Computer Graphics: CSE-414

LAB -1

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- fllatform: CodeBlocks and others
- Language: C++
- Graphics Setup: How to Setup graphics.h in CodeBlocks 2023 | How to Run Graphics flrogram in C/C++ CodeBlocks V20.03 - YouTube
- Drive: 2. CG - Google Drive

LAB-1: Outlitvs:

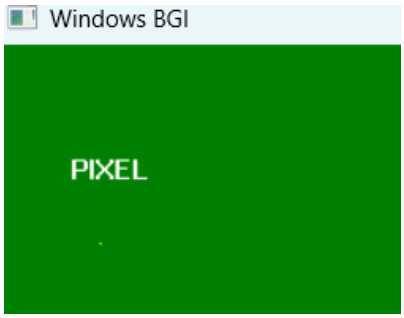
1. flixvl puitt
2. Litv dua" usit: litv() futctiot
»». Ciuclv dua" usit: ciuclv() futctiot
4. Kua" tuiat:lv usit: litv()
5. Kua" uvctat:lv usit: uvctat:lv()
6. Kua" vllipsv usit: vllipsv()
7. Kua" Auc usit: auc()
8. Kua" bau usit: bau()
9. Kua" »K bau usit: bau»d()
10. Kua" a Houv fla:v

- **List of availablv colous atd thviu valuvs**

Color Name	Color Value
BLACK	0
BLUE	1
GREEN	2
CYAN	3
RED	4
MAGENTA	5
BROWN	6
LIGHTGRAY	7
DARKGRAY	8
LIGHTBLUE	9
LIGHTGREEN	10
LIGHTCYAN	11
LIGHTRED	12
LIGHTMAGENTA	13
YELLOW	14
WHITE	15

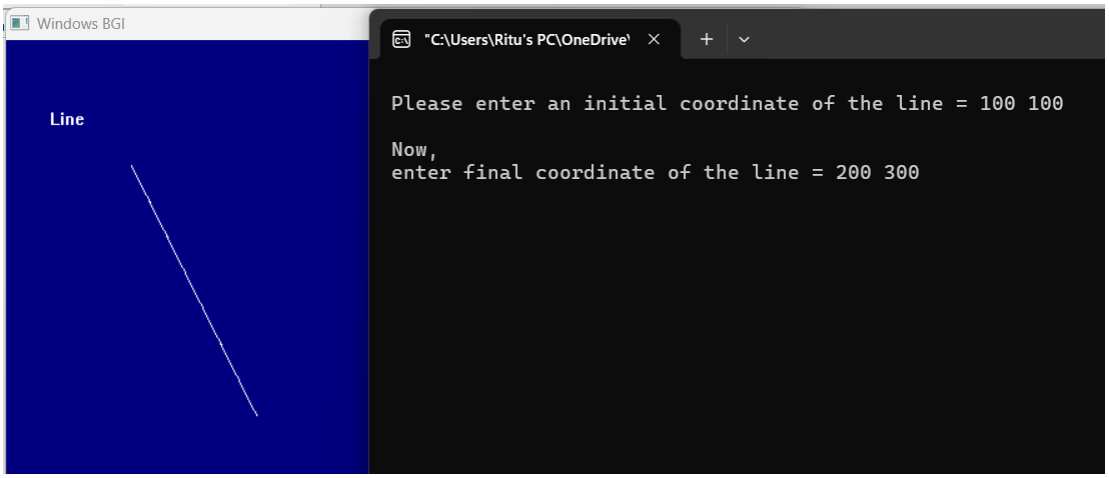
fluo:uau-1: fluitt flixvl

```
#include<bits/stdc++.h>
#include<graphics.h>
#include<conio.h>
int main(){
     int gd = DETECT,gm;
     initgraph(figd, figm, "C:\\TC\\BGI");

     setbkcolor(GREEN);
     cleardevice();
     putpixel(50, 100, YELLOW);
     outtextxy(35, 55, "flIXEL");
     getch();
     closegraph();
    return 0;
}
/*
Function    Description
initgraph--It initializes the graphics system by loading the passed graphics driver then changing the system into graphics mode.
getmaxx--It returns the maximum X coordinate in current graphics mode and driver.
getmaxy--It returns the maximum Y coordinate in current graphics mode and driver.
outtextxy--It displays a string at a particular point (x,y) on screen.
circle--It draws a circle with radius r and centre at (x, y).
closegraph--It unloads the graphics drivers and sets the screen back to text mode.*/
```



fluo:uau - 1: fluitt litv usit: litv()

```
#include<bits/stdc++.h>
#include<conio.h>
#include<graphics.h>

using namespace std;
int main()
{
    int gd=DETECT,gm;
    initgraph(figd, figm,"C:\\TURBOC3\\BGI");


    int x_initial,y_initial,x_final,y_final;
    printf("\n fllease enter an initial coordinate of the line = ");
    scanf("%d %d", fix_initial,fiy_initial);
    printf("\n Now, \n enter final coordinate of the line = ");
    scanf("%d %d",fix_final,fiy_final);


    setbkcolor(BLUE);
    cleardevice();
    outtextxy(35, 55, "Line");
    line(x_initial,y_initial,x_final,y_final);

    getch();
    closegraph();
}
/*Sample Input Output
 fllease enter an initial coordinate of the line = 100 100

 Now,
 enter final coordinate of the line = 200 300*/
```

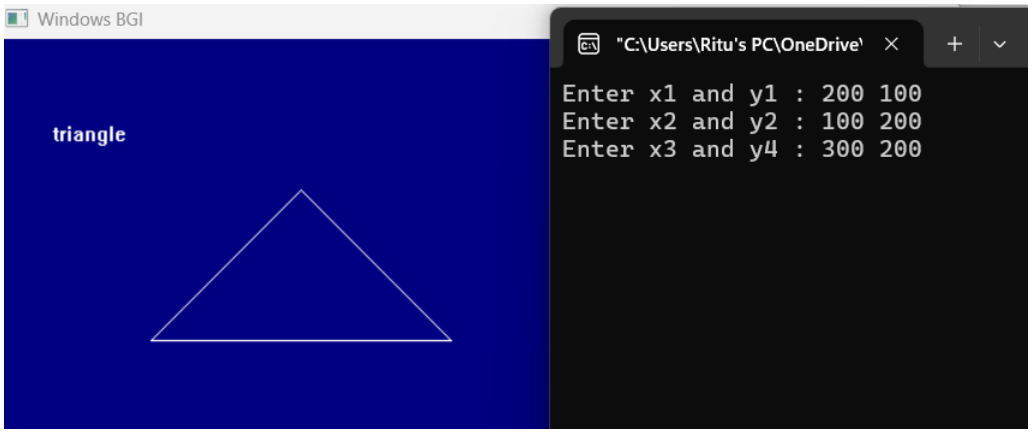


fluo:uau – »: fluitt ciuclv usit: ciuclv()

```
#include<bits/stdc++.h>
#include<graphics.h>
#include<conio.h>

int main(){
    int gd = DETECT,gm;
    initgraph(figd, figm, "C:\\TC\\BGI");

    int h,k,radius;
    printf("Center coordinate: ");
    scanf("%d %d", fih, fik);

    printf("Radius : ");//radius
    scanf("%d", firadius);


     setbkcolor(BLUE);
     cleardevice();
     outtextxy(35, 55, "circle");
     circle(h, k, radius);



    getch();
    closegraph();
    return 0;
}
```

fluo:uau - 4: puitt tuiat:lv usit: litv()

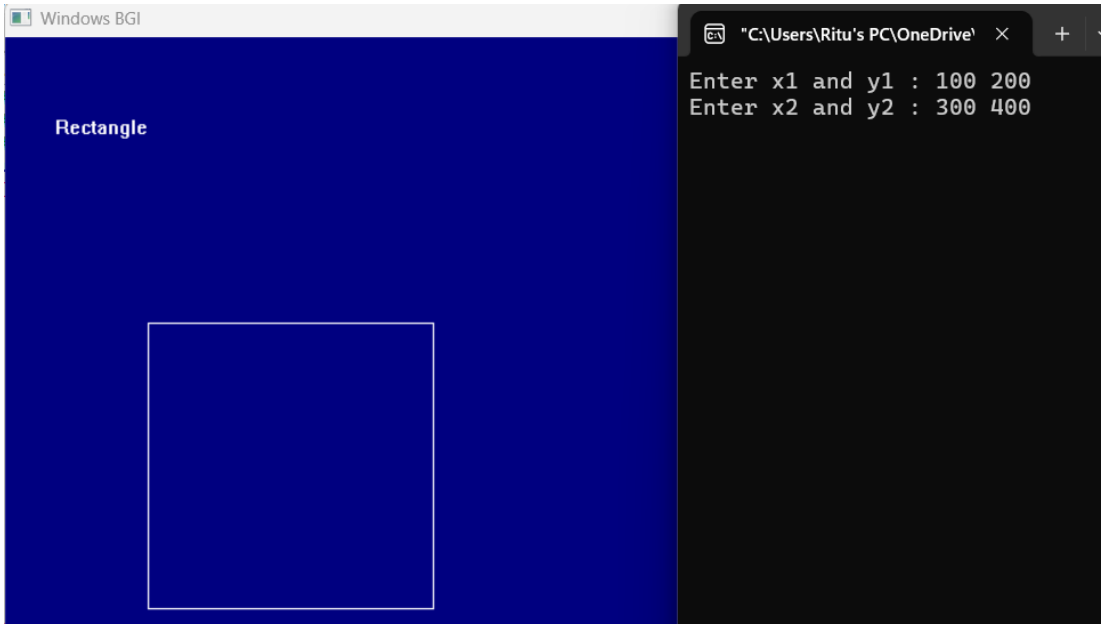
```
#include<bits/stdc++.h>
#include<graphics.h>
#include<conio.h>
int main()
{
    int gd = DETECT,gm;
    initgraph(figd, figm, "C:\\TC\\BGI");

    int x1,y1,x2,y2,x3,y3;
    printf("Enter x1 and y1 : ");
    scanf("%d %d", fix1, fiy1);

    printf("Enter x2 and y2 : ");
    scanf("%d %d", fix2, fiy2);

    printf("Enter x3 and y4 : ");
    scanf("%d %d", fix3, fiy3);

    setbkcolor(BLUE);
    cleardevice();

    outtextxy(35, 55, "triangle");
    line(x1,y1, x2,y2);
    line(x2,y2, x3,y3);
    line(x3,y3, x1,y1);


    getch();
    closegraph();
}
///200 100 100 200 300 200
```



fluo:uau - 5: Kua" uvctat:lv usit: uvctat:lv()

```
#include<bits/stdc++.h>
#include<graphics.h>
#include<conio.h>
int main()
{
    int gd = DETECT,gm;
    initgraph(figd, figm, "C:\\TC\\BGI");

    int x1,y1,x2,y2,x3,y3;
    printf("Enter x1 and y1 : ");
    scanf("%d %d", fix1, fiy1);

    printf("Enter x2 and y2 : ");
    scanf("%d %d", fix2, fiy2);

    setbkcolor(BLUE);
    cleardevice();

    outtextxy(35, 55, "Rectangle");
    rectangle(x1,y1, x2,y2);

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

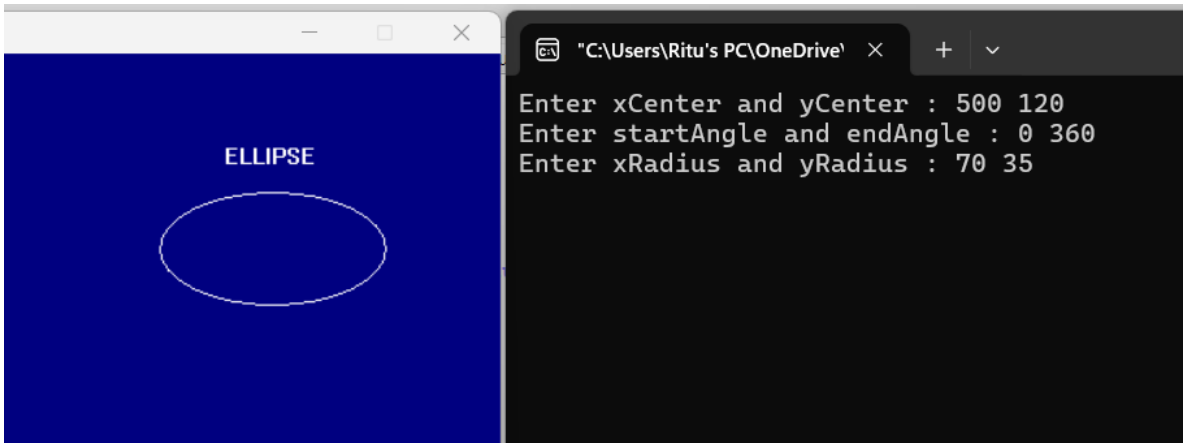
///100 200 300 400



fluo:uau - 6: Kua" vllipsv usit: vllipsv()

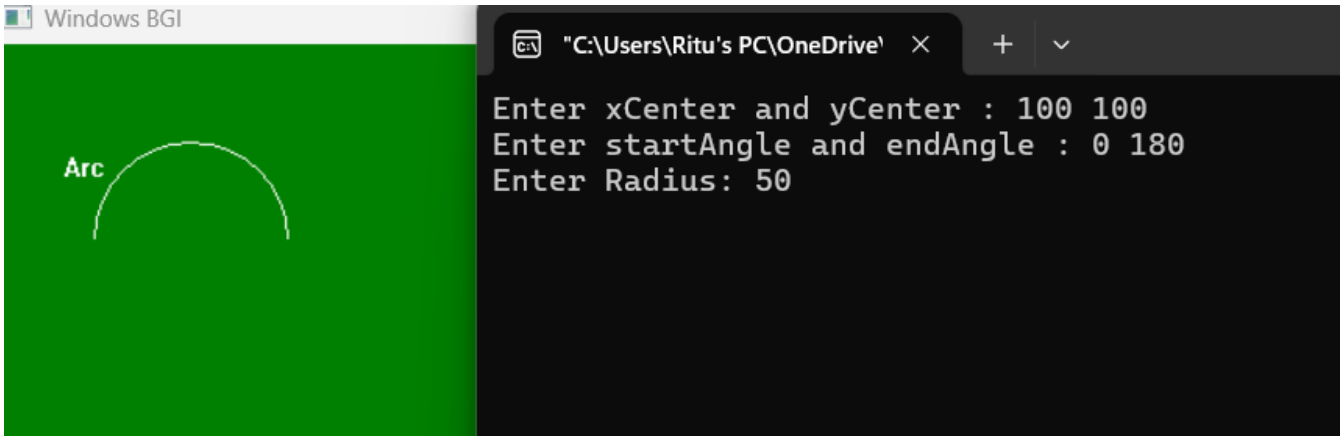
```
#include<bits/stdc++.h>
#include<graphics.h>
#include<conio.h>
int main()
{
    int gd = DETECT,gm;
    initgraph(figd, figm, "C:\\TC\\BGI");
    /// ellipse(xCenter, yCenter, startAngle, endAngle, xRadius, yRadius):
    // Draws an ellipse for a given center, starting and ending angle
    // and horizontal and vertical radius.

    int x1,y1,x2,y2,x3,y3;
    printf("Enter xCenter and yCenter : ");
    scanf("%d %d", fix1, fiy1);

    printf("Enter startAngle and endAngle : ");
    scanf("%d %d", fix2, fiy2);

    printf("Enter xRadius and yRadius : ");
    scanf("%d %d", fix3, fiy3);

    setbkcolor(BLUE);
    cleardevice();
    outtextxy(470, 55, "ELLIflSE");
    ellipse(x1,y1, x2,y2, x3,y3);


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

///500 120 0 360 70 35



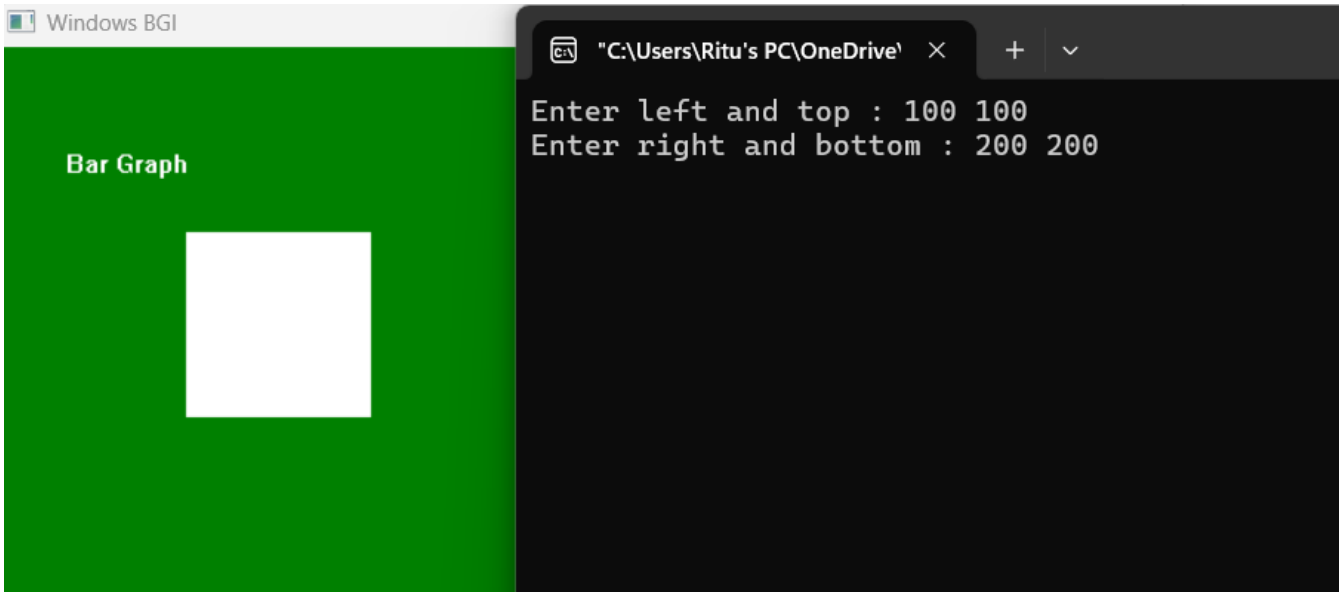
fluo:uau - 7: Kua" Auc usit: auc()

```
#include<bits/stdc++.h>
#include<graphics.h>
#include<conio.h>

int main()
{
    int gd = DETECT,gm;
    initgraph(figd, figm, "C:\\TC\\BGI");
    ///Syntax: arc(int x, int y, int startAngle, int endAngle, int radius);
    int x1,y1,x2,y2,r;

    printf("Enter xCenter and yCenter : ");
    scanf("%d %d", fix1, fiy1);

    printf("Enter startAngle and endAngle : ");
    scanf("%d %d", fix2, fiy2);

    printf("Enter Radius: ");
    scanf("%d", fir);

    setbkcolor(GREEN);
    cleardevice();
    outtextxy(35, 55, "Arc");
    arc(x1,y1, x2,y2,r);

    getch();
    closegraph();
}
///100 100 0 135 50
```



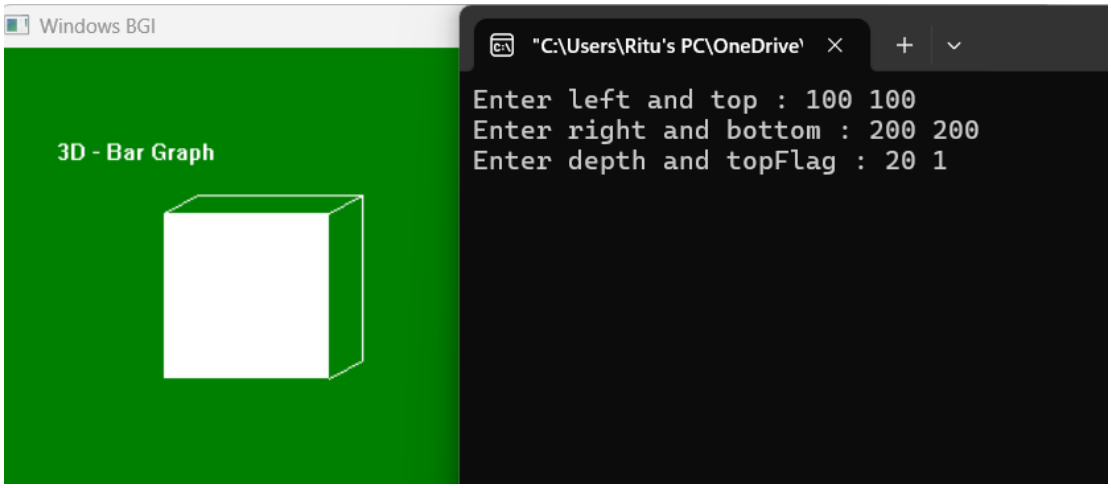
fluo:uau - 8: Kua" a bau usit: bau()

```
#include<bits/stdc++.h>
#include<graphics.h>
#include<conio.h>

int main()
{
    int gd = DETECT,gm;
    initgraph(figd, figm, "C:\\TC\\BGI");
    ///Syntax: bar(int left, int top, int right, int bottom);
    int x1,y1,x2,y2,r;
    printf("Enter left and top : ");
    scanf("%d %d", fix1, fiy1);

    printf("Enter right and bottom : ");
    scanf("%d %d", fix2, fiy2);


    setbkcolor(GREEN);
    cleardevice();
    outtextxy(35, 55, "Bar Graph");
    bar(x1,y1, x2,y2);

    getch();
    closegraph();
}
///100 100 200 200
```



fluo:uau - 9 : Kua" »K bau usit: bau»d()

```
#include<bits/stdc++.h>
#include<graphics.h>
#include<conio.h>
int main(){
    int gd = DETECT,gm;
    initgraph(figd, figm, "C:\\TC\\BGI");
    ///bar3d(int left, int top, int right, int bottom, int depth, int topflag);
    ///left, top, right, bottom are the positions
    ///depth specifies the depth of bar in pixels
    ///topflag determines whether a 3 dimensional top is put on the bar or not
    ///(1 for yes, 0 for not )

    int x1,y1,x2,y2,depth, topFlag;
    printf("Enter left and top : ");
    scanf("%d %d", fix1, fiy1);

    printf("Enter right and bottom : ");
    scanf("%d %d", fix2, fiy2);

    printf("Enter depth and topFlag : ");
    scanf("%d %d", fidepth, fitopFlag);

    setbkcolor(GREEN);
    cleardevice();
    outtextxy(35, 55, "3D - Bar Graph");
    bar3d(x1, y1, x2, y2, depth, topFlag);

    getch();
    closegraph();
}
///100 100 200 200 20 1
```



fluo:uau - 10: Kua" a Houv fla:v

```
#include<bits/stdc++.h>
#include<conio.h>
#include<graphics.h>
int main(){
    int  gd=DETECT,gm;
    initgraph(figd,  figm,"C:\\TURBOC3\\BGI");
    setbkcolor(LIGHTBLUE); // Set background color to white
    cleardevice(); // Clear the screen with the background color
    // Draw each letter with specific colors and positions
    setcolor(RED);    //    Color    for    'G'
    settextstyle(SANS_SERIF_FONT, HORIZ_DIR, 4);
    outtextxy(150, 100, "G");
    setcolor(BLUE); // Color for 'O'
    outtextxy(200, 100, "O");
    setcolor(YELLOW); // Color for 'O'
    outtextxy(250, 100, "O");
    setcolor(GREEN); // Color for 'G'
    outtextxy(300, 100, "G");
    setcolor(MAGENTA); // Color for 'L'
    outtextxy(350, 100, "L");
    setcolor(CYAN); // Color for 'E'
    outtextxy(400, 100, "E");
    // Draw additional text
    setcolor(BLACK); // Color for 'surf'
    settextstyle(SANS_SERIF_FONT, HORIZ_DIR, 2);
    outtextxy(180, 200, "surf");
    setcolor(BLACK); // Color for 'Go AHEAD'
    outtextxy(250, 300, "Go AHEAD");
    // Draw rectangles
    setcolor(BLACK);
    rectangle(120, 180, 300, 220); // Rectangle around 'surf'
    rectangle(240, 280, 400, 320); // Rectangle around 'Go AHEAD'
    getch();
    closegraph();
}
```