**Lab Taks-3**

Submission Guidelines-

* Rename the file to your id only. If your id is 18-XXXXX-1, then the file name must be 18-XXXXX-1.docx.
* Must submit within time that will be discussed in class VUES to the section named Lab Tak-3
* Must include resources for all the section in the table

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| **Question- 1**  Draw five storied building with windows and a front door |
| **Graph Plot (Picture)-** |
| **Code-**  **#include <windows.h> // for MS Windows**  **#include <GL/glut.h> // GLUT, include glu.h and gl.h**  **/\* Handler for window-repaint event. Call back when the window first appears and**  **whenever the window needs to be re-painted. \*/**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f); // Set background color to black and opaque**  **glClear(GL\_COLOR\_BUFFER\_BIT); // Clear the color buffer (background)**  **glLineWidth(10.0);**  **// Draw a Red 1x1 Square centered at origin**  **//For the background**  **glColor3ub(230, 230, 250);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.0f,0.0f);**  **glVertex2f(180.0f,0.0f);**  **glVertex2f(180.0f,180.0f);**  **glVertex2f(0.0f,180.0f);**  **glEnd();**  **//for base green grass line**  **glColor3ub(124,252,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.0f,0.0f);**  **glVertex2f(150.0f,0.0f);**  **glVertex2f(150.0f,3.0f);**  **glVertex2f(0.0f,3.0f);**  **glEnd();**  **//For the building frame structure**  **glColor3ub(138 ,43, 226);**  **glBegin(GL\_QUADS);**  **glVertex2f(10.0f,10.0f);**  **glVertex2f(120.0f,10.0f);**  **glVertex2f(120.0f,130.0f);**  **glVertex2f(30.0f,130.0f);**  **glEnd();**  **//For 2D view**  **glColor3ub(218, 112, 214);**  **glBegin(GL\_QUADS);**  **glVertex2f(10.0f,10.0f);**  **glVertex2f(30.0f,10.0f);**  **glVertex2f(30.0f,130.0f);**  **glVertex2f(10.0f,100.0f);**  **glEnd();**  **//For the building door**  **glColor3ub(0,0,255);**  **glBegin(GL\_QUADS);**  **glVertex2f(65.0f,10.0f);**  **glVertex2f(85.0f,10.0f);**  **glVertex2f(85.0f,30.0f);**  **glVertex2f(65.0f,30.0f);**  **glEnd();**  **//for black line above the door**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,35.0f);**  **glVertex2f(120.0f,35.0f);**  **glEnd();**  **//LEFT SIDE WINDOW**  **//Window of first floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(40.0f,20.0f);**  **glVertex2f(60.0f,20.0f);**  **glVertex2f(60.0f,30.0f);**  **glVertex2f(40.0f,30.0f);**  **glEnd();**  **//for black line above the first floor window**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,55.0f);**  **glVertex2f(120.0f,55.0f);**  **glEnd();**  **//Window of second floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(40.0f,40.0f);**  **glVertex2f(60.0f,40.0f);**  **glVertex2f(60.0f,50.0f);**  **glVertex2f(40.0f,50.0f);**  **glEnd();**  **//for black line above the second floor window**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,75.0f);**  **glVertex2f(120.0f,75.0f);**  **glEnd();**  **//Window of third floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(40.0f,60.0f);**  **glVertex2f(60.0f,60.0f);**  **glVertex2f(60.0f,70.0f);**  **glVertex2f(40.0f,70.0f);**  **glEnd();**  **//for black line above the third floor window**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,75.0f);**  **glVertex2f(120.0f,75.0f);**  **glEnd();**  **//Window of fourth floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(40.0f,80.0f);**  **glVertex2f(60.0f,80.0f);**  **glVertex2f(60.0f,90.0f);**  **glVertex2f(40.0f,90.0f);**  **glEnd();**  **//for black line above the fourth floor window**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,100.0f);**  **glVertex2f(120.0f,100.0f);**  **glEnd();**  **//Window of fifth floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(40.0f,110.0f);**  **glVertex2f(60.0f,110.0f);**  **glVertex2f(60.0f,120.0f);**  **glVertex2f(40.0f,120.0f);**  **glEnd();**  **//for black line above the fifth floor window**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,130.0f);**  **glVertex2f(120.0f,130.0f);**  **glEnd();**  **//RIGHT SIDE WINDOW**  **//Window of first floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(90.0f,20.0f);**  **glVertex2f(110.0f,20.0f);**  **glVertex2f(110.0f,30.0f);**  **glVertex2f(90.0f,30.0f);**  **glEnd();**  **//Window of second floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(90.0f,40.0f);**  **glVertex2f(110.0f,40.0f);**  **glVertex2f(110.0f,50.0f);**  **glVertex2f(90.0f,50.0f);**  **glEnd();**  **//Window of third floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(90.0f,60.0f);**  **glVertex2f(110.0f,60.0f);**  **glVertex2f(110.0f,70.0f);**  **glVertex2f(90.0f,70.0f);**  **glEnd();**  **//Window of fourth floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(90.0f,80.0f);**  **glVertex2f(110.0f,80.0f);**  **glVertex2f(110.0f,90.0f);**  **glVertex2f(90.0f,90.0f);**  **glEnd();**  **//Window of fifth floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(90.0f,110.0f);**  **glVertex2f(110.0f,110.0f);**  **glVertex2f(110.0f,120.0f);**  **glVertex2f(90.0f,120.0f);**  **glEnd();**  **//for black line under ground**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(10.0f,5.0f);**  **glVertex2f(120.0f,5.0f);**  **glVertex2f(120.0f,10.0f);**  **glVertex2f(10.0f,10.0f);**  **glEnd();**  **glFlush(); // Render now**  **}**  **/\* Main function: GLUT runs as a console application starting at main() \*/**  **int main(int argc, char\*\* argv) {**  **glutInit(&argc, argv); // Initialize GLUT**  **glutCreateWindow("Five Storied Building"); // Create a window with the given title**  **glutInitWindowSize(2000, 1600);**  **gluOrtho2D(0.0,150.0,0.0,150.0); //resize the axis size**  **glutDisplayFunc(display); // Register display callback handler for window re-paint**  **glutMainLoop(); // Enter the event-processing loop**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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| **Question- 2**  Draw a tree |
| **Graph Plot (Picture)-** |
| **Code-**  **#include <windows.h>**  **#include <GL/glut.h>**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f);**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **glLineWidth(10.0);**  **//For the background**  **glColor3ub(0,191,255);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.0f,0.0f);**  **glVertex2f(300.0f,0.0f);**  **glVertex2f(300.0f,250.0f);**  **glVertex2f(0.0f,250.0f);**  **glEnd();**  **//for base green grass line**  **glColor3ub(124,252,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.0f,0.0f);**  **glVertex2f(300.0f,0.0f);**  **glVertex2f(300.0f,5.0f);**  **glVertex2f(0.0f,5.0f);**  **glEnd();**  **//for Tree trunk**  **glColor3ub(184,134,11);**  **glBegin(GL\_QUADS);**  **glVertex2f(145.0f,5.0f);**  **glVertex2f(155.0f,5.0f);**  **glVertex2f(152.0f,50.0f);**  **glVertex2f(148.0f,50.0f);**  **glEnd();**  **//for first layer Tree leaf**  **glColor3ub(34,139,34);**  **glBegin(GL\_QUADS);**  **glVertex2f(135.0f,50.0f);**  **glVertex2f(165.0f,50.0f);**  **glVertex2f(157.0f,60.0f);**  **glVertex2f(143.0f,60.0f);**  **glEnd();**  **//for second layer Tree leaf**  **glColor3ub(34,139,34);**  **glBegin(GL\_QUADS);**  **glVertex2f(139.0f,60.0f);**  **glVertex2f(161.0f,60.0f);**  **glVertex2f(153.0f,70.0f);**  **glVertex2f(147.0f,70.0f);**  **glEnd();**  **//for third layer Tree leaf**  **glColor3ub(34,139,34);**  **glBegin(GL\_POLYGON);**  **glVertex2f(143.0f,70.0f);**  **glVertex2f(157.0f,70.0f);**  **glVertex2f(150.0f,80.0f);**  **glEnd();**  **glFlush(); // Render now**  **}**  **int main(int argc, char\*\* argv) {**  **glutInit(&argc, argv);**  **glutCreateWindow("Tree");**  **glutInitWindowSize(320, 320);**  **gluOrtho2D(0.0,300,0.0,250);**  **glutDisplayFunc(display);**  **glutMainLoop();**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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| **Question- 3**  Draw a lamppost with black background |
| **Graph Plot (Picture)-** |
| **Code-**  **#include <windows.h>**  **#include <GL/glut.h>**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f); // Set background color to black and opaque**  **glClear(GL\_COLOR\_BUFFER\_BIT); // Clear the color buffer (background)**  **glLineWidth(10.0);**  **//For the background**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.0f,0.0f);**  **glVertex2f(350.0f,0.0f);**  **glVertex2f(350.0f,300.0f);**  **glVertex2f(0.0f,300.0f);**  **glEnd();**  **//for green line**  **glColor3ub(124,252,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.0f,0.0f);**  **glVertex2f(300.0f,0.0f);**  **glVertex2f(300.0f,5.0f);**  **glVertex2f(0.0f,5.0f);**  **glEnd();**  **//for white line**  **glColor3f(1.0f,1.0f,1.0f);**  **glBegin(GL\_QUADS);**  **glVertex2f(185.0f,2.0f);**  **glVertex2f(220.0f,2.0f);**  **glVertex2f(220.0f,5.0f);**  **glVertex2f(185.0f,5.0f);**  **glEnd();**  **//for lamppost pillar**  **glColor3ub(128,128,128);**  **glBegin(GL\_POLYGON);**  **glVertex2f(170.0f,5.0f);**  **glVertex2f(175.0f,5.0f);**  **glVertex2f(175.0f,55.0f);**  **glVertex2f(170.0f,55.0f);**  **glEnd();**  **//for lamp holder**  **glColor3ub(128,128,128);**  **glBegin(GL\_QUADS);**  **glVertex2f(170.0f,55.0f);**  **glVertex2f(200.0f,55.0f);**  **glVertex2f(200.0f,60.0f);**  **glVertex2f(170.0f,60.0f);**  **glEnd();**  **//for lamp**  **glColor3f(1.0f,1.0f,1.0f);**  **glBegin(GL\_QUADS);**  **glVertex2f(185.0f,50.5f);**  **glVertex2f(200.0f,50.5f);**  **glVertex2f(200.0f,57.0f);**  **glVertex2f(185.0f,57.0f);**  **glEnd();**  **glFlush(); // Render now**  **}**  **/\* Main function: GLUT runs as a console application starting at main() \*/**  **int main(int argc, char\*\* argv) {**  **glutInit(&argc, argv); // Initialize GLUT**  **glutCreateWindow("Lamppost"); // Create a window with the given title**  **glutInitWindowSize(1500, 1200);**  **gluOrtho2D(0.0,250.0,0.0,150.0); //resize the axis size**  **glutDisplayFunc(display); // Register display callback handler for window re-paint**  **glutMainLoop(); // Enter the event-processing loop**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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| **Question- 4**  Draw a bench |
| **Graph Plot (Picture)-** |
| **Code-**  **#include <windows.h> // for MS Windows**  **#include <GL/glut.h> // GLUT, include glu.h and gl.h**  **/\* Handler for window-repaint event. Call back when the window first appears and**  **whenever the window needs to be re-painted. \*/**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f); // Set background color to black and opaque**  **glClear(GL\_COLOR\_BUFFER\_BIT); // Clear the color buffer (background)**  **glLineWidth(10.0);**  **// Draw a Red 1x1 Square centered at origin**  **//For the background**  **glColor3ub(0,191,255);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.0f,0.0f);**  **glVertex2f(250.0f,0.0f);**  **glVertex2f(250.0f,200.0f);**  **glVertex2f(0.0f,200.0f);**  **glEnd();**  **//for base green grass line**  **glColor3ub(124,252,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.0f,0.0f);**  **glVertex2f(250.0f,0.0f);**  **glVertex2f(250.0f,5.0f);**  **glVertex2f(0.0f,5.0f);**  **glEnd();**  **//for bench**  **//first leg**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(185.0f,0.0f);**  **glVertex2f(190.0f,0.0f);**  **glVertex2f(190.00f,10.0f);**  **glVertex2f(185.0f,10.0f);**  **glEnd();**  **//second leg**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(195.0f,0.0f);**  **glVertex2f(197.0f,0.0f);**  **glVertex2f(197.0f,10.0f);**  **glVertex2f(195.0f,10.0f);**  **glEnd();**  **//bench seat position**  **glColor3ub(255 ,69 ,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(180.0f,10.0f);**  **glVertex2f(240.0f,10.0f);**  **glVertex2f(240.0f,15.0f);**  **glVertex2f(180.0f,15.0f);**  **glEnd();**  **//third leg**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(223.0f,0.0f);**  **glVertex2f(225.0f,0.0f);**  **glVertex2f(225.0f,10.0f);**  **glVertex2f(223.0f,10.0f);**  **glEnd();**  **//fourth leg**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(230.0f,0.0f);**  **glVertex2f(235.0f,0.0f);**  **glVertex2f(235.0f,10.0f);**  **glVertex2f(230.0f,10.0f);**  **glEnd();**  **//backside first portion**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(195.0f,15.0f);**  **glVertex2f(200.0f,15.0f);**  **glVertex2f(200.0f,40.0f);**  **glVertex2f(195.0f,40.0f);**  **glEnd();**  **//backside second portion**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(220.0f,15.0f);**  **glVertex2f(225.0f,15.0f);**  **glVertex2f(225.0f,40.0f);**  **glVertex2f(220.0f,40.0f);**  **glEnd();**  **//backside third portion**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(185.0f,20.0f);**  **glVertex2f(235.0f,20.0f);**  **glVertex2f(235.0f,25.0f);**  **glVertex2f(185.0f,25.0f);**  **glEnd();**  **//backside fourth portion**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(185.0f,30.0f);**  **glVertex2f(235.0f,30.0f);**  **glVertex2f(235.0f,35.0f);**  **glVertex2f(185.0f,35.0f);**  **glEnd();**  **glFlush(); // Render now**  **}**  **/\* Main function: GLUT runs as a console application starting at main() \*/**  **int main(int argc, char\*\* argv) {**  **glutInit(&argc, argv); // Initialize GLUT**  **glutCreateWindow("Bench"); // Create a window with the given title**  **glutInitWindowSize(320, 320);**  **gluOrtho2D(0.0,250.0,0.0,200.0); //resize the axis size**  **glutDisplayFunc(display); // Register display callback handler for window re-paint**  **glutMainLoop(); // Enter the event-processing loop**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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| **Question- 5**  Use the building, tree, lamppost and bench to create a scenario |
| **Graph Plot (Picture)-** |
| **Code-**  **#include <windows.h>**  **#include <GL/glut.h>**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f);**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **glLineWidth(10.0);**  **//For the background**  **glColor3ub(0,191,255);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.0f,0.0f);**  **glVertex2f(250.0f,0.0f);**  **glVertex2f(250.0f,200.0f);**  **glVertex2f(0.0f,200.0f);**  **glEnd();**  **//for base green grass line**  **glColor3ub(124,252,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.0f,0.0f);**  **glVertex2f(300.0f,0.0f);**  **glVertex2f(300.0f,5.0f);**  **glVertex2f(0.0f,5.0f);**  **glEnd();**  **//For the building frame structure**  **glColor3ub(138 ,43, 226);**  **glBegin(GL\_QUADS);**  **glVertex2f(10.0f,5.0f);**  **glVertex2f(120.0f,5.0f);**  **glVertex2f(120.0f,130.0f);**  **glVertex2f(30.0f,130.0f);**  **glEnd();**  **//For 2D view**  **glColor3ub(218, 112, 214);**  **glBegin(GL\_QUADS);**  **glVertex2f(10.0f,10.0f);**  **glVertex2f(30.0f,10.0f);**  **glVertex2f(30.0f,130.0f);**  **glVertex2f(10.0f,100.0f);**  **glEnd();**  **//For the building door**  **glColor3ub(0,0,255);**  **glBegin(GL\_QUADS);**  **glVertex2f(65.0f,10.0f);**  **glVertex2f(85.0f,10.0f);**  **glVertex2f(85.0f,30.0f);**  **glVertex2f(65.0f,30.0f);**  **glEnd();**  **//for black line above the door**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,35.0f);**  **glVertex2f(120.0f,35.0f);**  **glEnd();**  **//LEFT SIDE WINDOW**  **//Window of first floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(40.0f,20.0f);**  **glVertex2f(60.0f,20.0f);**  **glVertex2f(60.0f,30.0f);**  **glVertex2f(40.0f,30.0f);**  **glEnd();**  **//for black line above the first floor window**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,55.0f);**  **glVertex2f(120.0f,55.0f);**  **glEnd();**  **//Window of second floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(40.0f,40.0f);**  **glVertex2f(60.0f,40.0f);**  **glVertex2f(60.0f,50.0f);**  **glVertex2f(40.0f,50.0f);**  **glEnd();**  **//for black line above the second floor window**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,75.0f);**  **glVertex2f(120.0f,75.0f);**  **glEnd();**  **//Window of third floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(40.0f,60.0f);**  **glVertex2f(60.0f,60.0f);**  **glVertex2f(60.0f,70.0f);**  **glVertex2f(40.0f,70.0f);**  **glEnd();**  **//for black line above the third floor window**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,75.0f);**  **glVertex2f(120.0f,75.0f);**  **glEnd();**  **//Window of fourth floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(40.0f,80.0f);**  **glVertex2f(60.0f,80.0f);**  **glVertex2f(60.0f,90.0f);**  **glVertex2f(40.0f,90.0f);**  **glEnd();**  **//for black line above the fourth floor window**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,100.0f);**  **glVertex2f(120.0f,100.0f);**  **glEnd();**  **//Window of fifth floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(40.0f,110.0f);**  **glVertex2f(60.0f,110.0f);**  **glVertex2f(60.0f,120.0f);**  **glVertex2f(40.0f,120.0f);**  **glEnd();**  **//for black line above the fifth floor window**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(30.0f,130.0f);**  **glVertex2f(120.0f,130.0f);**  **glEnd();**  **//RIGHT SIDE WINDOW**  **//Window of first floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(90.0f,20.0f);**  **glVertex2f(110.0f,20.0f);**  **glVertex2f(110.0f,30.0f);**  **glVertex2f(90.0f,30.0f);**  **glEnd();**  **//Window of second floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(90.0f,40.0f);**  **glVertex2f(110.0f,40.0f);**  **glVertex2f(110.0f,50.0f);**  **glVertex2f(90.0f,50.0f);**  **glEnd();**  **//Window of third floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(90.0f,60.0f);**  **glVertex2f(110.0f,60.0f);**  **glVertex2f(110.0f,70.0f);**  **glVertex2f(90.0f,70.0f);**  **glEnd();**  **//Window of fourth floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(90.0f,80.0f);**  **glVertex2f(110.0f,80.0f);**  **glVertex2f(110.0f,90.0f);**  **glVertex2f(90.0f,90.0f);**  **glEnd();**  **//Window of fifth floor**  **glColor3ub(0,0,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(90.0f,110.0f);**  **glVertex2f(110.0f,110.0f);**  **glVertex2f(110.0f,120.0f);**  **glVertex2f(90.0f,120.0f);**  **glEnd();**  **//for black line under ground**  **glColor3f(0.0f,0.0f,0.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(10.0f,5.0f);**  **glVertex2f(120.0f,5.0f);**  **glVertex2f(120.0f,10.0f);**  **glVertex2f(10.0f,10.0f);**  **glEnd();**  **glFlush(); // Render now**  **//for Tree trunk**  **glColor3ub(184,134,11);**  **glBegin(GL\_QUADS);**  **glVertex2f(145.0f,5.0f);**  **glVertex2f(155.0f,5.0f);**  **glVertex2f(152.0f,50.0f);**  **glVertex2f(148.0f,50.0f);**  **glEnd();**  **//for first layer Tree leaf**  **glColor3ub(34,139,34);**  **glBegin(GL\_QUADS);**  **glVertex2f(135.0f,50.0f);**  **glVertex2f(165.0f,50.0f);**  **glVertex2f(157.0f,60.0f);**  **glVertex2f(143.0f,60.0f);**  **glEnd();**  **//for second layer Tree leaf**  **glColor3ub(34,139,34);**  **glBegin(GL\_QUADS);**  **glVertex2f(139.0f,60.0f);**  **glVertex2f(161.0f,60.0f);**  **glVertex2f(153.0f,70.0f);**  **glVertex2f(147.0f,70.0f);**  **glEnd();**  **//for third layer Tree leaf**  **glColor3ub(34,139,34);**  **glBegin(GL\_POLYGON);**  **glVertex2f(143.0f,70.0f);**  **glVertex2f(157.0f,70.0f);**  **glVertex2f(150.0f,80.0f);**  **glEnd();**  **glFlush(); // Render now**  **//for white line**  **glColor3f(1.0f,1.0f,1.0f);**  **glBegin(GL\_QUADS);**  **glVertex2f(185.0f,2.0f);**  **glVertex2f(220.0f,2.0f);**  **glVertex2f(220.0f,5.0f);**  **glVertex2f(185.0f,5.0f);**  **glEnd();**  **//for lamppost pillar**  **glColor3ub(128,128,128);**  **glBegin(GL\_POLYGON);**  **glVertex2f(170.0f,5.0f);**  **glVertex2f(175.0f,5.0f);**  **glVertex2f(175.0f,55.0f);**  **glVertex2f(170.0f,55.0f);**  **glEnd();**  **//for lamp holder**  **glColor3ub(128,128,128);**  **glBegin(GL\_QUADS);**  **glVertex2f(170.0f,55.0f);**  **glVertex2f(200.0f,55.0f);**  **glVertex2f(200.0f,60.0f);**  **glVertex2f(170.0f,60.0f);**  **glEnd();**  **//for lamp**  **glColor3f(1.0f,1.0f,1.0f);**  **glBegin(GL\_QUADS);**  **glVertex2f(185.0f,50.5f);**  **glVertex2f(200.0f,50.5f);**  **glVertex2f(200.0f,57.0f);**  **glVertex2f(185.0f,57.0f);**  **glEnd();**  **glFlush(); // Render now**  **//for bench**  **//first leg**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(185.0f,0.0f);**  **glVertex2f(190.0f,0.0f);**  **glVertex2f(190.00f,10.0f);**  **glVertex2f(185.0f,10.0f);**  **glEnd();**  **//second leg**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(195.0f,0.0f);**  **glVertex2f(197.0f,0.0f);**  **glVertex2f(197.0f,10.0f);**  **glVertex2f(195.0f,10.0f);**  **glEnd();**  **//bench seat position**  **glColor3ub(255 ,69 ,0);**  **glBegin(GL\_QUADS);**  **glVertex2f(180.0f,10.0f);**  **glVertex2f(240.0f,10.0f);**  **glVertex2f(240.0f,15.0f);**  **glVertex2f(180.0f,15.0f);**  **glEnd();**  **//third leg**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(223.0f,0.0f);**  **glVertex2f(225.0f,0.0f);**  **glVertex2f(225.0f,10.0f);**  **glVertex2f(223.0f,10.0f);**  **glEnd();**  **//fourth leg**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(230.0f,0.0f);**  **glVertex2f(235.0f,0.0f);**  **glVertex2f(235.0f,10.0f);**  **glVertex2f(230.0f,10.0f);**  **glEnd();**  **//backside first portion**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(195.0f,15.0f);**  **glVertex2f(200.0f,15.0f);**  **glVertex2f(200.0f,40.0f);**  **glVertex2f(195.0f,40.0f);**  **glEnd();**  **//backside second portion**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(220.0f,15.0f);**  **glVertex2f(225.0f,15.0f);**  **glVertex2f(225.0f,40.0f);**  **glVertex2f(220.0f,40.0f);**  **glEnd();**  **//backside third portion**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(185.0f,20.0f);**  **glVertex2f(235.0f,20.0f);**  **glVertex2f(235.0f,25.0f);**  **glVertex2f(185.0f,25.0f);**  **glEnd();**  **//backside fourth portion**  **glColor3ub(139,69,19);**  **glBegin(GL\_QUADS);**  **glVertex2f(185.0f,30.0f);**  **glVertex2f(235.0f,30.0f);**  **glVertex2f(235.0f,35.0f);**  **glVertex2f(185.0f,35.0f);**  **glEnd();**  **glFlush(); // Render now**  **}**  **/\* Main function: GLUT runs as a console application starting at main() \*/**  **int main(int argc, char\*\* argv) {**  **glutInit(&argc, argv); // Initialize GLUT**  **glutCreateWindow("Scenario"); // Create a window with the given title**  **glutInitWindowSize(320, 320);**  **gluOrtho2D(0.0,250.0,0.0,200.0); //resize the axis size**  **glutDisplayFunc(display); // Register display callback handler for window re-paint**  **glutMainLoop(); // Enter the event-processing loop**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |