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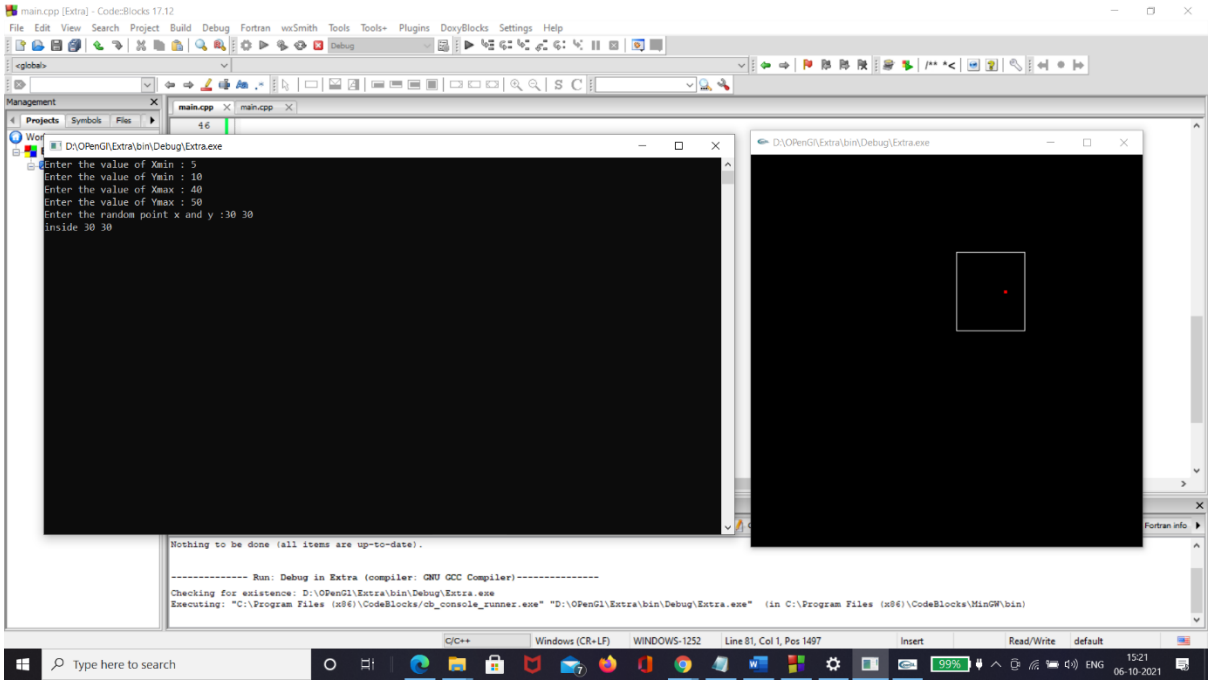
B-5 AI&ML SEM-5

Experiment-5

Point Clipping

```
#include<windows.h>
#include<stdio.h>
#include<GL/glu.h>
#include<GL/glut.h>
#include<stdlib.h>

int Xmax,Xmin,Ymax,Ymin,x,y;

void init_gl(void)
{
	glClearColor(0.0, 0.0, 0.0, 1.0);

	glColor3f(1.0, 1.0, 1.0);

	glPointSize(1.0);
	glMatrixMode(GL_PROJECTION);
	glLoadIdentity();

	gluOrtho2D(-100,100,-100,100);
}

void display()
{

	glPointSize(4.0);
	glClear(GL_COLOR_BUFFER_BIT);
	glBegin(GL_POINTS);

    if(Xmin < x && x < Xmax && Ymin < y && y < Ymax){
		glColor3f(1.0, 0.0, 0.0);
		printf("inside %d %d\n", x, y);
	}
	else{
		glColor3f(0.0, 0.0, 1.0);
		printf("outside %d %d\n", x, y);
```

```
        }

        glVertex2i(x, y);

        glEnd();

        glPointSize(1.0);
        glColor3f(1.0, 1.0, 1.0);

        glBegin(GL_LINE_LOOP);

                glVertex2i(Xmin, Ymin);
                glVertex2i(Xmin, Ymax);
                glVertex2i(Xmax, Ymax);
                glVertex2i(Xmax, Ymin);

        glEnd();
        glFlush();
}

int main (int argc, char** argv)
{
   printf("Enter the value of Xmin : ");
   scanf("%d",&Xmin);
   printf("Enter the value of Ymin : ");
   scanf("%d",&Ymin);
   printf("Enter the value of Xmax : ");
   scanf("%d",&Xmax);
   printf("Enter the value of Ymax : ");
   scanf("%d",&Ymax);
        printf("Enter the random point x and y :");
        scanf("%d%d",&x,&y);

        glutInit(&argc, argv);
        glutInitDisplayMode(GLUT_SINGLE | GLUT_RGB);

        glutInitWindowSize(500, 500);
        glutInitWindowPosition(100,100);

        glutCreateWindow(*argv);
        init_gl();

        glutDisplayFunc(display);
        glutMainLoop();
}
```


main.cpp [Extra] - CodeBlocks 17.12
File Edit View Search Project Build Debug Fortran wxSmith Tools Tools+ Plugins DoxyBlocks Settings Help
D:\OPenGl\Extra\bin\Debug\Extra.exe
Enter the value of Xmin : 5
Enter the value of Ymin : 10
Enter the value of Xmax : 40
Enter the value of Ymax : 50
Enter the random point x and y :30 30
inside 30 30
D:\OPenGl\Extra\bin\Debug\Extra.exe
Nothing to be done (all items are up-to-date).
---------- Run: Debug in Extra (compiler: GNU GCC Compiler)----------
Checking for existence: D:\OPenGl\Extra\bin\Debug\Extra.exe
Executing: "C:\Program Files (x86)\CodeBlocks/cb_console_runner.exe" "D:\OPenGl\Extra\bin\Debug\Extra.exe" (in C:\Program Files (x86)\CodeBlocks\MinGW\bin)
Type here to search
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