

y=y2;

end=x1;

}

else

{

x=x1;

y=y1;

end=x2;

}

putpixel(x,y,3);

while(x<end)

{

x=x+1;

if(p<0)

{

p=p+2\*dy;

}

else

{

y=y+1;

p=p+2\*(dy-dx);

}

putpixel(x,y,3);

}

getch();

closegraph();

}

4. Draw a circle using Bresenhems algorithm

#include<iostream.h>

#include<graphics.h>

#include<dos.h>

#include<conio.h>

int main()

{

int gd=DETECT,gm;

initgraph(&gd,&gm,"");

int x,y,d;

int r,h,k;

cout<<"enter the radius of circle";

cin>>r;

cout<<"enter the coordinates of center";

cin>>h>>k;

x=r;

y=0;

d=3-(2\*r);

while(x>=y)

{

putpixel(x+h,y+k,WHITE);

putpixel(y+h,x+k,WHITE);

putpixel(-y+h,x+k,WHITE);

putpixel(-x+h,y+k,WHITE);

putpixel(-x+h,-y+k,WHITE);

putpixel(-y+h,-x+k,WHITE);

putpixel(y+h,-x+k,WHITE);

putpixel(x+h,-y+k,WHITE);

if(d<=0)

{

d+=(4\*y) + 6;

y++;

}

else

{

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

x--;

y++;

}

delay(50);

}

getch();

return(0);

}

6. Draw Ellipse

#include<stdio.h>

#include<graphics.h>

#include<conio.h>

int main(){

   int gd = DETECT,gm;

   int x ,y;

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

   /\* Initialize center of ellipse with center of screen \*/

   x = getmaxx()/2;

   y = getmaxy()/2;

   outtextxy(x-100, 50, "ELLIPSE Using Graphics in C");

   /\* Draw ellipse on screen \*/

   ellipse(x, y, 0, 360, 120, 60);

   getch();

   closegraph();

   return 0;

}

7. Translate a triangle.

#include<stdio.h>

#include<conio.h>

#include<graphics.h>

#include<process.h>

#include<math.h>

int x1,y1,x2,y2,x3,y3,mx,my;

void draw();

void tri();

void main()

{

    int gd=DETECT,gm;

    int c;

    initgraph(&gd,&gm,"..\\bgi ");

    printf("Enter the 1st point for the

triangle:");

    scanf("%d%d",&x1,&y1);

    printf("Enter the 2nd point for the

triangle:");

    scanf("%d%d",&x2,&y2);

    printf("Enter the 3rd point for the

triangle:");

    scanf("%d%d",&x3,&y3);

    cleardevice();

    draw();

    getch();

    tri();

    getch();

}

void draw()

{

    line(x1,y1,x2,y2);

    line(x2,y2,x3,y3);

    line(x3,y3,x1,y1);

}

void tri()

{

    int x,y,a1,a2,a3,b1,b2,b3;

    printf("Enter the Transaction coordinates");

    scanf("%d%d",&x,&y);

    cleardevice();

    a1=x1+x;

    b1=y1+y;

    a2=x2+x;

    b2=y2+y;

    a3=x3+x;

    b3=y3+y;

    line(a1,b1,a2,b2);

    line(a2,b2,a3,b3);

    line(a3,b3,a1,b1);

}