Practical 1a 1:

Code:

```
import turtle
turtle.forward(100)
turtle.done()
```

output:

practical a2:

code:

```
import turtle
turtle.backward(100)
turtle.done()
```

output:

practical a3:

code:

```
import turtle
turtle.left(90)
turtle.forward(100)
turtle.done()
```

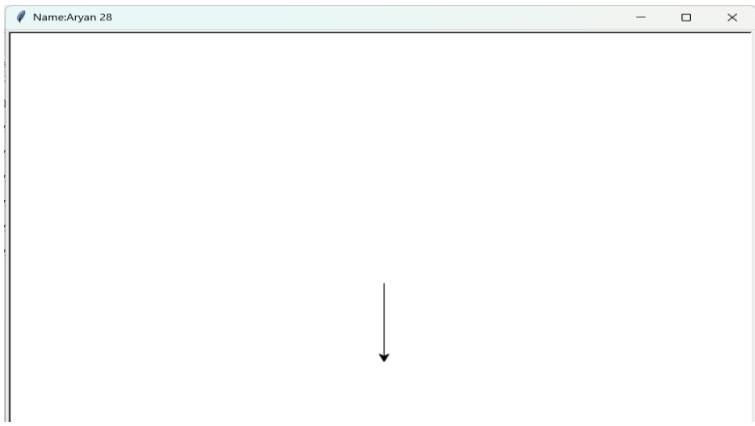
output:

practical a4:

code:

```
import turtle
turtle.title("Name:Aryan 28")
turtle.right(90)
turtle.forward(100)
turtle.done()
```

output:



practical a5:

code:

```
import turtle
turtle.title("Name:Aryan 28")
turtle.penup()
turtle.forward(100)
turtle.done()
```

output:

practical a6:

code:

```
import turtle
turtle.pendown()
turtle.forward(100)
turtle.done()
```

output:

practical a7:

code:

```
import turtle
turtle.color("red")
turtle.forward(100)
turtle.done()
```

output:

practical a8:

code:

```
import turtle
turtle.write("hello world!")
turtle.done()
```

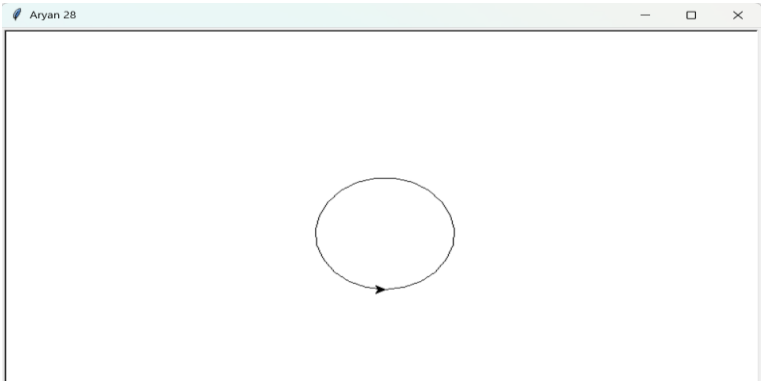
output:

practical a9:

code:

```
import turtle
turtle.title("Aryan 28")
turtle.circle(70)
turtle.done()
```

output:

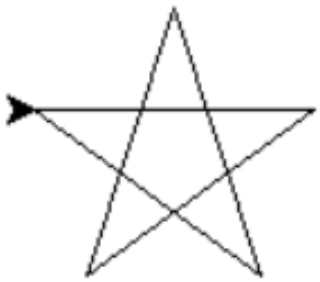


practical a10:

code:

```
import turtle
turtle.speed(1)
for i in range(5):
  turtle.forward(100)
  turtle.right(144)
turtle.done()
```

output:

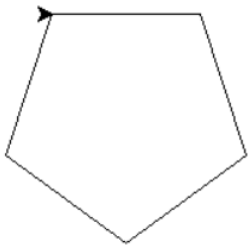


practical a11:

code:

```
import turtle
turtle.speed(1)
for i in range(5):
  turtle.forward(100)
  turtle.right(72)
turtle.done()
```

output:

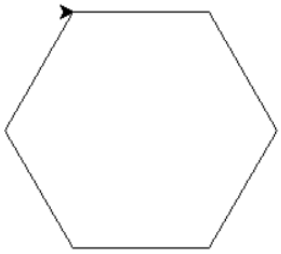


practical a12:

code:

```
import turtle
turtle.speed(1)
for i in range(6):
  turtle.forward(100)
  turtle.right(60)
turtle.done()
```

output:

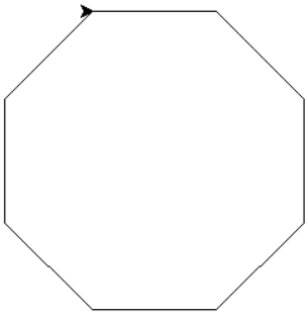


practical a13:

code:

```
import turtle
turtle.speed(1)
for i in range(8):
  turtle.forward(100)
  turtle.right(45)
turtle.done()
```

output:

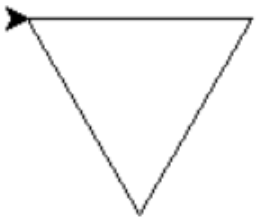


practical a14:

code:

```
import turtle
turtle.speed(1)
for i in range(3):
  turtle.forward(100)
  turtle.right(120)
turtle.done()
```

output:

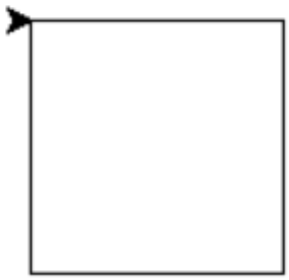


practical a15:

code:

```
import turtle
turtle.title("Aryan 28")
turtle.speed(1)
for i in range(4):
  turtle.forward(100)
  turtle.right(90)
turtle.done()
```

output:



practical a16:

code:

```
import turtle
turtle.speed(1)
for i in range(2):
  turtle.forward(100)
  turtle.right(90)
  turtle.forward(50)
  turtle.right(90)
turtle.done()
```

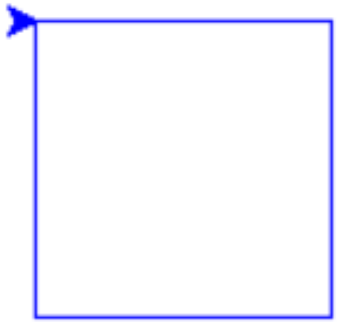
output:

practical a17:

code:

```
import turtle
turtle.color("blue")
turtle.begin_fill()
for i in range(4):
    turtle.forward(100)
    turtle.right(90)
turtle.done()
```

output:

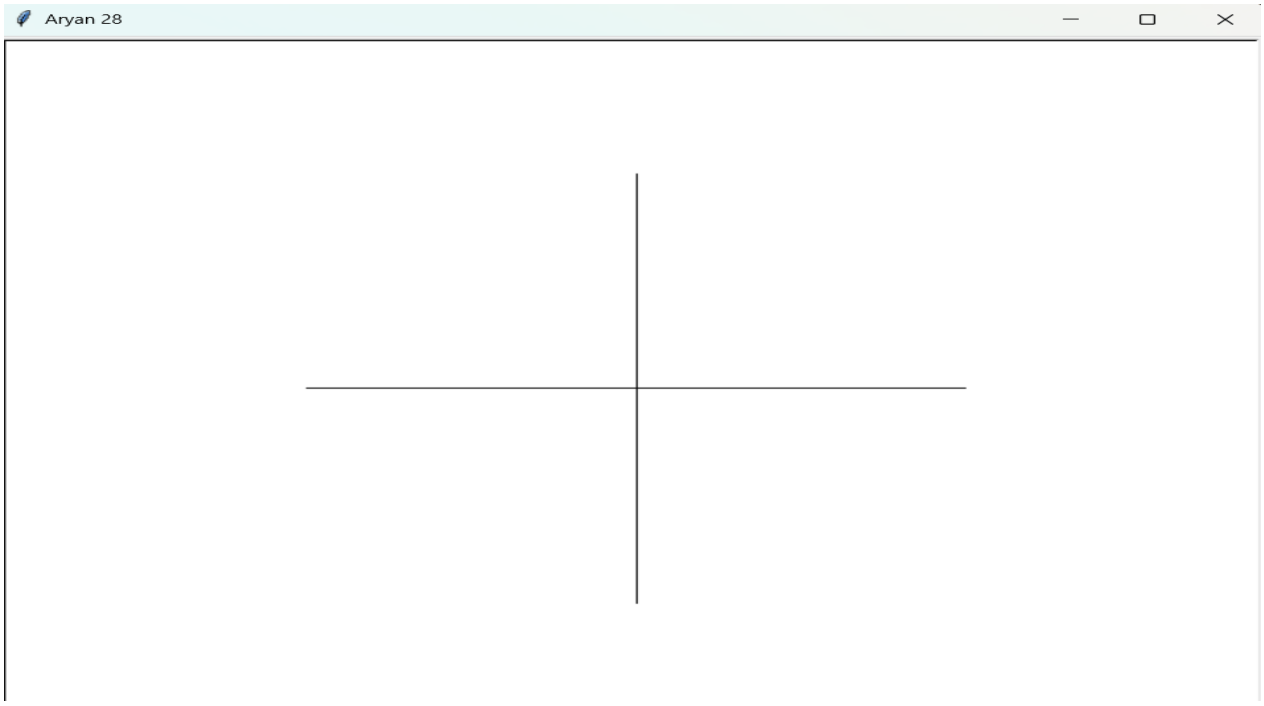


Practical 1b:

Code:

```
import turtle
turtle.title("Aryan 28")
axis = turtle.Turtle()
axis.speed(0)
axis.hideturtle()
axis.penup()
axis.goto(-200, 0)
axis.pendown()
axis.goto(200, 0)
axis.penup()
axis.goto(0, -200)
axis.pendown()
axis.goto(0, 200)
turtle.done()
```

output:



Practical 1c:

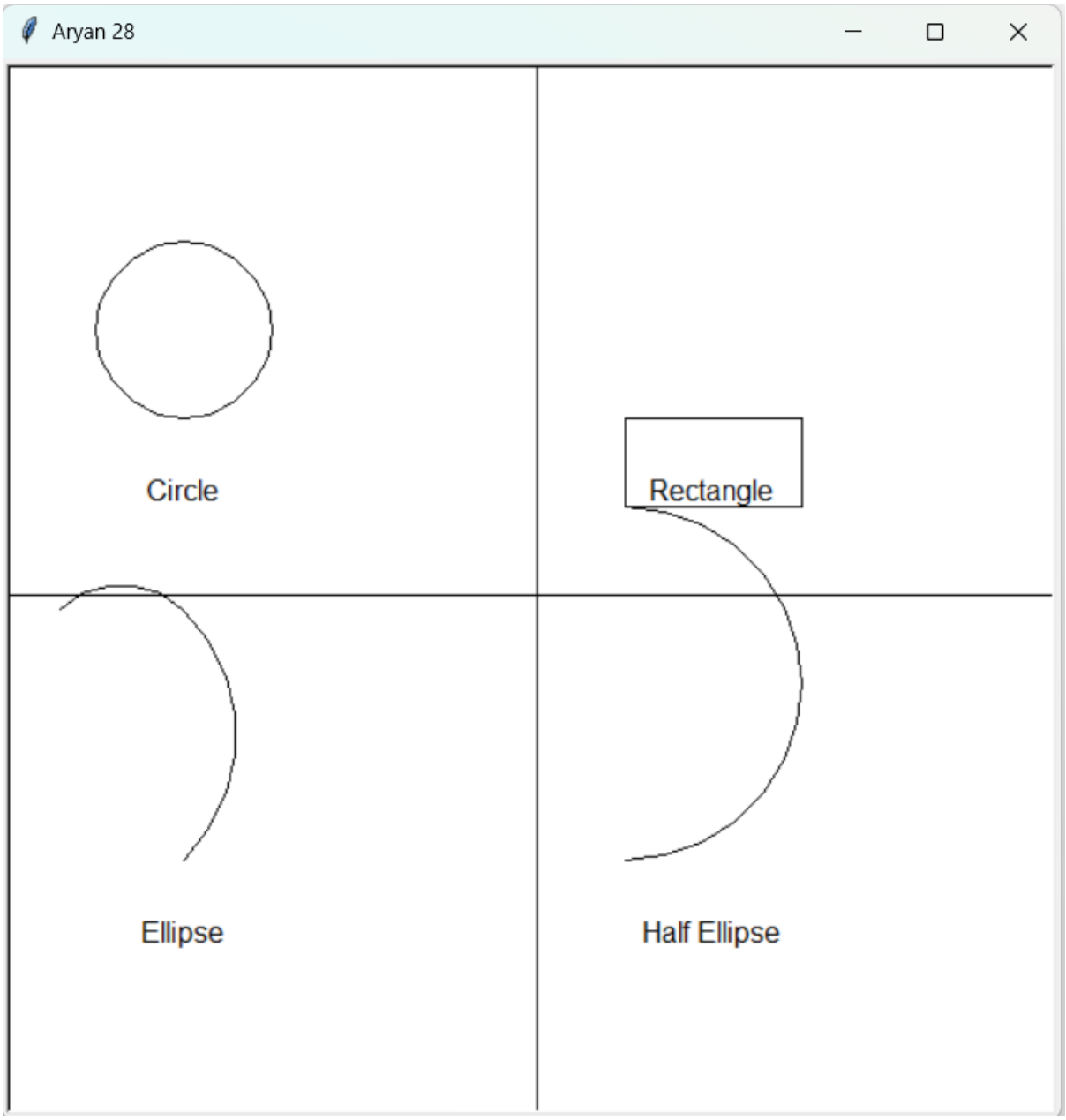
Code:

```
import turtle
turtle.title("Aryan 28")
screen = turtle.Screen()
screen.setup(width=600, height=600)
# Create a turtle object
pen = turtle.Turtle()
pen.speed(3)
# Draw vertical line
pen.penup()
pen.goto(0, 300)
pen.pendown()
pen.setheading(270)  # Point downwards
pen.forward(600)
# Draw horizontal line
pen.penup()
pen.goto(-300, 0)
pen.pendown()
pen.setheading(0)  # Point right
pen.forward(600)
# Draw circle
pen.penup()
pen.goto(-200, 100)
pen.pendown()
pen.circle(50)
pen.penup()
pen.goto(-200, 50)
```

```
pen.write("Circle", align="center", font=("Arial", 12, "normal"))
# Draw rectangle
pen.penup()
pen.goto(50, 100)
pen.pendown()
for _ in range(2):
    pen.forward(100)  # Width
    pen.right(90)
    pen.forward(50)  # Height
    pen.right(90)
pen.penup()
pen.goto(100, 50)
pen.write("Rectangle", align="center", font=("Arial", 12, "normal"))
# Draw half-circle (semi-circle)
pen.penup()
pen.goto(-200, -150)
pen.pendown()
pen.setheading(45)
pen.circle(100, 90)  # First quarter
pen.circle(50, 90)  # Second quarter
pen.penup()
pen.goto(-200, -200)
pen.write("Ellipse", align="center", font=("Arial", 12, "normal"))
# Draw half-ellipse
pen.penup()
pen.goto(50, -150)
pen.pendown()
pen.setheading(0)
```

```
pen.circle(100, 180)
pen.penup()
pen.goto(100, -200)
pen.write("Half Ellipse", align="center", font=("Arial", 12, "normal"))
# Hide the turtle
pen.hideturtle()
# Complete the drawing
turtle.done()
```

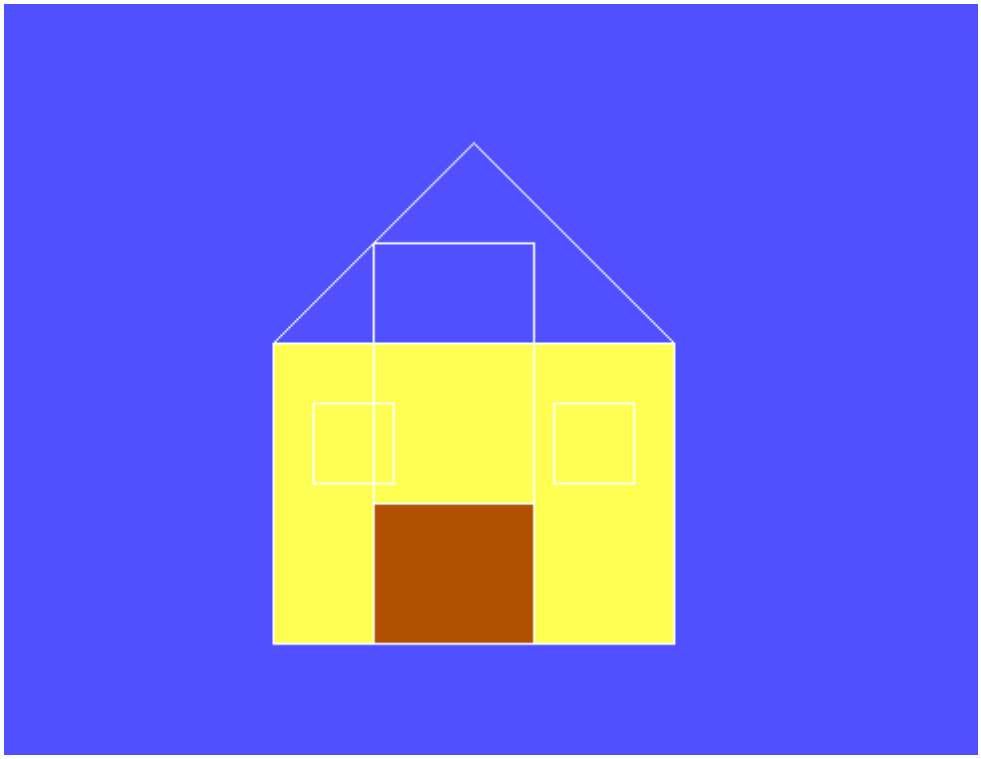
output:



Practical 2b:

```
#include <graphics.h>
#include <conio.h>

void main()
{
   int gd = DETECT, gm;
   initgraph(&gd, &gm, "C:\\Turboc3\\BGI"); ur setup
   setbkcolor(LIGHTBLUE);
   cleardevice();
   setcolor(WHITE);
   rectangle(150, 200, 350, 350);
   setfillstyle(SOLID_FILL, YELLOW);
   floodfill(151, 201, WHITE);
   line(150, 200, 250, 100);  // Left side of the roof
   line(250, 100, 350, 200);  // Right side of the roof
   setfillstyle(SOLID_FILL, RED);
   floodfill(200, 150, WHITE);
   rectangle(220, 280, 280, 350);
   setfillstyle(SOLID_FILL, BROWN);
   floodfill(221, 281, WHITE);
   rectangle(170, 230, 210, 270);
   rectangle(290, 230, 330, 270);
   getch();
   closegraph();
}
```

OUTPUT:

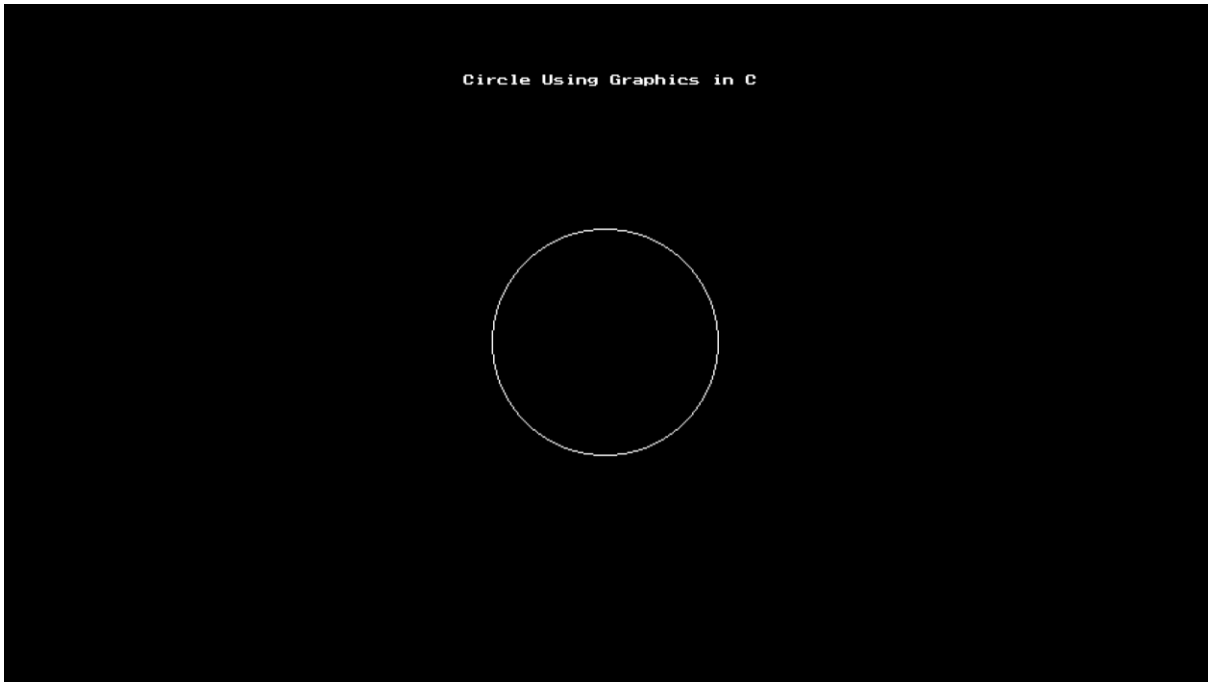


Practical 3a:

Code:

```
#include<graphics.h>
#include<conio.h>
void main()
{
    int gd=DETECT,gm;
    int x,y,radius=80;
    initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
    x=getmaxx()/2;
    y=getmaxy()/2;
    outtextxy(x-100,50,"Circle Using Graphics in C");
    circle(x,y,radius);
    getch();
    closegraph();
}
```

Output:

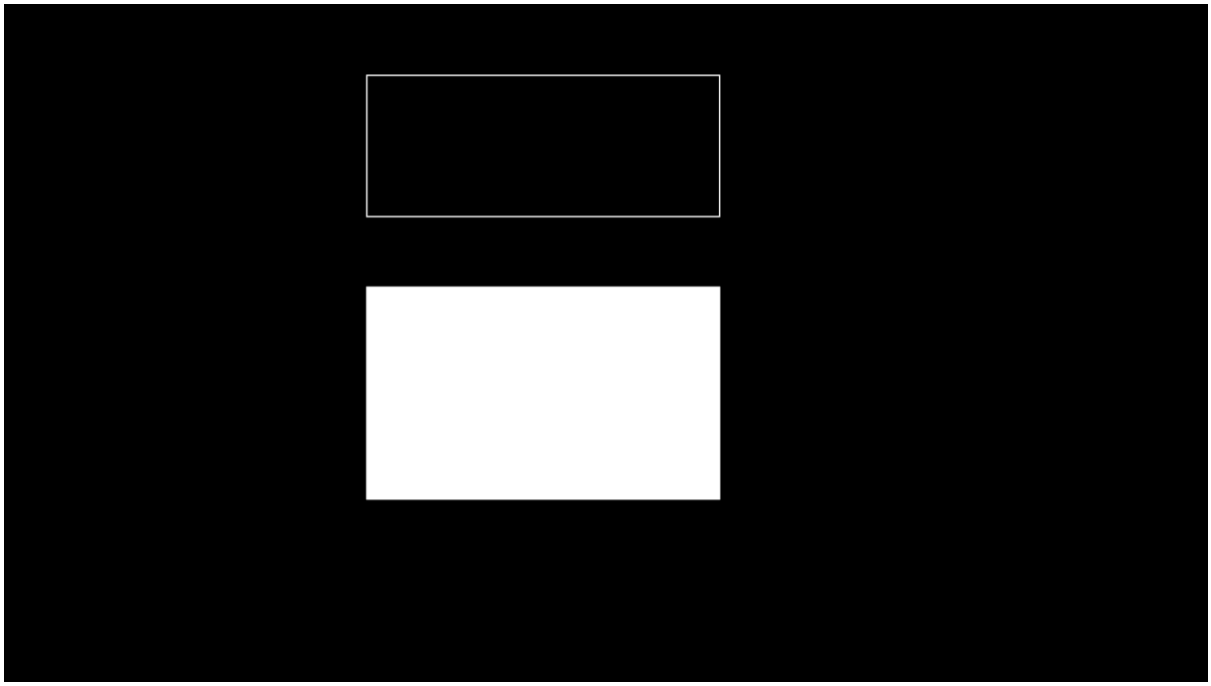


Practical 3b:’

Code:

```
#include<graphics.h>
#include<conio.h>
void main()
{
    int gd=DETECT,gm;
    initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
    rectangle(150,50,400,150);
    bar(150,200,400,350);
    getch();
    closegraph();
}
```

Output:



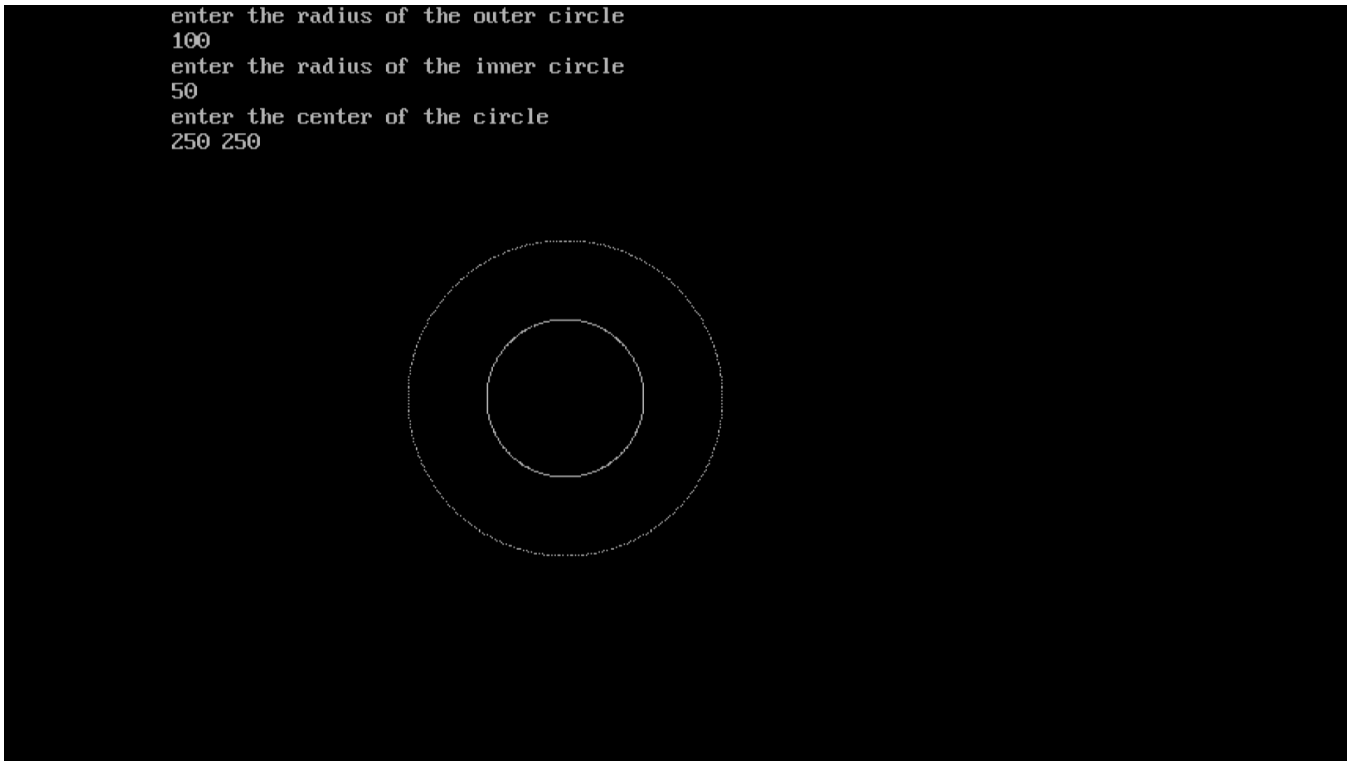
Practical 3c:

Code:

```
#include<graphics.h>
#include<conio.h>
#include<stdio.h>
#include<math.h>
void main()
{
        int rc,rb,xc,yc,i;
        float x,y;
        int gd=DETECT,gm;
        initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
        printf("enter the radius of the outer circle\n");
        scanf("%d",&rc);
        printf("enter the radius of the inner circle\n");
        scanf("%d",&rb);
        printf("enter the center of the circle\n");
        scanf("%d",&xc);
        scanf("%d",&yc);
        for(i=1;i<=360;i++)
{
        x=xc+(rb*(cos (i)));
        y=yc+(rb*(sin (i)));
        putpixel(x,y,7);
}
for(i=1;i<=360;i++)
{
```

```
        x=xc+(rc*(cos(i)));
        y=yc+(rc*(sin(i)));
        putpixel(x,y,7);
    }
        getch();
        closegraph();
}
```

Output:

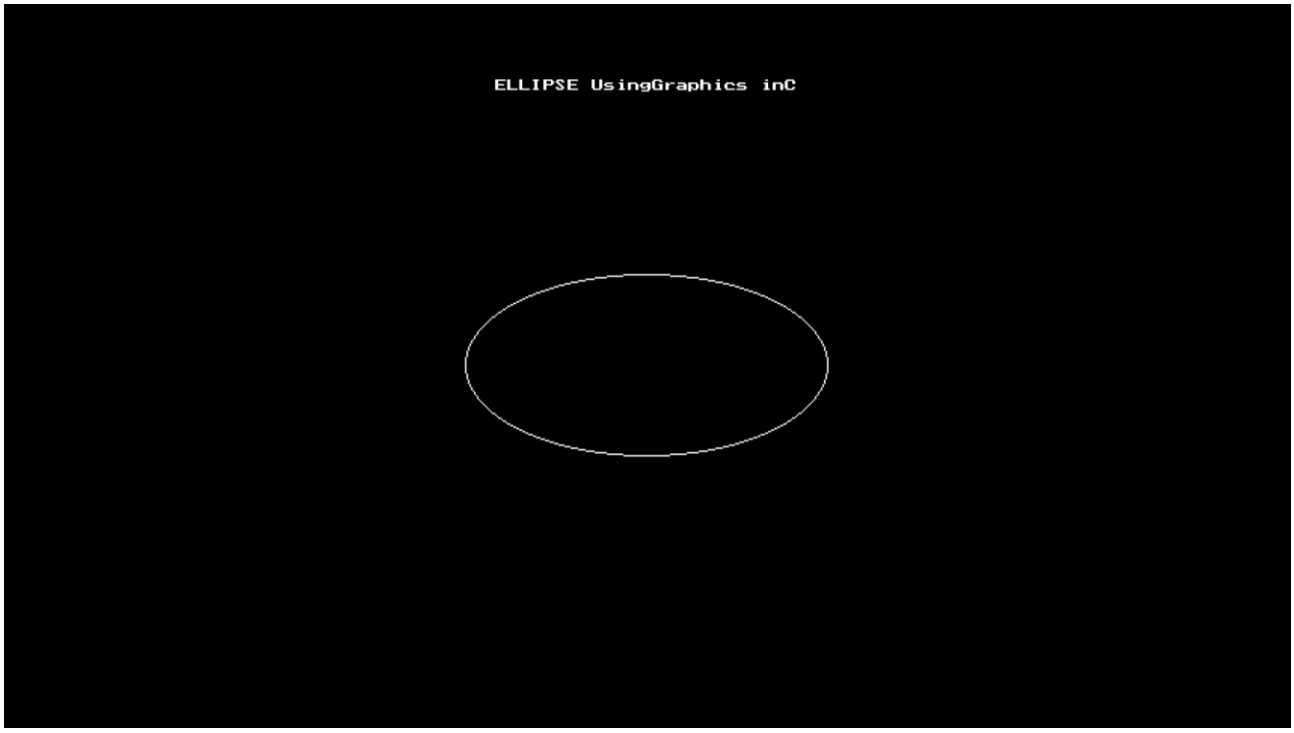


Practical 3d:

Code:

```
#include<graphics.h>
#include<conio.h>
void main()
{
        int gd=DETECT,gm;
        int x,y;
        initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
        x=getmaxx()/2;
        y=getmaxy()/2;
        outtextxy(x-100,50,"ELLIPSE Using Graphics in C");
        ellipse(x,y,0,360,120,60);
        getch();
        closegraph();
}
```

Output:

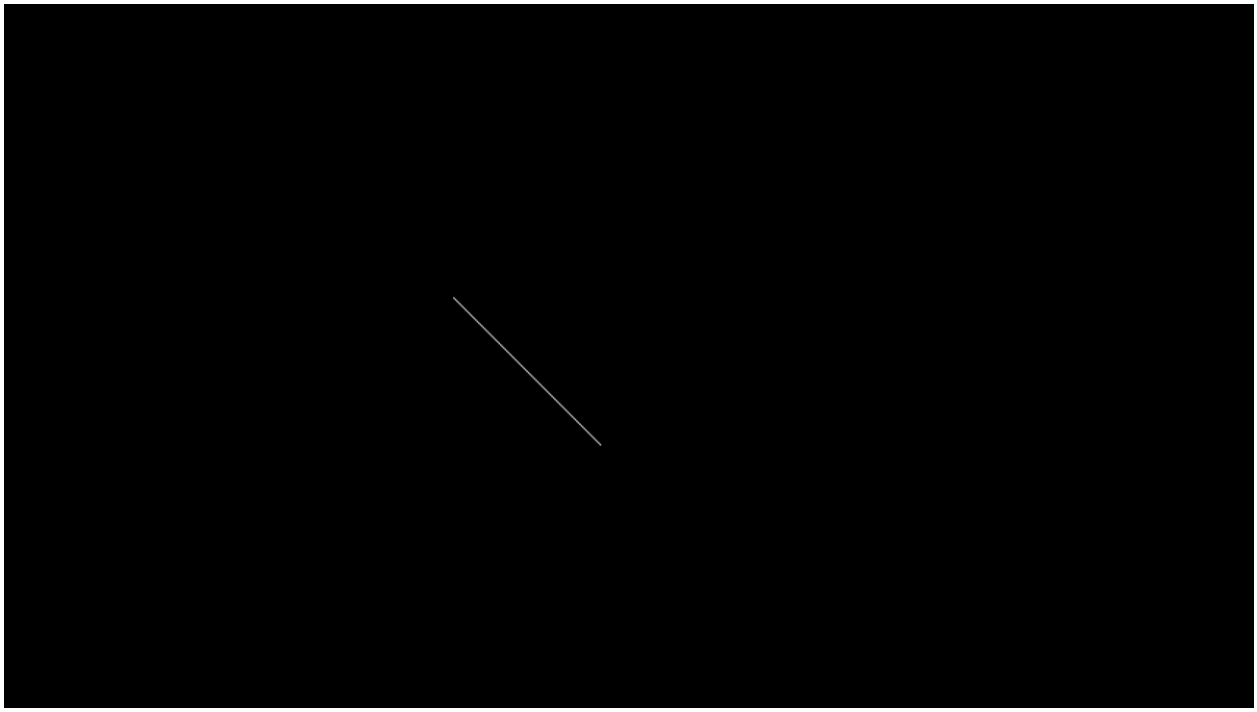


Practical 3e:

Code:

```
#include<graphics.h>
#include<stdio.h>
#include<conio.h>
void main()
{
    int gd=DETECT,gm;
    int x1=200,y1=200;
    int x2=300,y2=300;
    initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
    line(x1,y1,x2,y2);
    getch();
    closegraph();
}
```

Output:



Practical 4a:

Code:

```
#include<graphics.h>
#include<stdio.h>
#include<conio.h>
#include<math.h>
#include<dos.h>
void main()
{
        float x,y,x1,y1,x2,y2,dx,dy,step;
        int i,gd=DETECT,gm;
        initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
        printf("enter the value of x1 and y1");
        scanf("%f%f",&x1,&y1);
        printf("enter the value of x2 and y2");
        scanf("%f%f",&x2,&y2);
        dx=abs(x2-x1);
        dy=abs(y2-y1);
        if(dx>=dy)
        step=dx;
        else
        step=dy;
        dx=dx/step;
        dy=dy/step;
        x=x1;

        y=y1;
        i=1;
```

```
        while(i<=step)
        {
        putpixel(x,y,5);
        x=x+dx;
        y=y+dy;
        i=i+1;
        delay(100);
        }
    closegraph();
    getch();
    }
```

Output:

Practical 4b:

Code:

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
void drawline(int x0,int y0,int x1,int y1)
{
	int dx,dy,p,x,y;
	dx=x1-x0;
	dy=y1-y0;
	x=x0;
	y=y0;
	p=2*dy-dx;
	while(x<x1)
	{
		if(p>=0)
		{
			putpixel(x,y,7);
			y=y+1;
			p=p+2*dy-2*dx;
		}
		else
		{
			putpixel(x,y,7);
			p=p+2*dy;
		}
	x=x+1;
	}
```

```
        }
void main()
{
        int gd=DETECT,gm,error,x0,y0,x1,y1;
        initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
        printf("enter cordinate of first point");
        scanf("%d%d",&x0,&y0);
        printf("enter cordinate of second point");
        scanf("%d%d",&x1,&y1);
        drawline(x0,y0,x1,y1);
        getch();
        closegraph();
}
```

Output:

Practical 5a:

Code:

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#include<dos.h>
void drawcircle(int x0,int y0,int radius)
{
int x=radius;
int y=0;
int err=0;
while(x>=y)
{
putpixel(x0+x,y0+y,7);
putpixel(x0+y,y0+x,7);
putpixel(x0-y,y0+x,7);
putpixel(x0-x,y0+y,7);
putpixel(x0-x,y0-y,7);
putpixel(x0-y,y0-x,7);
putpixel(x0+y,y0-x,7);
putpixel(x0+x,y0-y,7);
if(err<=0)
{
y+=1;
err+=2*y+1;

}
if(err>=0)
```

```
{
x-=1;
err-=2*x+1;
}
}
}
void main()
{
int gd=DETECT,gm,error,x,y,r;
initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
printf("ENTER THE RADIUS OF CIRCLE:");
scanf("%d",&r);
printf("enter coordinate x and y:");
scanf("%d%d",&x,&y);
drawcircle(x,y,r);
getch();
closegraph();
}
```

Output:

Practical 5b:

Code:

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#include<dos.h>
void drawcircle(int x0,int y0,int radius)
{
int x=radius;
int y=0;
int err=0;
while(x>=y)
{
putpixel(x0+x,y0+y,7);
putpixel(x0+y,y0+x,7);
putpixel(x0-y,y0+x,7);
putpixel(x0-x,y0+y,7);
putpixel(x0-x,y0-y,7);
putpixel(x0-y,y0-x,7);
putpixel(x0+y,y0-x,7);
putpixel(x0+x,y0-y,7);
if(err<=0)
{
y+=1;
err+=2*y+1;

}
if(err>=0)
```

```
{
x-=1;
err-=2*x+1;
}
}
}
void main()
{
int gd=DETECT,gm,error,x,y,r;
initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
printf("ENTER THE RADIUS OF CIRCLE:");
scanf("%d",&r);
printf("enter coordinate x and y:");
scanf("%d%d",&x,&y);
drawcircle(x,y,r);
getch();
closegraph();
}
```

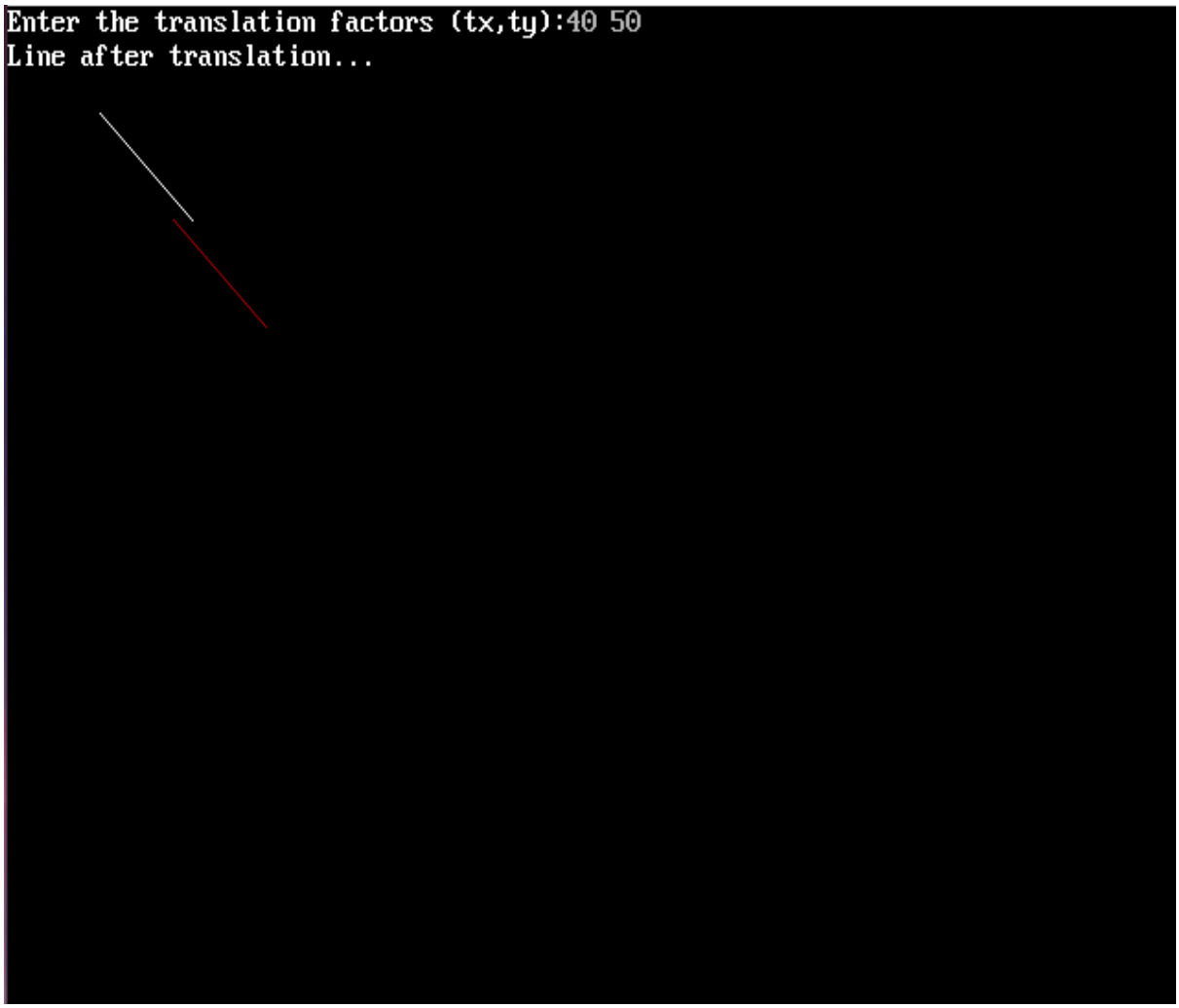
Practical 6a:

Code:

```
#include <graphics.h>
#include <stdio.h>
#include <stdlib.h>

void main()
{
   int graphdriver = DETECT, graphmode;
   int x1, y1, x2, y2;
   int tx, ty;
   int x3, y3, x4, y4;

   printf("Enter the coordinates of the line (x1, y1, x2, y2): \n");
   scanf("%d%d%d%d", &x1, &y1, &x2, &y2);

   initgraph(&graphdriver, &graphmode, "C:\\Turboc3\\BGI");

   line(x1, y1, x2, y2);

   printf("Enter the translation factors (tx, ty): \n");
   scanf("%d%d", &tx, &ty);

   x3 = x1 + tx;
   y3 = y1 + ty;
   x4 = x2 + tx;
   y4 = y2 + ty;
```

```
    printf("Line after Translation...\n");

    setcolor(RED);

    line(x3, y3, x4, y4);


    getch();

    closegraph();

}
```

Output:



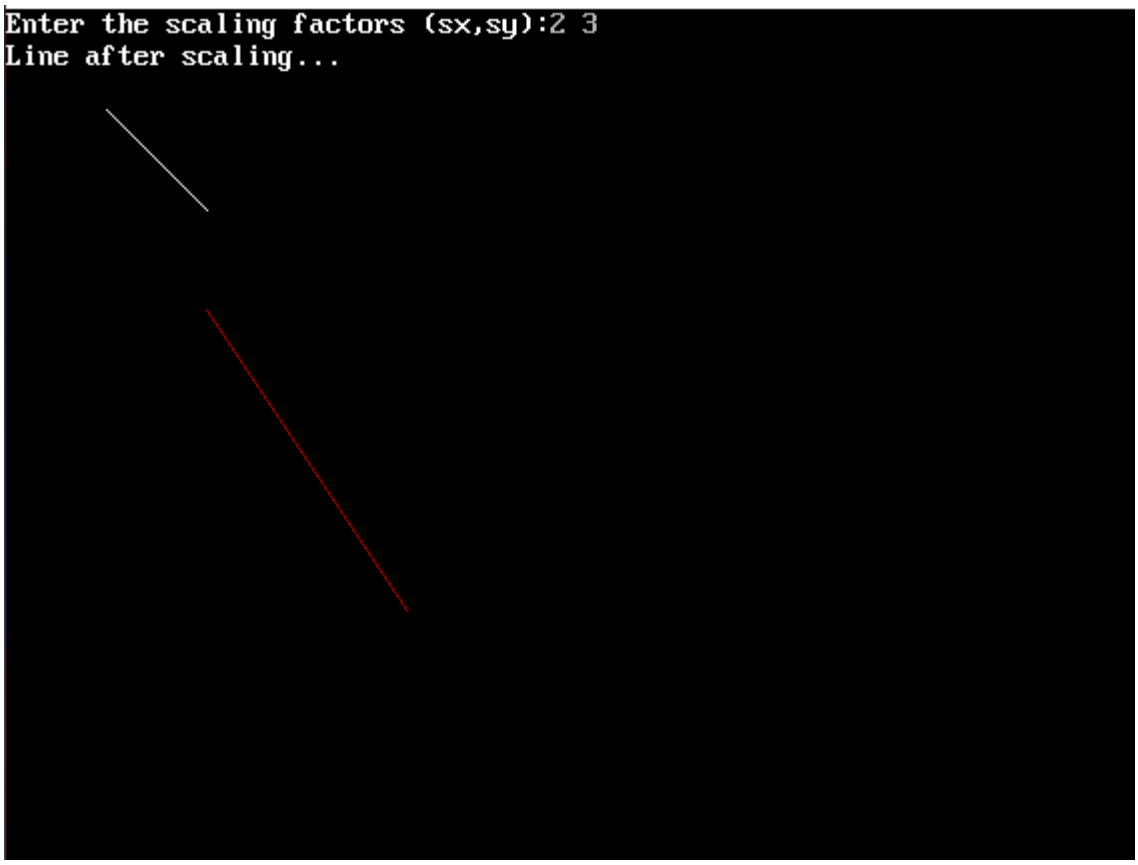
Practical 6b:

Code:

```
#include <graphics.h>

#include <stdio.h>

#include <stdlib.h>


void main()

{

   int graphdriver = DETECT, graphmode;

   int x1, y1, x2, y2;

   float sx, sy;

   int x3, y3, x4, y4;


   printf("Enter the coordinates of the line (x1, y1, x2, y2): ");

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


   initgraph(&graphdriver, &graphmode, "C:\\TURBOC3\\BGI");


   line(x1, y1, x2, y2);


   printf("Enter the scaling factors (sx, sy): ");

   scanf("%f%f", &sx, &sy);


   x3 = x1 * sx;

   y3 = y1 * sy;

   x4 = x2 * sx;

   y4 = y2 * sy;
```

```
    printf("Line after scaling...\n");

    setcolor(RED);
    line(x3, y3, x4, y4);

    getch();
    closegraph();
}
```

Output:



Practical 7a:

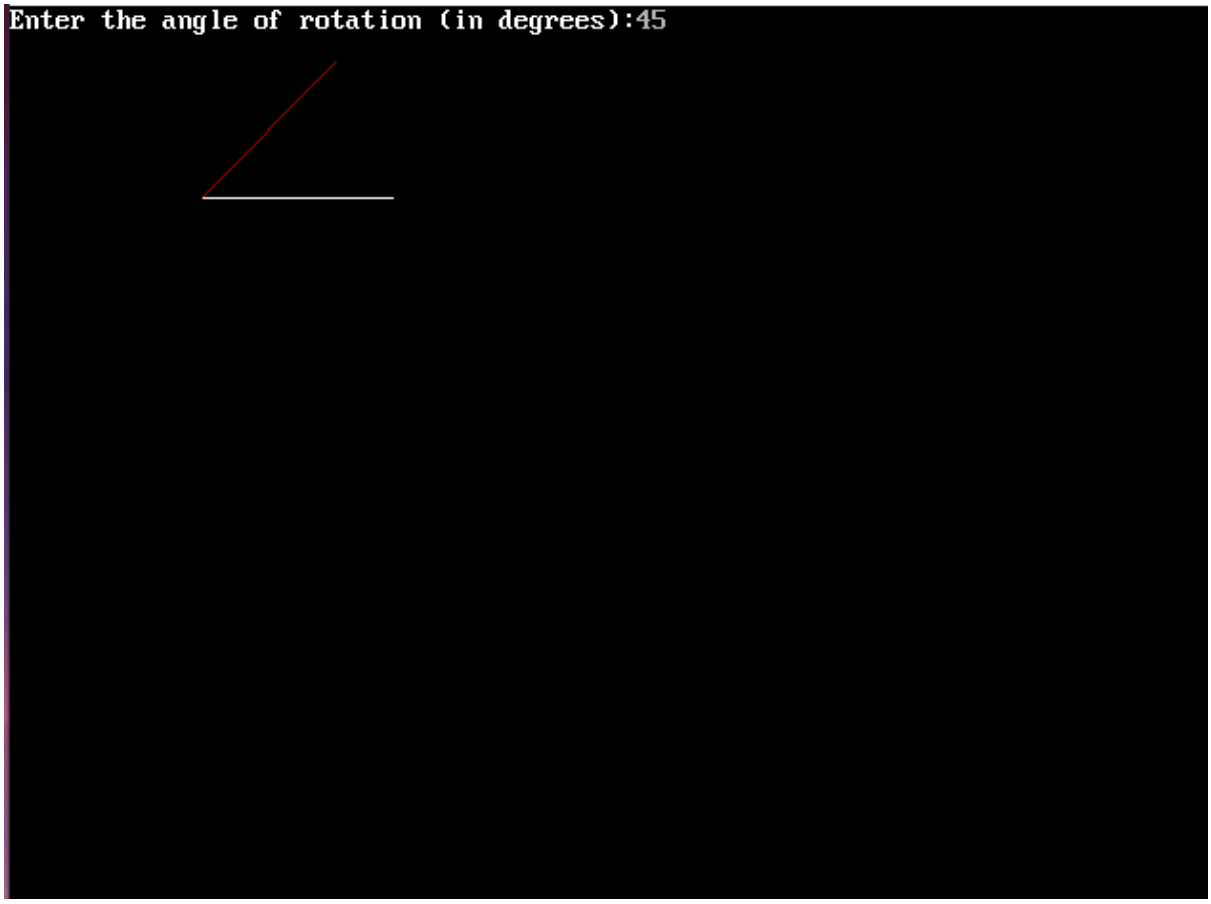
Code:

```
#include <graphics.h>
#include <stdlib.h>
#include <stdio.h>
#include <conio.h>
void main()
{
   int graphdriver = DETECT, graphmode;
   int x1, y1, x2, y2, x3, y3;
   int xn1, yn1, xn2, yn2, xn3, yn3;
   int choice;
   int midX, midY;
   printf("Enter the coordinates of the triangle (x1, y1, x2, y2, x3, y3): ");
   scanf("%d%d%d%d%d%d", &x1, &y1, &x2, &y2, &x3, &y3);
   initgraph(&graphdriver, &graphmode, "C:\\TURBOC3\\BGI");
   midX = getmaxx() / 2;
   midY = getmaxy() / 2;

   line(x1, y1, x2, y2);
   line(x2, y2, x3, y3);
   line(x3, y3, x1, y1);

   printf("\nChoose the type of reflection:\n");
   printf("1. Reflection over X-axis\n");
   printf("2. Reflection over Y-axis\n");
   printf("3. Reflection over Origin\n");
   printf("Enter your choice: ");
```

```
 scanf("%d", &choice);
switch (choice)
{
    case 1:
        xn1 = x1;
        yn1 = 2 * midY - y1;
        xn2 = x2;
        yn2 = 2 * midY - y2;
        xn3 = x3;
        yn3 = 2 * midY - y3;
        break;
    case 2:
        xn1 = 2 * midX - x1;
        yn1 = y1;
        xn2 = 2 * midX - x2;
        yn2 = y2;
        xn3 = 2 * midX - x3;
        yn3 = y3;
        break;
    case 3:
        xn1 = 2 * midX - x1;
        yn1 = 2 * midY - y1;
        xn2 = 2 * midX - x2;
        yn2 = 2 * midY - y2;
        xn3 = 2 * midX - x3;
        yn3 = 2 * midY - y3;
        break;
    default:
```

```
        printf("Invalid choice\n");
        closegraph();
        exit(0);
    }
    setcolor(RED);
    line(xn1, yn1, xn2, yn2);
    line(xn2, yn2, xn3, yn3);
    line(xn3, yn3, xn1, yn1);
    getch();
    closegraph();
}
```

Output:



Practical 7b:

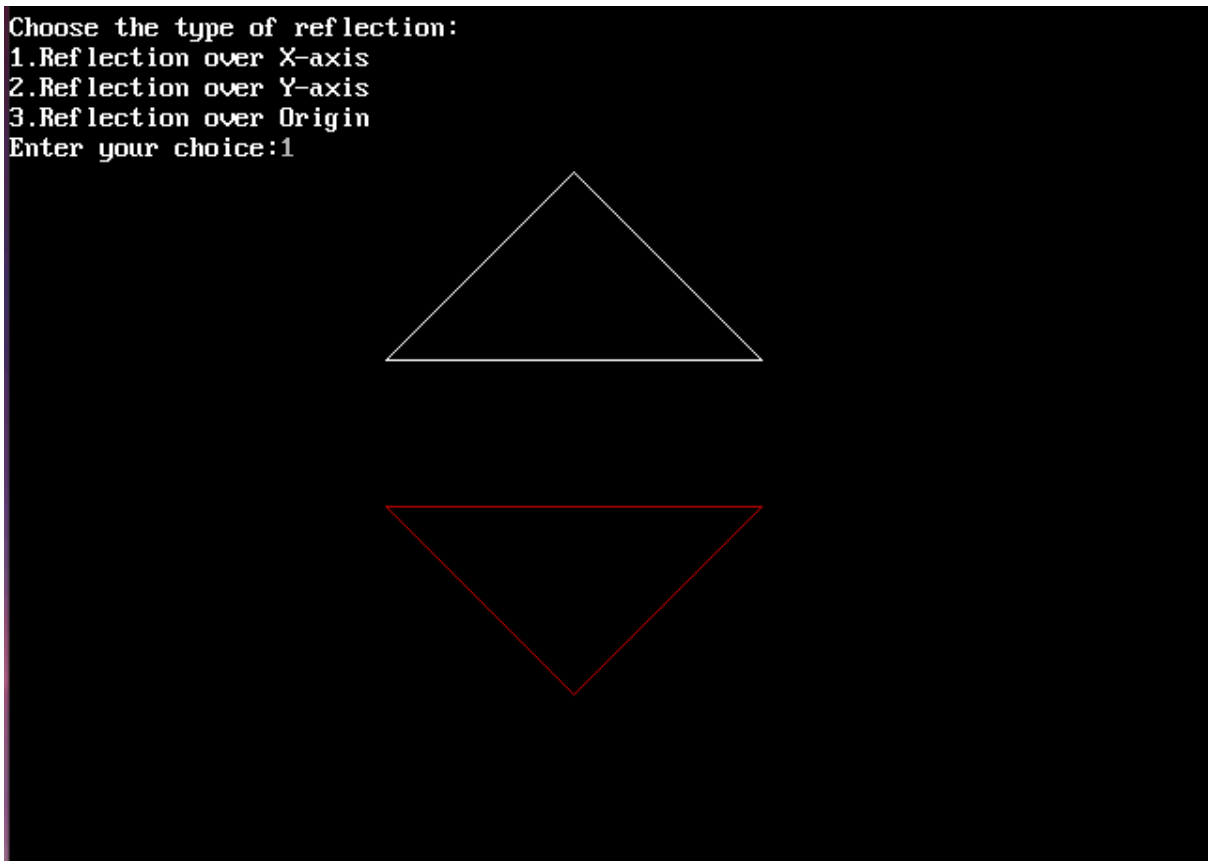
Code:

```
#include <graphics.h>
#include <stdlib.h>
#include <stdio.h>
#include <conio.h>
void main()
{
   int graphdriver = DETECT, graphmode;
   int x1, y1, x2, y2, x3, y3;
   int xn1, yn1, xn2, yn2, xn3, yn3;
   int choice;
   int midX, midY;
   printf("Enter the coordinates of the triangle (x1, y1, x2, y2, x3, y3): ");
   scanf("%d%d%d%d%d%d", &x1, &y1, &x2, &y2, &x3, &y3);
   initgraph(&graphdriver, &graphmode, "C:\\TURBOC3\\BGI");
   midX = getmaxx() / 2;
   midY = getmaxy() / 2;

   line(x1, y1, x2, y2);
   line(x2, y2, x3, y3);
   line(x3, y3, x1, y1);

   printf("\nChoose the type of reflection:\n");
   printf("1. Reflection over X-axis\n");
   printf("2. Reflection over Y-axis\n");
   printf("3. Reflection over Origin\n");
   printf("Enter your choice: ");
```

```
scanf("%d", &choice);

switch (choice)
{
   case 1:
      xn1 = x1;
      yn1 = 2 * midY - y1;
      xn2 = x2;
      yn2 = 2 * midY - y2;
      xn3 = x3;
      yn3 = 2 * midY - y3;
      break;
   case 2:
      xn1 = 2 * midX - x1;
      yn1 = y1;
      xn2 = 2 * midX - x2;
      yn2 = y2;
      xn3 = 2 * midX - x3;
      yn3 = y3;
      break;
   case 3:
      xn1 = 2 * midX - x1;
      yn1 = 2 * midY - y1;
      xn2 = 2 * midX - x2;
      yn2 = 2 * midY - y2;
      xn3 = 2 * midX - x3;
      yn3 = 2 * midY - y3;
      break;
```

```
    default:
        printf("Invalid choice\n");
        closegraph();
        exit(0);
  }
  setcolor(RED);
  line(xn1, yn1, xn2, yn2);
  line(xn2, yn2, xn3, yn3);
  line(xn3, yn3, xn1, yn1);

  getch();
  closegraph();
}
```

Output:



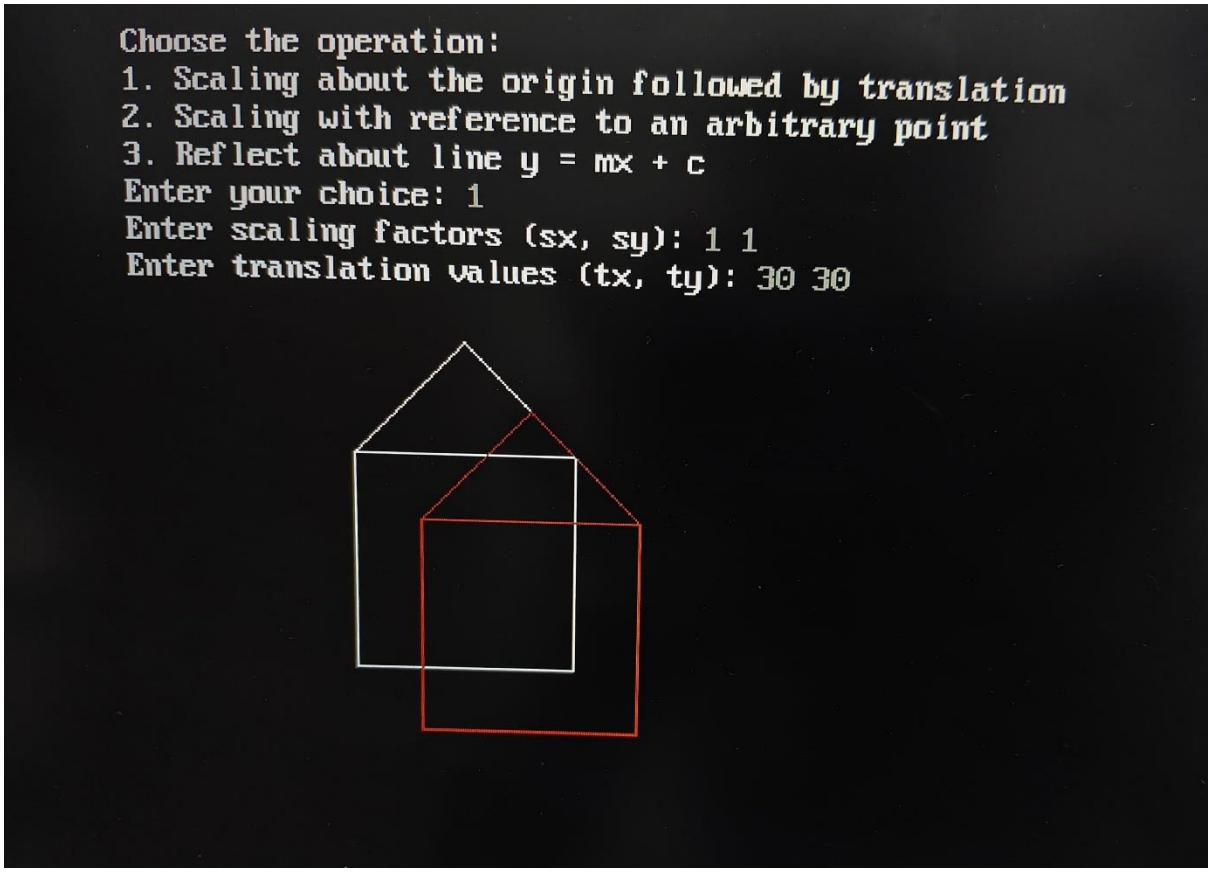
Practical 7c:

```
#include <graphics.h>
#include <stdlib.h>
#include <stdio.h>
#include <conio.h>
void main()
{
   int graphdriver = DETECT, graphmode;
   int x1, y1, x2, y2, x3, y3;
   int xn1, yn1, xn2, yn2, xn3, yn3;
   int choice;
   int midX, midY;
   printf("Enter the coordinates of the triangle (x1, y1, x2, y2, x3, y3): ");
   scanf("%d%d%d%d%d%d", &x1, &y1, &x2, &y2, &x3, &y3);

   initgraph(&graphdriver, &graphmode, "C:\\TURBOC3\\BGI");

   midX = getmaxx() / 2;
   midY = getmaxy() / 2;

   line(x1, y1, x2, y2);
   line(x2, y2, x3, y3);
   line(x3, y3, x1, y1);

   printf("\nChoose the type of reflection:\n");
   printf("1. Reflection over X-axis\n");
   printf("2. Reflection over Y-axis\n");
   printf("3. Reflection over Origin\n");
```

```
printf("Enter your choice: ");
scanf("%d", &choice);
switch (choice)
{
   case 1:
      xn1 = x1;
      yn1 = 2 * midY - y1;
      xn2 = x2;
      yn2 = 2 * midY - y2;
      xn3 = x3;
      yn3 = 2 * midY - y3;
      break;
   case 2:
      xn1 = 2 * midX - x1;
      yn1 = y1;
      xn2 = 2 * midX - x2;
      yn2 = y2;
      xn3 = 2 * midX - x3;
      yn3 = y3;
      break;
   case 3:
      xn1 = 2 * midX - x1;
      yn1 = 2 * midY - y1;
      xn2 = 2 * midX - x2;
      yn2 = 2 * midY - y2;
      xn3 = 2 * midX - x3;
      yn3 = 2 * midY - y3;
      break;
```

```
    default:
        printf("Invalid choice\n");
        closegraph();
        exit(0);
  }

  setcolor(RED);
  line(xn1, yn1, xn2, yn2);
  line(xn2, yn2, xn3, yn3);
  line(xn3, yn3, xn1, yn1);
  getch();
  closegraph();
}
```

Output:



Practical 8a:

Code:

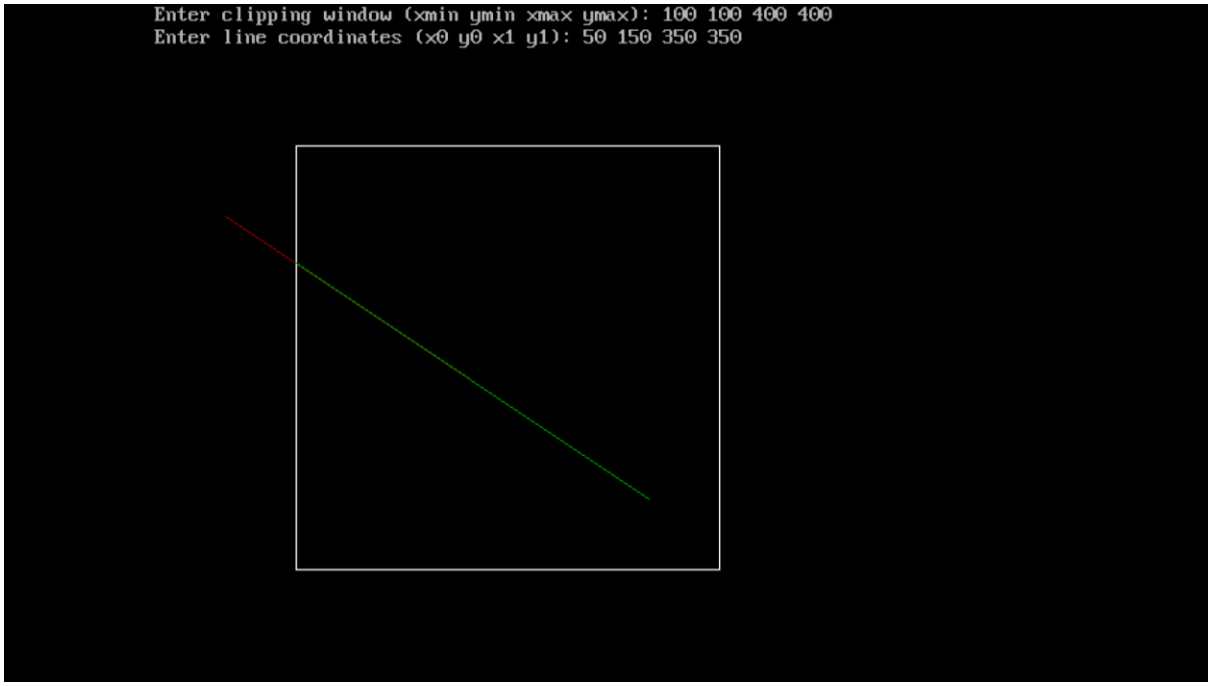
```
#include <graphics.h>

#include <conio.h>

#include <stdio.h>


#define TOP 8

#define BOTTOM 4

#define RIGHT 2

#define LEFT 1


int xmin, ymin, xmax, ymax;


int computeCode(int x, int y) {

   int code = 0;
```

```
    if (y > ymax) code |= TOP;
    if (y < ymin) code |= BOTTOM;
    if (x > xmax) code |= RIGHT;
    if (x < xmin) code |= LEFT;
    return code;
}

void cohenSutherlandClip(int x0, int y0, int x1, int y1) {
    int code0 = computeCode(x0, y0);
    int code1 = computeCode(x1, y1);
    int codeOut;
    int accept = 0;
    float x, y;

    while (1) {
        if ((code0 == 0) && (code1 == 0)) { // Both endpoints inside
            accept = 1;
            break;
        } else if (code0 & code1) { // Both endpoints share an outside region (completely
outside)
            break;
        } else {
            codeOut = code0 ? code0 : code1;

            if (codeOut & TOP) {
                x = x0 + (float)(x1 - x0) * (ymax - y0) / (y1 - y0);
                y = ymax;
            } else if (codeOut & BOTTOM) {
```

```
            x = x0 + (float)(x1 - x0) * (ymin - y0) / (y1 - y0);
            y = ymin;
        } else if (codeOut & RIGHT) {
            y = y0 + (float)(y1 - y0) * (xmax - x0) / (x1 - x0);
            x = xmax;
        } else if (codeOut & LEFT) {
            y = y0 + (float)(y1 - y0) * (xmin - x0) / (x1 - x0);
            x = xmin;
        }

        if (codeOut == code0) {
            x0 = (int)x;
            y0 = (int)y;
            code0 = computeCode(x0, y0);
        } else {
            x1 = (int)x;
            y1 = (int)y;
            code1 = computeCode(x1, y1);
        }
    }
  }

  if (accept) {
    setcolor(GREEN);
    line(x0, y0, x1, y1);
  }
}
```

```
void main() {
   int gd = DETECT, gm;
   int x0, y0, x1, y1;

   initgraph(&gd, &gm, "C:\\Turboc3\\BGI");

   printf("Enter clipping window (xmin ymin xmax ymax): ");
   scanf("%d %d %d %d", &xmin, &ymin, &xmax, &ymax);

   printf("Enter line coordinates (x0 y0 x1 y1): ");
   scanf("%d %d %d %d", &x0, &y0, &x1, &y1);

   // Draw clipping window
   setcolor(WHITE);
   rectangle(xmin, ymin, xmax, ymax);

   // Draw original line in RED
   setcolor(RED);
   line(x0, y0, x1, y1);
   getch();

   // Perform clipping and draw the result
   cohenSutherlandClip(x0, y0, x1, y1);
   getch();

   closegraph();
}
```

Output:



Practical 9a:

Code:

```
#include <graphics.h>

#include <stdio.h>

#include <conio.h>

#include <dos.h>


void customFloodFill(int x, int y, int oldcolor, int newcolor) {

  if (getpixel(x, y) == oldcolor) {

    delay(20);

    putpixel(x, y, newcolor);


    customFloodFill(x + 1, y, oldcolor, newcolor);

    customFloodFill(x - 1, y, oldcolor, newcolor);

    customFloodFill(x, y + 1, oldcolor, newcolor);
```

```
        customFloodFill(x, y - 1, oldcolor, newcolor);
    }
}

void main() {
    int gd = DETECT, gm;
    int x, y, radius;

    printf("Enter x and y position for circle: ");
    scanf("%d %d", &x, &y);

    printf("Enter radius of circle: ");
    scanf("%d", &radius);

    initgraph(&gd, &gm, "C:\\Turboc3\\BGI");

    circle(x, y, radius);

    customFloodFill(x, y, BLACK, WHITE);

    getch();
    closegraph();
}
```

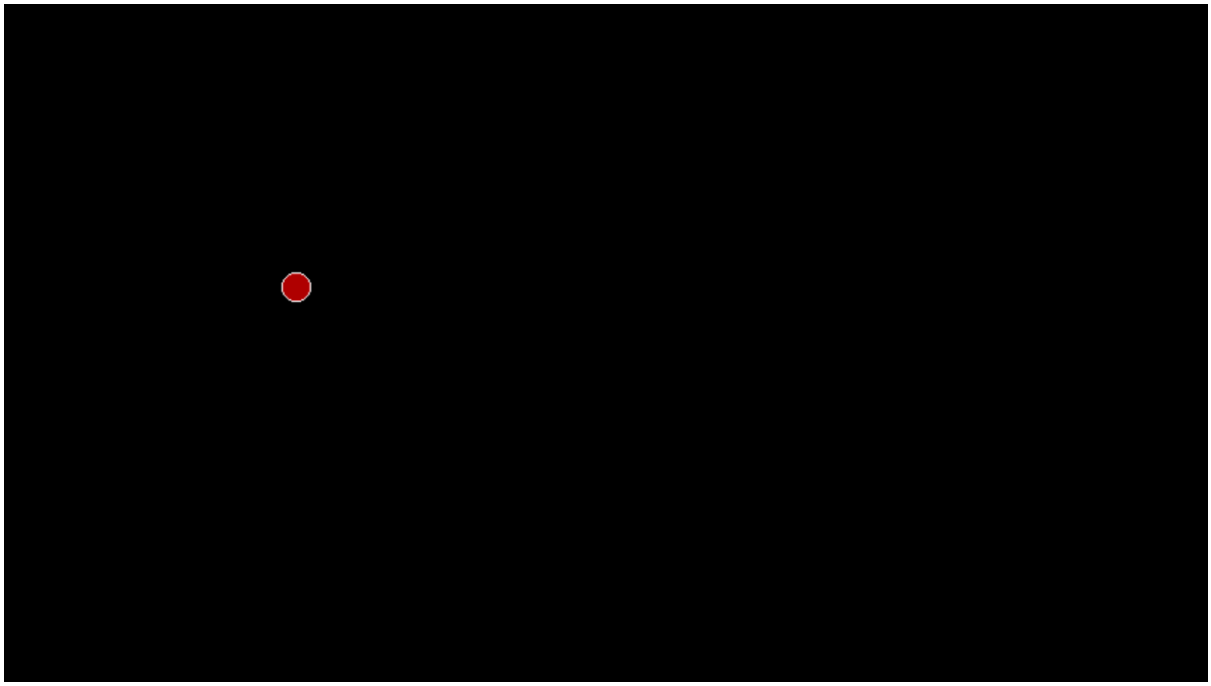
Output:

Practical 9b:

```
#include <graphics.h>

#include <stdio.h>

#include <conio.h>

#include <dos.h>


void boundaryFill(int x, int y, int fillColor, int boundaryColor) {

   if (getpixel(x, y) != boundaryColor && getpixel(x, y) != fillColor) {

      delay(20);

      putpixel(x, y, fillColor);
```

```
        boundaryFill(x + 1, y, fillColor, boundaryColor);
        boundaryFill(x - 1, y, fillColor, boundaryColor);
        boundaryFill(x, y + 1, fillColor, boundaryColor);
        boundaryFill(x, y - 1, fillColor, boundaryColor);
    }
}

void main() {
    int gd = DETECT, gm;
    int x, y, radius;

    printf("Enter x and y position for circle: ");
    scanf("%d %d", &x, &y);

    printf("Enter radius of circle: ");
    scanf("%d", &radius);

    initgraph(&gd, &gm, "C:\\Turboc3\\BGI");

    circle(x, y, radius);

    boundaryFill(x, y, RED, WHITE);

    getch();
    closegraph();
}
```

Output:



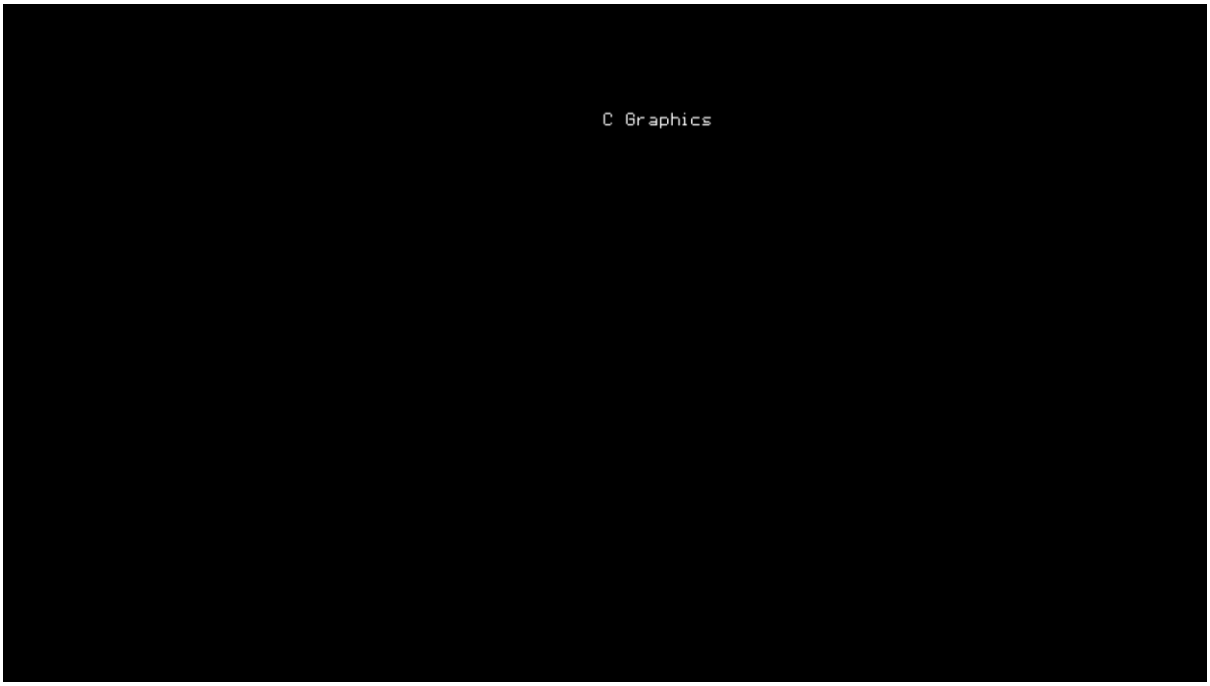
Practical 10a:

Code:

```
#include<graphics.h>
#include<conio.h>
#include<stdio.h>
#include<dos.h>
void main()
{
        int gd=DETECT,gm,i,maxx,maxy,key0;
        initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
```

```
        maxx=getmaxx();
        maxy=getmaxy();
        while(!kbhit())
        {
                for(i=0;i<maxy;i++)
                {
                        cleardevice();
                        settextstyle(2,0,5);
                        outtextxy(maxx/2,i,"C Graphics");
                        delay(100);
                }
        }
getch();
}
```

Output:

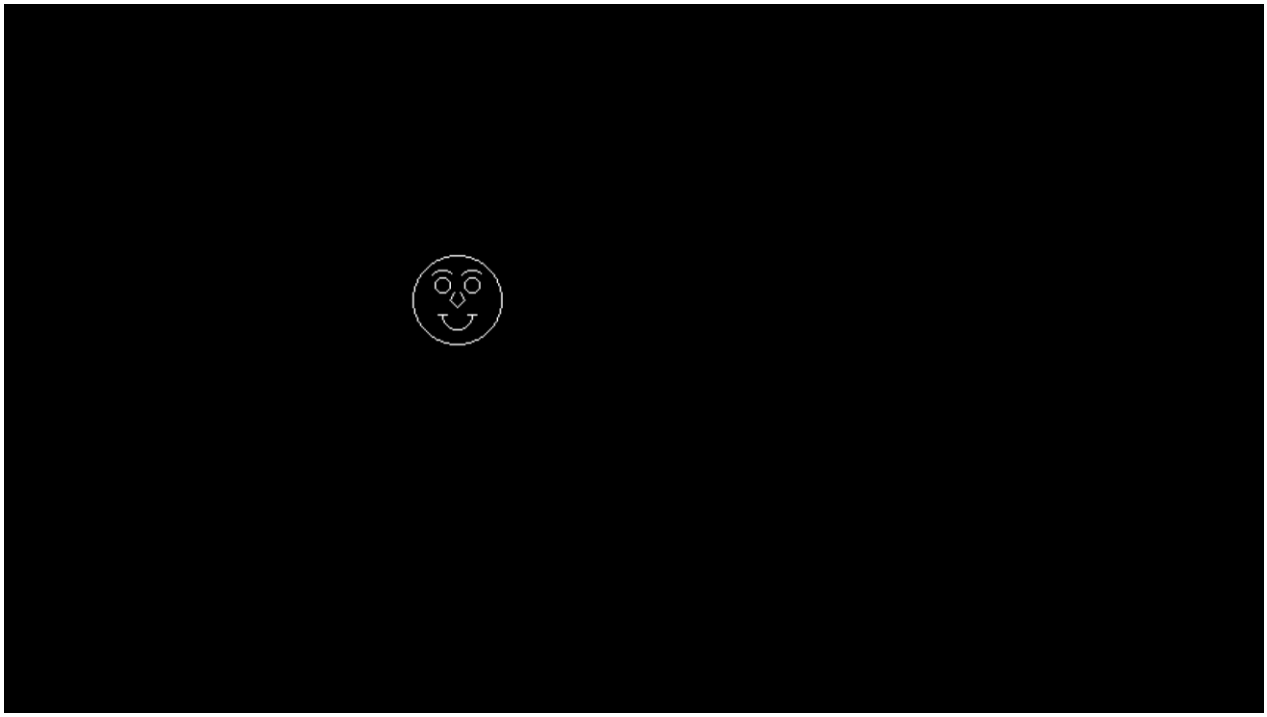


Practical 10b:

Code:

```
#include<graphics.h>
#include<conio.h>
#include<stdio.h>
void main()
{
    int gd=DETECT,gm;
    initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
    circle(200,200,30);
    circle(190,190,5);
    arc(190,190,50,130,10);
    circle(210,190,5);
    arc(210,190,50,130,10);
    arc(200,210,180,360,10);
    line(187,210,193,210);
    line(207,210,213,210);
    line(198,195,195,200);
    line(202,195,205,200);
    line(195,200,200,205);
    line(205,200,200,205);
    getch();
    closegraph();
}
```

Output:



Practical 10c:

Code:

```
#include<graphics.h>
#include <graphics.h>
#include <dos.h>
#include <conio.h>

void main() {
  int i, j = 0, gd = DETECT, gm;

  initgraph(&gd, &gm, "C:\\Turboc3\\BGI");

  settextstyle(DEFAULT_FONT, HORIZ_DIR, 2);
  outtextxy(25, 240, "Press any key to view the moving car");
  getch();

  for (i = 0; i <= 420; i += 10, j++) {
    setcolor(j % 16);

    rectangle(50 + i, 275, 150 + i, 400);
    rectangle(150 + i, 350, 200 + i, 400);

    circle(75 + i, 410, 10);
    circle(175 + i, 410, 10);

    delay(100);
    if (i < 420) {
      setcolor(BLACK);
      rectangle(50 + i, 275, 150 + i, 400);
```

```
        rectangle(150 + i, 350, 200 + i, 400);
        circle(75 + i, 410, 10);
        circle(175 + i, 410, 10);
      }
    }

    getch();
    closegraph();
}
```

Output: