# Lab Taks-4

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**Question- 1**

Use the building, tree, lamppost and bench to create a scenario.

**Graph Plot (Picture)-**

**Code-**

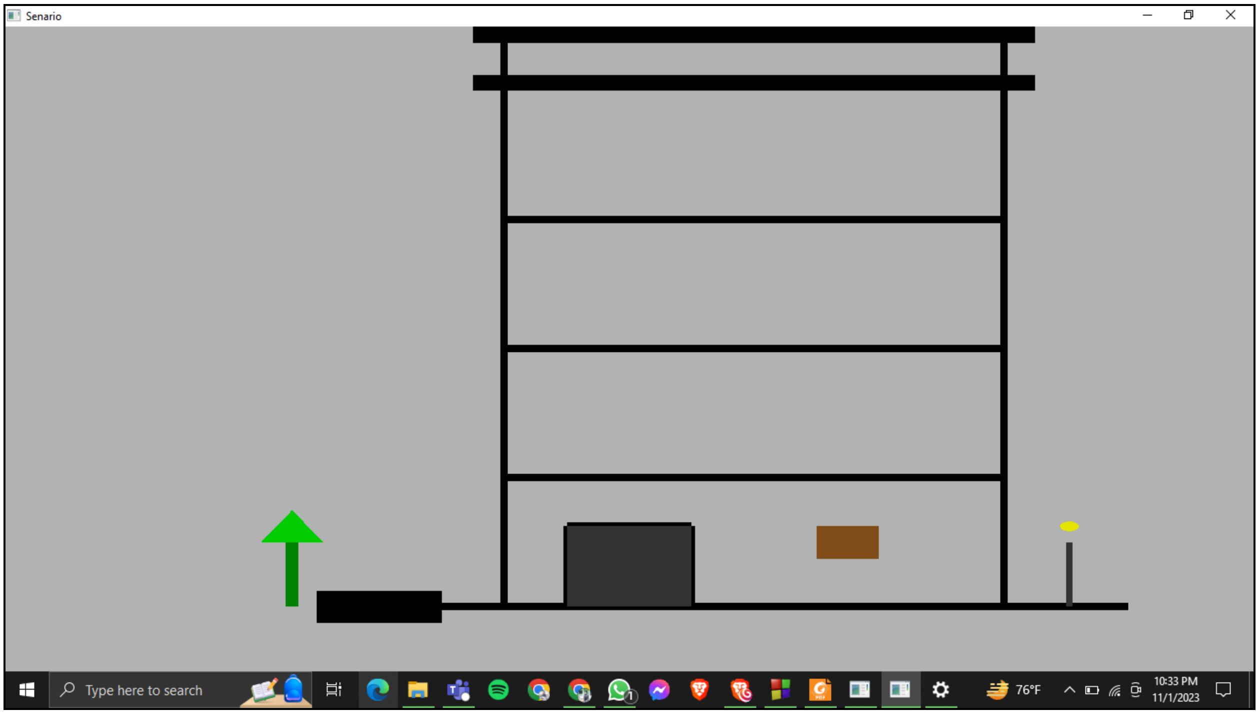
```
 #include <windows.h>
#include <GL/glut.h>
#include <cmath>

void drawBuilding()

{
glClearColor(0.7f, 0.7f, 0.7f, 1.0f);

glClear(GL_COLOR_BUFFER_BIT);
glLineWidth(7.5);
glBegin(GL_LINES);
glColor3f(0.0f, 0.0f, 0.0f);
glVertex2f(-0.4f, -0.8f);
glVertex2f(-0.2f, -0.8f);
glVertex2f(-0.2f, -0.8f);
glVertex2f(0.6f, -0.8f);
glVertex2f(0.6f, -0.8f);
glVertex2f(0.8f, -0.8f);
glVertex2f(0.6f, -0.8f);
glVertex2f(0.6f, 1.0f);
glVertex2f(0.6f, 1.0f);
glVertex2f(-0.2f, 1.0f);
glVertex2f(-0.2f, 1.0f);
glVertex2f(-0.2f, -0.8f);
glVertex2f(-0.2f, -0.4f);
glVertex2f(0.6f, -0.4f);
glVertex2f(-0.2f, 0.0f);
```

```
glVertex2f(0.6f, 0.0f);
glVertex2f(-0.2f, 0.4f);
glVertex2f(0.6f, 0.4f);
glVertex2f(-0.2f, 1.2f);
glVertex2f(0.6f, 1.2f);
glVertex2f(-0.1f, -0.8f);
glVertex2f(0.1f, -0.8f);
glVertex2f(0.1f, -0.8f);
glVertex2f(0.1f, -0.55f);
glVertex2f(0.1f, -0.55f);
glVertex2f(-0.1f, -0.55f);
glVertex2f(-0.1f, -0.55f);glVertex2f(-0.1f, -0.8f);
glEnd();
glBegin(GL_QUADS);
glColor3f(0.2f, 0.2f, 0.2f);
glVertex2f(-0.1f, -0.8f);
glVertex2f(0.1f, -0.8f);
glVertex2f(0.1f, -0.8f);
glVertex2f(0.1f, -0.55f);
glVertex2f(0.1f, -0.55f);
glVertex2f(-0.1f, -0.55f);
glVertex2f(-0.1f, -0.55f);
glVertex2f(-0.1f, -0.8f);
glColor3f(0.0f, 0.0f, 0.0f);
glVertex2f(-0.25f, 0.85f);
glVertex2f(-0.25f, 0.8f);
glVertex2f(0.65f, 0.8f);
glVertex2f(0.65f, 0.85f);
glVertex2f(-0.25f, 1.0f);
glVertex2f(-0.25f, 0.95f);
glVertex2f(0.65f, 0.95f);
glVertex2f(0.65f, 1.0f);
glColor3f(0.5f, 0.3f, 0.1f);
glVertex2f(0.3f, -0.65f);
glVertex2f(0.4f, -0.65f);
glVertex2f(0.4f, -0.55f);
glVertex2f(0.3f, -0.55f);
glEnd();
glFlush();
}

void drawBench() {

    glColor3f(0.0f, 0.0f, 0.0f); // Bench color
```

```
   glBegin(GL_QUADS);
   glVertex2f(-0.5f, -0.85f);
   glVertex2f(-0.3f, -0.85f);
   glVertex2f(-0.3f, -0.75f);
   glVertex2f(-0.5f, -0.75f);
   glEnd();
}

void drawTree() {

   glColor3f(0.0f, 0.5f, 0.0f); // Tree trunk color
   glBegin(GL_QUADS);
   glVertex2f(-0.55f, -0.8f);
   glVertex2f(-0.53f, -0.8f);
   glVertex2f(-0.53f, -0.6f);
   glVertex2f(-0.55f, -0.6f);
   glEnd();

   glColor3f(0.0f, 0.8f, 0.0f); // Tree leaves color
   glBegin(GL_TRIANGLES);
   glVertex2f(-0.59f, -0.6f);
   glVertex2f(-0.49f, -0.6f);
   glVertex2f(-0.54f, -0.5f);
   glEnd();
}

void drawLamppost() {

   glColor3f(0.2f, 0.2f, 0.2f); // Lamppost color
   glBegin(GL_QUADS);
   glVertex2f(0.7f, -0.8f);
   glVertex2f(0.71f, -0.8f);
   glVertex2f(0.71f, -0.6f);
   glVertex2f(0.7f, -0.6f);
   glEnd();

   glColor3f(0.9f, 0.9f, 0.0f); // Lamppost light color
   glBegin(GL_POLYGON);
   for (int i = 0; i < 360; i++) {
      float angle = i * 3.14159265359 / 180;
      float x = 0.705f + 0.015f * cos(angle);
      float y = -0.55f + 0.015f * sin(angle);
      glVertex2f(x, y);
   }
```

```
    glEnd();
}

void display() {
    glClearColor(0.0f, 0.0f, 0.0f, 1.0f);
    glClear(GL_COLOR_BUFFER_BIT);
    glLineWidth(7.5);


    drawBuilding();
    drawBench();
    drawTree();
    drawLamppost();

    glFlush();
}

int main(int argc, char** argv) {
    glutInitWindowSize(1000, 800);
    glutInit(&argc, argv);
    glutCreateWindow("Senario");
    glutDisplayFunc(display);
    glutMainLoop();
    return 0;
}
```

**Output Screenshot (Full Screen)-**


Senario
Type here to search
76°F
10:33 PM
11/1/2023