**Lab Taks-3**

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| **Question- 1**  Draw five storied building with windows and a front door |
| **Graph Plot (Picture)-** |
| **Code-**  #include <math.h>  #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 building(){  // buildin right extension  glBegin(GL\_POLYGON);  glColor3f(1, 0.5, 0);  glVertex2f(52, 75.66478);  glVertex2f(160, 0);  glVertex2f(140, 0);  glVertex2f(52, 60.576048);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 0.6, 0);  glVertex2f(52, 60.576048);  glVertex2f(140, 0);  glVertex2f(140, -80);  glVertex2f(52, -80);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 0.7, 0);  glVertex2f(10, 270);  glVertex2f(-32, 210);  glVertex2f(-32, 20);  glVertex2f(52, 20);  glVertex2f(52, 210);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 0.5, 0);  glVertex2f(-39.9, 20);  glVertex2f(-60, 0);  glVertex2f(80, 0);  glVertex2f(60, 20);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 0.7, 0);  glVertex2f(-40, 0);  glVertex2f(-40, -83);  glVertex2f(60, -83);  glVertex2f(60, 0);  glEnd();  // main front door  // main door color  glBegin(GL\_POLYGON);  glColor3f(0.7, 0.8, 0.8);  glVertex2f(-20, -83);  glVertex2f(-20, -20);  glVertex2f(-8.5, -13.5);  glVertex2f(3, -9.5);  glVertex2f(16, -9.5);  glVertex2f(28, -13);  glVertex2f(40, -20);  glVertex2f(40, -83);  glEnd();  //two horizontal section  glBegin(GL\_POLYGON);  glColor3f(0, 0, 0);  glVertex2f(-12, -30.9999986);  glVertex2f(31.9994665, -30.9999986);  glVertex2f(31.9994665, -29.9999986);  glVertex2f(-12, -30);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 0.5, 0);  glVertex2f(10, 270);  glVertex2f(-32, 210);  glVertex2f(-44, 210);  glVertex2f(10, 285);  glVertex2f(64, 210);  glVertex2f(52, 210);  glEnd();  //right window  glBegin(GL\_POLYGON);  glColor3f(0.6, 0.6, 0.6);  glVertex2f(80,-30);  glVertex2f(80,-60);  glVertex2f(110,-60);  glVertex2f(110,-30);  glEnd();  //windows  glColor3f(0.6, 0.6, 0.6);  glBegin(GL\_POLYGON);  glVertex2f(-20, 60);  glVertex2f(-20, 30);  glVertex2f(0, 30);  glVertex2f(0, 60);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(20, 60);  glVertex2f(20, 30);  glVertex2f(40, 30);  glVertex2f(40, 60);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(-20, 100);  glVertex2f(-20, 70);  glVertex2f(0, 70);  glVertex2f(0, 100);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(20, 100);  glVertex2f(20, 70);  glVertex2f(40, 70);  glVertex2f(40,100);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(-20, 140);  glVertex2f(-20, 110);  glVertex2f(0, 110);  glVertex2f(0, 140);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(20, 140);  glVertex2f(20, 110);  glVertex2f(40, 110);  glVertex2f(40,140);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(-20, 180);  glVertex2f(-20, 150);  glVertex2f(0, 150);  glVertex2f(0, 180);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(20, 180);  glVertex2f(20, 150);  glVertex2f(40, 150);  glVertex2f(40,180);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(-20, 220);  glVertex2f(-20, 190);  glVertex2f(0, 190);  glVertex2f(0, 220);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(20, 220);  glVertex2f(20, 190);  glVertex2f(40, 190);  glVertex2f(40,220);  glEnd();  //right chimni  glBegin(GL\_POLYGON);  glColor3f(0.6, 0.6, 0.6);  glVertex2f(100, 60);  glVertex2f(99.9899323003119, 42.04304600);  glVertex2f(119.9380400662845, 28.0674041695164);  glVertex2f(120,60);  glEnd();  }  void outlilne\_building(){  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(10, 270);  glVertex2f(-32, 210);  glVertex2f(-32, 210);  glVertex2f(-44, 210);  glVertex2f(-44, 210);  glVertex2f(10, 285);  glVertex2f(10, 285);  glVertex2f(64, 210);  glVertex2f(64, 210);  glVertex2f(52, 210);  glVertex2f(52, 210);  glVertex2f(10, 270);  glEnd();  glBegin(GL\_LINES);  glVertex2f(-32, 210);  glVertex2f(-32, 20);  glVertex2f(-32, 20);  glVertex2f(52, 20);  glVertex2f(52, 20);  glVertex2f(52, 210);  glEnd();  glBegin(GL\_LINES);  glVertex2f(-39.9, 20);  glVertex2f(-60, 0);  glVertex2f(-60, 0);  glVertex2f(80, 0);  glVertex2f(80, 0);  glVertex2f(60, 20);  glVertex2f(60, 20);  glVertex2f(-39.9, 20);  glEnd();  //lowere portion outline  glBegin(GL\_LINES);  glVertex2f(-40, 0);  glVertex2f(-40, -83);  glVertex2f(-40, -83);  glVertex2f(60, -83);  glVertex2f(60, -83);  glVertex2f(60, 0);  glEnd();  glBegin(GL\_LINES);  glVertex2f(52, 75.66478);  glVertex2f(160, 0);  glVertex2f(160, 0);  glVertex2f(140, 0);  glVertex2f(140, 0);  glVertex2f(52, 60.576048);  glVertex2f(52, 60.576048);  glVertex2f(52, 75.66478);  glEnd();  glBegin(GL\_LINES);  glVertex2f(100, 60);  glVertex2f(99.9899323003119, 42.04304600);  glVertex2f(99.9899323003119, 42.04304600);  glVertex2f(119.9380400662845, 28.0674041695164);  glVertex2f(119.9380400662845, 28.0674041695164);  glVertex2f(120,60);  glVertex2f(120,60);  glVertex2f(100, 60);  glEnd();  //right window  glBegin(GL\_LINES);  glVertex2f(80,-30);  glVertex2f(80,-60);  glVertex2f(80,-60);  glVertex2f(110,-60);  glVertex2f(110,-60);  glVertex2f(110,-30);  glVertex2f(110,-30);  glVertex2f(80,-30);  glEnd();  //LOWER OUTLILNE UNDER THE RIGHT WINDOW  glBegin(GL\_LINES);  glVertex2f(60,-80);  glVertex2f(140,-80);  glVertex2f(140,-80);  glVertex2f(140,0);  glEnd();  //10 small windows outline  glBegin(GL\_LINES);  //first  glVertex2f(-20, 60);  glVertex2f(-20, 30);  glVertex2f(-20, 30);  glVertex2f(0, 30);  glVertex2f(0, 30);  glVertex2f(0, 60);  glVertex2f(0, 60);  glVertex2f(-20, 60);  //2nd  glVertex2f(20, 60);  glVertex2f(20, 30);  glVertex2f(20, 30);  glVertex2f(40, 30);  glVertex2f(40, 30);  glVertex2f(40, 60);  glVertex2f(40, 60);  glVertex2f(20, 60);  //3rd  glVertex2f(-20, 100);  glVertex2f(-20, 70);  glVertex2f(-20, 70);  glVertex2f(0, 70);  glVertex2f(0, 70);  glVertex2f(0, 100);  glVertex2f(0, 100);  glVertex2f(-20, 100);  //4th  glVertex2f(20, 100);  glVertex2f(20, 70);  glVertex2f(20, 70);  glVertex2f(40, 70);  glVertex2f(40, 70);  glVertex2f(40,100);  glVertex2f(40,100);  glVertex2f(20, 100);  //5th  glVertex2f(-20, 140);  glVertex2f(-20, 110);  glVertex2f(-20, 110);  glVertex2f(0, 110);  glVertex2f(0, 110);  glVertex2f(0, 140);  glVertex2f(0, 140);  glVertex2f(-20, 140);  //6th  glVertex2f(20, 140);  glVertex2f(20, 110);  glVertex2f(20, 110);  glVertex2f(40, 110);  glVertex2f(40, 110);  glVertex2f(40,140);  glVertex2f(40,140);  glVertex2f(20, 140);  //6th  glVertex2f(-20, 180);  glVertex2f(-20, 150);  glVertex2f(-20, 150);  glVertex2f(0, 150);  glVertex2f(0, 150);  glVertex2f(0, 180);  glVertex2f(0, 180);  glVertex2f(-20, 180);  //7th  glVertex2f(20, 180);  glVertex2f(20, 150);  glVertex2f(20, 150);  glVertex2f(40, 150);  glVertex2f(40, 150);  glVertex2f(40,180);  glVertex2f(40,180);  glVertex2f(20, 180);  //8th  glVertex2f(-20, 220);  glVertex2f(-20, 190);  glVertex2f(-20, 190);  glVertex2f(0, 190);  glVertex2f(0, 190);  glVertex2f(0, 220);  glVertex2f(0, 220);  glVertex2f(-20, 220);  //9th  glVertex2f(20, 220);  glVertex2f(20, 190);  glVertex2f(20, 190);  glVertex2f(40, 190);  glVertex2f(40, 190);  glVertex2f(40,220);  glVertex2f(40,220);  glVertex2f(20, 220);  glEnd();  }  void main\_doorL(){  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(-12, -83);  glVertex2f(-12, -22);  glVertex2f(-12, -22);  glVertex2f(-6, -18);  glVertex2f(-6, -18);  glVertex2f(3, -16);  glVertex2f(3, -16);  glVertex2f(16, -16);  glVertex2f(16, -16);  glVertex2f(27, -19);  glVertex2f(27, -19);  glVertex2f(32, -22);  glVertex2f(32, -22);  glVertex2f(32, -83);  glVertex2f(-20, -83);  glVertex2f(-20, -20);  glVertex2f(-20, -20);  glVertex2f(-8.5, -13.5);  glVertex2f(-8.5, -13.5);  glVertex2f(3, -9.5);  glVertex2f(3, -9.5);  glVertex2f(16, -9.5);  glVertex2f(16, -9.5);  glVertex2f(28, -13);  glVertex2f(28, -13);  glVertex2f(40, -20);  glVertex2f(40, -20);  glVertex2f(40, -83);  glVertex2f(40, -83);  glEnd();  // two doors and one open  //left open door  glBegin(GL\_LINES);  glVertex2f(-12, -30.999998523);  glVertex2f(-12, -83);  glVertex2f(-12, -83);  glVertex2f(6.5, -79.5);  glVertex2f(6.5, -79.5);  glVertex2f(6.5, -34.5);  glVertex2f(6.5, -34.5);  glVertex2f(-12, -30.999998523);  glEnd();  //right closed door  glBegin(GL\_LINES);  glVertex2f(10.00057437, -30.999998523);  glVertex2f(10.033969079, -83);  glVertex2f(10.033969079, -83);  glVertex2f(31.996384, -83);  glVertex2f(31.996384, -83);  glVertex2f(31.996384, -30.999998523);  glEnd();  //four squares of the two doors  //right two squares  glBegin(GL\_LINES);  //first square  glVertex2f(13, -34);  glVertex2f(13, -54.5);  glVertex2f(13, -54.5);  glVertex2f(28, -54.5);  glVertex2f(28, -54.5);  glVertex2f(28, -34);  glVertex2f(28, -34);  glVertex2f(13, -34);  //second square  glVertex2f(13, -61);  glVertex2f(13, -80);  glVertex2f(13, -80);  glVertex2f(28, -80);  glVertex2f(28, -80);  glVertex2f(28, -61);  glVertex2f(28, -61);  glVertex2f(13, -61);  //left two squares  //first square  glVertex2f(-9, -35.5);  glVertex2f(-9, -53.5);  glVertex2f(-9, -53.5);  glVertex2f(3.6, -54.6);  glVertex2f(3.6, -54.6);  glVertex2f(3.6, -37.4);  glVertex2f(3.6, -37.4);  glVertex2f(-9, -35.5);  //second square  glVertex2f(-9, -57.5);  glVertex2f(-9, -75.8);  glVertex2f(-9, -75.8);  glVertex2f(3.6, -74.4);  glVertex2f(3.6, -74.4);  glVertex2f(3.6, -59.35);  glVertex2f(3.6, -59.35);  glVertex2f(-9, -57.5);  //two lower curves out of total 4 curves  //3rd lower curve from up  glVertex2f(-3.51056, -29.880283172);  glVertex2f(-2, -25.5);  glVertex2f(-2, -25.5);  glVertex2f(1.06, -21.68);  glVertex2f(1.06, -21.68);  glVertex2f(6.15, -19.95);  glVertex2f(6.15, -19.95);  glVertex2f(12.6, -20);  glVertex2f(12.6, -20);  glVertex2f(16.8, -22.4);  glVertex2f(16.8, -22.4);  glVertex2f(20.4, -26.4);  glVertex2f(20.4, -26.4);  glVertex2f(21.189489, -29.999999);  //fourth lower curve from up  glVertex2f(0.9894420866, -29.99999999971);  glVertex2f(3.5, -25.5);  glVertex2f(3.5, -25.5);  glVertex2f(7.2, -24.4);  glVertex2f(7.2, -24.4);  glVertex2f(10.8, -24.4);  glVertex2f(10.8, -24.4);  glVertex2f(15, -26);  glVertex2f(15, -26);  glVertex2f(16.603981, -29.999999817);  glEnd();  }  void display() {  glClearColor(1.0f, 1.0f, 1.0f, 1.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  building();  outlilne\_building();  main\_doorL();  glFlush(); // Render now  }  /\* Main function: GLUT runs as a console application starting at main() \*/  int main(int argc, char\*\* argv) {  glutInitWindowSize(600, 800); // Set the window's initial width & height  glutInit(&argc, argv); // Initialize GLUT  glutInitWindowPosition((glutGet(GLUT\_SCREEN\_WIDTH)-600)/2,  (glutGet(GLUT\_SCREEN\_HEIGHT)-800)/2);  glutCreateWindow("OpenGL Setup"); // Create a window with the given title  glutDisplayFunc(display); // Register display callback handler for window re-paint  gluOrtho2D(-80, 170, -100, 300);  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 <math.h>  #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 tree(){  glBegin(GL\_POLYGON);  glColor3f(0.0f, 1.0f, 0.0f);  glVertex2f(-140, 30.5);  glVertex2f(-152.5, 17.5);  glVertex2f(-168, 16.5);  glVertex2f(-179, 27);  glVertex2f(-180, 40);  glVertex2f(-189, 44);  glVertex2f(-197.2, 53.4);  glVertex2f(-200.2, 68);  glVertex2f(-197.5,80.5);  glVertex2f(-192.5,87.5);  glVertex2f(-184.3,91.3);  glVertex2f(-182.6,101.1);  glVertex2f(-176,109);  glVertex2f(-166,111.5);  glVertex2f(-155.8,111.85 );  glVertex2f(-150.8,110.2 );  glVertex2f(-145.4,109.2 );  glVertex2f(-140.4,114 );  glVertex2f(-129.8,117.6 );  glVertex2f(-119.05,117.35 );  glVertex2f(-111.1,113.7 );  glVertex2f(-104.4,106.2 );  glVertex2f(-100,100 );  glVertex2f(-92,100.6 );  glVertex2f(-82,97.4 );  glVertex2f(-76.1,88.8);  glVertex2f(-76,78.8);  glVertex2f(-78.45, 71.9);  glVertex2f(-73.6, 67.8);  glVertex2f(-70.2, 61.4);  glVertex2f(-71, 51);  glVertex2f(-75.86, 43.68);  glVertex2f(-73.04, 37.78);  glVertex2f(-70, 30);  glVertex2f(-73, 19);  glVertex2f(-85, 8.5);  glVertex2f(-99, 7.2);  glVertex2f(-112, 10);  glVertex2f(-120, 24.5);  glEnd();  glColor3f(0.5f, 0.3f, 0.0f);  glBegin(GL\_POLYGON);  /\*  glVertex2f(-120, 24.5);  glVertex2f(-140, 24.5);  glVertex2f(-140, -65);  glVertex2f(-162, -83);  glVertex2f(-108, -83);  glVertex2f(-120, -65);  glVertex2f(-120, -24.5);  \*/  glVertex2f(-140, -65);  glVertex2f(-162, -83);  glVertex2f(-108, -83);  glVertex2f(-120, -65);  glVertex2f(-120, 24.5);  glVertex2f(-140, 24.5);  /\*  \*/  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(-120, 24.5);  glVertex2f(-107.7, 35);  glVertex2f(-113.7, 42);  glVertex2f(-119.7, 37);  glVertex2f(-119.7, 61);  glVertex2f(-131.7, 61);  glVertex2f(-131.7, 43);  glVertex2f(-140.2, 50.6);  glVertex2f(-144.7, 42);  glVertex2f(-140, 37);  glVertex2f(-140, 24.5);  glEnd();  }  void outline\_tree(){  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(-140, -65);  glVertex2f(-162, -83);  glVertex2f(-162, -83);  glVertex2f(-108, -83);  glVertex2f(-108, -83);  glVertex2f(-120, -65);  glVertex2f(-120, -65);  glVertex2f(-120, 24.5);  glVertex2f(-120, 24.5);  glVertex2f(-107.7, 35);  glVertex2f(-107.7, 35);  glVertex2f(-113.7, 42);  glVertex2f(-113.7, 42);  glVertex2f(-119.7, 37);  glVertex2f(-119.7, 37);  glVertex2f(-119.7, 61);  glVertex2f(-119.7, 61);  glVertex2f(-131.7, 61);  glVertex2f(-131.7, 61);  glVertex2f(-131.7, 43);  glVertex2f(-131.7, 43);  glVertex2f(-140.2, 50.6);  glVertex2f(-140.2, 50.6);  glVertex2f(-144.7, 42);  glVertex2f(-144.7, 42);  glVertex2f(-140, 37);  glVertex2f(-140, 37);  glVertex2f(-140, 24.5);  glVertex2f(-140, 24.5);  glVertex2f(-140, -65);  //round green leafs  glVertex2f(-140, 30.5);  glVertex2f(-152.5, 17.5);  glVertex2f(-152.5, 17.5);  glVertex2f(-168, 16.5);  glVertex2f(-168, 16.5);  glVertex2f(-179, 27);  glVertex2f(-179, 27);  glVertex2f(-180, 40);  glVertex2f(-180, 40);  glVertex2f(-189, 44);  glVertex2f(-189, 44);  glVertex2f(-197.2, 53.4);  glVertex2f(-197.2, 53.4);  glVertex2f(-200.2, 68);  glVertex2f(-200.2, 68);  glVertex2f(-197.5,80.5);  glVertex2f(-197.5,80.5);  glVertex2f(-192.5,87.5);  glVertex2f(-192.5,87.5);  glVertex2f(-184.3,91.3);  glVertex2f(-184.3,91.3);  glVertex2f(-182.6,101.1);  glVertex2f(-182.6,101.1);  glVertex2f(-176,109);  glVertex2f(-176,109);  glVertex2f(-166,111.5);  glVertex2f(-166,111.5);  glVertex2f(-155.8,111.85 );  glVertex2f(-155.8,111.85 );  glVertex2f(-150.8,110.2 );  glVertex2f(-150.8,110.2 );  glVertex2f(-145.4,109.2 );  glVertex2f(-145.4,109.2 );  glVertex2f(-140.4,114 );  glVertex2f(-140.4,114 );  glVertex2f(-129.8,117.6 );  glVertex2f(-129.8,117.6 );  glVertex2f(-119.05,117.35 );  glVertex2f(-119.05,117.35 );  glVertex2f(-111.1,113.7 );  glVertex2f(-111.1,113.7 );  glVertex2f(-104.4,106.2 );  glVertex2f(-104.4,106.2 );  glVertex2f(-100,100 );  glVertex2f(-100,100 );  glVertex2f(-92,100.6 );  glVertex2f(-92,100.6 );  glVertex2f(-82,97.4 );  glVertex2f(-82,97.4 );  glVertex2f(-76.1,88.8);  glVertex2f(-76.1,88.8);  glVertex2f(-76,78.8);  glVertex2f(-76,78.8);  glVertex2f(-78.45, 71.9);  glVertex2f(-78.45, 71.9);  glVertex2f(-73.6, 67.8);  glVertex2f(-73.6, 67.8);  glVertex2f(-70.2, 61.4);  glVertex2f(-70.2, 61.4);  glVertex2f(-71, 51);  glVertex2f(-71, 51);  glVertex2f(-75.86, 43.68);  glVertex2f(-75.86, 43.68);  glVertex2f(-73.04, 37.78);  glVertex2f(-73.04, 37.78);  glVertex2f(-70, 30);  glVertex2f(-70, 30);  glVertex2f(-73, 19);  glVertex2f(-73, 19);  glVertex2f(-85, 8.5);  glVertex2f(-85, 8.5);  glVertex2f(-99, 7.2);  glVertex2f(-99, 7.2);  glVertex2f(-112, 10);  glVertex2f(-112, 10);  glVertex2f(-120, 16.5);  //glVertex2f(-120, 24.5);  glEnd();  }  void display() {  glClearColor(1.0f, 1.0f, 1.0f, 1.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  tree();  outline\_tree();  glFlush(); // Render now  }  /\* Main function: GLUT runs as a console application starting at main() \*/  int main(int argc, char\*\* argv) {  glutInitWindowSize(500, 700); // Set the window's initial width & height  glutInit(&argc, argv); // Initialize GLUT  glutInitWindowPosition((glutGet(GLUT\_SCREEN\_WIDTH)-500)/2,  (glutGet(GLUT\_SCREEN\_HEIGHT)-700)/2);  glutCreateWindow("OpenGL Setup"); // Create a window with the given title  glutDisplayFunc(display); // Register display callback handler for window re-paint  gluOrtho2D(-210, -60, -100, +130);  glutMainLoop(); // Enter the event-processing loop  return 0;  } |
| **Output Screenshot (Full Screen)-** |

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| **Question- 3**  Draw a lamppost with black background |
| **Graph Plot (Picture)-** |
| **Code-**  #include <math.h>  #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 outline(){  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(183, -74);  glVertex2f(180, -80);  glVertex2f(180, -80);  glVertex2f(200, -80);  glVertex2f(200, -80);  glVertex2f(197, -74);  glVertex2f(197, -74);  glVertex2f(183, -74);  glEnd();  glBegin(GL\_LINES);  glVertex2f(186, -71);  glVertex2f(185, -74);  glVertex2f(185, -74);  glVertex2f(195, -74);  glVertex2f(195, -74);  glVertex2f(193.5, -71);  glVertex2f(193.5, -71);  glVertex2f(186, -71);  glEnd();  glBegin(GL\_LINES);  glVertex2f(187.5, 9.6);  glVertex2f(185, 9.6);  glVertex2f(185, 9.6);  glVertex2f(182.9, 27.1);  glVertex2f(182.9, 27.1);  glVertex2f(196.6, 27.2);  glVertex2f(196.6, 27.2);  glVertex2f(194.2, 9.6);  glVertex2f(194.2, 9.6);  glVertex2f(191.8, 9.6);  glVertex2f(191.8, 9.6);  glVertex2f(191.625, -71);  glVertex2f(191.625, -71);  glVertex2f(187.5, -71);  glVertex2f(187.5, -71);  glVertex2f(187.5, 9.6);  glEnd();  glBegin(GL\_LINES);  glVertex2f(181.6, 28.6);  glVertex2f(181.6, 27.2);  glVertex2f(181.6, 27.2);  glVertex2f(197.8, 27.2);  glVertex2f(197.8, 27.2);  glVertex2f(197.8, 28.6);  glVertex2f(197.8, 28.6);  glVertex2f(181.6, 28.6);  glEnd();  glBegin(GL\_LINES);  glVertex2f(182.5, 29.4);  glVertex2f(182.5, 28.6);  glVertex2f(182.5, 28.6);  glVertex2f(196.8, 28.6);  glVertex2f(196.8, 28.6);  glVertex2f(196.8, 29.4);  glVertex2f(196.8, 29.4);  glVertex2f(182.5, 29.4);  glEnd();  glBegin(GL\_LINES);  glVertex2f(183.3, 29.4);  glVertex2f(183.7, 34);  glVertex2f(183.7, 34);  glVertex2f(184.9, 36.1);  glVertex2f(184.9, 36.1);  glVertex2f(186.9, 37.5);  glVertex2f(186.9, 37.5);  glVertex2f(189, 37.8);  glVertex2f(189, 37.8);  glVertex2f(190.8, 37.7);  glVertex2f(190.8, 37.7);  glVertex2f(192.9, 36.5);  glVertex2f(192.9, 36.5);  glVertex2f(194.8, 34.4);  glVertex2f(194.8, 34.4);  glVertex2f(195.6, 31.6);  glVertex2f(195.6, 31.6);  glVertex2f(195.5701992480065, 29.4);  glEnd();  glBegin(GL\_LINES);  glVertex2f(188.499790461081, 37.730989124382);  glVertex2f(188.5, 40);  glVertex2f(188.5, 40);  glVertex2f(189.5, 40);  glVertex2f(189.5, 40);  glVertex2f(189.5028454998969, 37.7720488899183);  glEnd();  glBegin(GL\_LINES);  glVertex2f(184.495930978, 27.1116491312282);  glVertex2f(185, 20);  glVertex2f(185, 20);  glVertex2f(188.5, 20);  glVertex2f(188.5, 20);  glVertex2f(188.592557196, 27.1415515123092);  glVertex2f(188.592557196, 27.1415515123092);  glVertex2f(184.495930978, 27.1116491312282);  glEnd();  glBegin(GL\_LINES);  glVertex2f(190.6003196590304, 27.1562067128396);  glVertex2f(190.5, 20);  glVertex2f(190.5, 20);  glVertex2f(194, 20);  glVertex2f(194, 20);  glVertex2f(194.8000958977091, 27.1868620138519);  glVertex2f(194.8000958977091, 27.1868620138519);  glVertex2f(190.6003196590304, 27.1562067128396);  glEnd();  glBegin(GL\_LINES);  glVertex2f(185.2, 18);  glVertex2f(186, 11);  glVertex2f(186, 11);  glVertex2f(188.6, 11);  glVertex2f(188.6, 11);  glVertex2f(188.6, 18);  glVertex2f(188.6, 18);  glVertex2f(185.2, 18);  glEnd();  glBegin(GL\_LINES);  glVertex2f(190.3, 18);  glVertex2f(190.2, 11);  glVertex2f(190.2, 11);  glVertex2f(193, 11);  glVertex2f(193, 11);  glVertex2f(194, 18);  glVertex2f(194, 18);  glVertex2f(190.3, 18);  glEnd();  }  void lampPost(){  glColor3f(0.5, 0.4, 0.0);  glBegin(GL\_POLYGON);  glVertex2f(183, -74);  glVertex2f(180, -80);  glVertex2f(200, -80);  glVertex2f(197, -74);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(186, -71);  glVertex2f(185, -74);  glVertex2f(195, -74);  glVertex2f(193.5, -71);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(187.5, 9.6);  glVertex2f(185, 9.6);  glVertex2f(182.9, 27.1);  glVertex2f(196.6, 27.2);  glVertex2f(194.2, 9.6);  glVertex2f(191.8, 9.6);  glVertex2f(191.625, -71);  glVertex2f(187.5, -71);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(181.6, 28.6);  glVertex2f(181.6, 27.2);  glVertex2f(197.8, 27.2);  glVertex2f(197.8, 28.6);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(182.5, 29.4);  glVertex2f(182.5, 28.6);  glVertex2f(196.8, 28.6);  glVertex2f(196.8, 29.4);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(183.3, 29.4);  glVertex2f(183.7, 34);  glVertex2f(184.9, 36.1);  glVertex2f(186.9, 37.5);  glVertex2f(189, 37.8);  glVertex2f(190.8, 37.7);  glVertex2f(192.9, 36.5);  glVertex2f(194.8, 34.4);  glVertex2f(195.6, 31.6);  glVertex2f(195.5701992480065, 29.4);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(188.499790461081, 37.730989124382);  glVertex2f(188.5, 40);  glVertex2f(189.5, 40);  glVertex2f(189.5028454998969, 37.7720488899183);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 1, 0);  glVertex2f(184.495930978, 27.1116491312282);  glVertex2f(185, 20);  glVertex2f(188.5, 20);  glVertex2f(188.592557196, 27.1415515123092);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 1, 0);  glVertex2f(190.6003196590304, 27.1562067128396);  glVertex2f(190.5, 20);  glVertex2f(194, 20);  glVertex2f(194.8000958977091, 27.1868620138519);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 1, 0);  glVertex2f(185.2, 18);  glVertex2f(186, 11);  glVertex2f(188.6, 11);  glVertex2f(188.6, 18);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 1, 0);  glVertex2f(190.3, 18);  glVertex2f(190.2, 11);  glVertex2f(193, 11);  glVertex2f(194, 18);  glEnd();  }  void display() {  glClearColor(0.0f, 0.0f, 0.0f, 0.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  lampPost();  outline();  glFlush(); // Render now  }  /\* Main function: GLUT runs as a console application starting at main() \*/  int main(int argc, char\*\* argv) {  glutInitWindowSize(600, 900); // Set the window's initial width & height  glutInit(&argc, argv); // Initialize GLUT  glutInitWindowPosition((glutGet(GLUT\_SCREEN\_WIDTH)-600)/2,  (glutGet(GLUT\_SCREEN\_HEIGHT)-900)/2);  glutCreateWindow("OpenGL Setup"); // Create a window with the given title  glutDisplayFunc(display); // Register display callback handler for window re-paint  gluOrtho2D(160, 220, -90, +55);  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 <math.h>  #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 bench(){  //lower supports  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.3, 0);  glVertex2f(212, -70);  glVertex2f(212, -84);  glVertex2f(215, -84);  glVertex2f(215, -70);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.5, 0);  glVertex2f(220, -70);  glVertex2f(220, -84);  glVertex2f(222, -84);  glVertex2f(222, -70);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.5, 0);  glVertex2f(272, -70);  glVertex2f(272, -84);  glVertex2f(274, -84);  glVertex2f(274, -70);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.3, 0);  glVertex2f(279, -70);  glVertex2f(279, -84);  glVertex2f(282, -84);  glVertex2f(282, -70);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.5, 0);  glVertex2f(206, -68);  glVertex2f(206, -70);  glVertex2f(288, -70);  glVertex2f(288, -68);  glEnd();  //sitting space  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.3, 0);  glVertex2f(215, -55);  glVertex2f(206, -68);  glVertex2f(288, -68);  glVertex2f(280, -55);  glEnd();  //two vertical support pillers  glColor3f(0.5, 0.5, 0);  glBegin(GL\_POLYGON);  glVertex2f(220, -23);  glVertex2f(220, -55);  glVertex2f(222, -55);  glVertex2f(222, -23);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(273, -23);  glVertex2f(273, -55);  glVertex2f(275, -55);  glVertex2f(275, -23);  glEnd();  // outline of two vertical support pillers  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(220, -23);  glVertex2f(220, -55);  glVertex2f(220, -55);  glVertex2f(222, -55);  glVertex2f(222, -55);  glVertex2f(222, -23);  glVertex2f(222, -23);  glVertex2f(220, -23);  glEnd();  glBegin(GL\_LINES);  glVertex2f(273, -23);  glVertex2f(273, -55);  glVertex2f(273, -55);  glVertex2f(275, -55);  glVertex2f(275, -55);  glVertex2f(275, -23);  glVertex2f(275, -23);  glVertex2f(273, -23);  glEnd();  //four horizontal support  glColor3f(0.5, 0.3, 0);  glBegin(GL\_POLYGON);  glVertex2f(215, -44);  glVertex2f(215, -48);  glVertex2f(280, -48);  glVertex2f(280, -44);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(215, -38);  glVertex2f(215, -42);  glVertex2f(280, -42);  glVertex2f(280, -38);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(215, -31.5);  glVertex2f(215, -35.5);  glVertex2f(280, -35.5);  glVertex2f(280, -31.5);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(215, -25);  glVertex2f(215, -29);  glVertex2f(280, -29);  glVertex2f(280, -25);  glEnd();  //outlines  //LOWER SUPPORTS  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(212, -70);  glVertex2f(212, -84);  glVertex2f(212, -84);  glVertex2f(215, -84);  glVertex2f(215, -84);  glVertex2f(215, -70);  glVertex2f(215, -70);  glVertex2f(212, -70);  glEnd();  glBegin(GL\_LINES);  glVertex2f(220, -70);  glVertex2f(220, -84);  glVertex2f(220, -84);  glVertex2f(222, -84);  glVertex2f(222, -84);  glVertex2f(222, -70);  glVertex2f(222, -70);  glVertex2f(220, -70);  glEnd();  glBegin(GL\_LINES);  glVertex2f(272, -70);  glVertex2f(272, -84);  glVertex2f(272, -84);  glVertex2f(274, -84);  glVertex2f(274, -84);  glVertex2f(274, -70);  glVertex2f(274, -70);  glVertex2f(272, -70);  glEnd();  glBegin(GL\_LINES);  glVertex2f(279, -70);  glVertex2f(279, -84);  glVertex2f(279, -84);  glVertex2f(282, -84);  glVertex2f(282, -84);  glVertex2f(282, -70);  glVertex2f(282, -70);  glVertex2f(279, -70);  glEnd();  //ABOVE THE LOWER SUPPORTS  glBegin(GL\_LINES);  glVertex2f(206, -68);  glVertex2f(206, -70);  glVertex2f(206, -70);  glVertex2f(288, -70);  glVertex2f(288, -70);  glVertex2f(288, -68);  glVertex2f(288, -68);  glVertex2f(206, -68);  glEnd();  //sitting space  glBegin(GL\_LINES);  glVertex2f(215, -55);  glVertex2f(206, -68);  glVertex2f(206, -68);  glVertex2f(288, -68);  glVertex2f(288, -68);  glVertex2f(280, -55);  glVertex2f(280, -55);  glVertex2f(215, -55);  glEnd();  //four horizontal support  glBegin(GL\_LINES);  glVertex2f(215, -44);  glVertex2f(215, -48);  glVertex2f(215, -48);  glVertex2f(280, -48);  glVertex2f(280, -48);  glVertex2f(280, -44);  glVertex2f(280, -44);  glVertex2f(215, -44);  glEnd();  glBegin(GL\_LINES);  glVertex2f(215, -38);  glVertex2f(215, -42);  glVertex2f(215, -42);  glVertex2f(280, -42);  glVertex2f(280, -42);  glVertex2f(280, -38);  glVertex2f(280, -38);  glVertex2f(215, -38);  glEnd();  glBegin(GL\_LINES);  glVertex2f(215, -31.5);  glVertex2f(215, -35.5);  glVertex2f(215, -35.5);  glVertex2f(280, -35.5);  glVertex2f(280, -35.5);  glVertex2f(280, -31.5);  glVertex2f(280, -31.5);  glVertex2f(215, -31.5);  glEnd();  glBegin(GL\_LINES);  glVertex2f(215, -25);  glVertex2f(215, -29);  glVertex2f(215, -29);  glVertex2f(280, -29);  glVertex2f(280, -29);  glVertex2f(280, -25);  glVertex2f(280, -25);  glVertex2f(215, -25);  glEnd();  }  void display() {  glClearColor(1.0f, 1.0f, 1.0f, 1.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  bench();  glFlush(); // Render now  }  /\* Main function: GLUT runs as a console application starting at main() \*/  int main(int argc, char\*\* argv) {  glutInitWindowSize(900, 600); // Set the window's initial width & height  glutInit(&argc, argv); // Initialize GLUT  glutInitWindowPosition((glutGet(GLUT\_SCREEN\_WIDTH)-900)/2,  (glutGet(GLUT\_SCREEN\_HEIGHT)-600)/2);  glutCreateWindow("OpenGL Setup"); // Create a window with the given title  glutDisplayFunc(display); // Register display callback handler for window re-paint  gluOrtho2D(190, 300, -90, -20);  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 <math.h>  #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 soil\_effect(){  glBegin(GL\_POLYGON);  glColor3f(0.8, 0.6, 0.4);  glVertex2f(-260, -100);  glVertex2f(-260, -26);  glVertex2f(-58, -26);  glVertex2f(164, -22);  glVertex2f(205, -47);  glVertex2f(302, -52);  glVertex2f(325, -70);  glVertex2f(330, -80);  glVertex2f(334, -100);  glEnd();  }  void tree(){  glBegin(GL\_POLYGON);  glColor3f(0.0f, 1.0f, 0.0f);  glVertex2f(-140, 30.5);  glVertex2f(-152.5, 17.5);  glVertex2f(-168, 16.5);  glVertex2f(-179, 27);  glVertex2f(-180, 40);  glVertex2f(-189, 44);  glVertex2f(-197.2, 53.4);  glVertex2f(-200.2, 68);  glVertex2f(-197.5,80.5);  glVertex2f(-192.5,87.5);  glVertex2f(-184.3,91.3);  glVertex2f(-182.6,101.1);  glVertex2f(-176,109);  glVertex2f(-166,111.5);  glVertex2f(-155.8,111.85 );  glVertex2f(-150.8,110.2 );  glVertex2f(-145.4,109.2 );  glVertex2f(-140.4,114 );  glVertex2f(-129.8,117.6 );  glVertex2f(-119.05,117.35 );  glVertex2f(-111.1,113.7 );  glVertex2f(-104.4,106.2 );  glVertex2f(-100,100 );  glVertex2f(-92,100.6 );  glVertex2f(-82,97.4 );  glVertex2f(-76.1,88.8);  glVertex2f(-76,78.8);  glVertex2f(-78.45, 71.9);  glVertex2f(-73.6, 67.8);  glVertex2f(-70.2, 61.4);  glVertex2f(-71, 51);  glVertex2f(-75.86, 43.68);  glVertex2f(-73.04, 37.78);  glVertex2f(-70, 30);  glVertex2f(-73, 19);  glVertex2f(-85, 8.5);  glVertex2f(-99, 7.2);  glVertex2f(-112, 10);  glVertex2f(-120, 24.5);  glEnd();  glColor3f(0.5f, 0.3f, 0.0f);  glBegin(GL\_POLYGON);  /\*  glVertex2f(-120, 24.5);  glVertex2f(-140, 24.5);  glVertex2f(-140, -65);  glVertex2f(-162, -83);  glVertex2f(-108, -83);  glVertex2f(-120, -65);  glVertex2f(-120, -24.5);  \*/  glVertex2f(-140, -65);  glVertex2f(-162, -83);  glVertex2f(-108, -83);  glVertex2f(-120, -65);  glVertex2f(-120, 24.5);  glVertex2f(-140, 24.5);  /\*  \*/  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(-120, 24.5);  glVertex2f(-107.7, 35);  glVertex2f(-113.7, 42);  glVertex2f(-119.7, 37);  glVertex2f(-119.7, 61);  glVertex2f(-131.7, 61);  glVertex2f(-131.7, 43);  glVertex2f(-140.2, 50.6);  glVertex2f(-144.7, 42);  glVertex2f(-140, 37);  glVertex2f(-140, 24.5);  glEnd();  }  void stars(){  glColor3f(1, 1, 1);  //first big star  glBegin(GL\_POLYGON);  glVertex2f(102, 170);  glVertex2f(92, 162);  glVertex2f(102, 186);  glVertex2f(114, 162);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(102, 170);  glVertex2f(88, 178);  glVertex2f(117, 178);  glEnd();  //second big star  glBegin(GL\_POLYGON);  glVertex2f(154, 148);  glVertex2f(145, 143);  glVertex2f(154, 159);  glVertex2f(163, 143);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(154, 148);  glVertex2f(144, 153);  glVertex2f(164, 153);  glEnd();  //Third big star  glBegin(GL\_POLYGON);  glVertex2f(113.6, 143.6);  glVertex2f(110, 140);  glVertex2f(113, 149);  glVertex2f(118, 141);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(113.6, 143.6);  glVertex2f(108.5, 145);  glVertex2f(118, 147);  glEnd();  }  void outline\_tree(){  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(-140, -65);  glVertex2f(-162, -83);  glVertex2f(-162, -83);  glVertex2f(-108, -83);  glVertex2f(-108, -83);  glVertex2f(-120, -65);  glVertex2f(-120, -65);  glVertex2f(-120, 24.5);  glVertex2f(-120, 24.5);  glVertex2f(-107.7, 35);  glVertex2f(-107.7, 35);  glVertex2f(-113.7, 42);  glVertex2f(-113.7, 42);  glVertex2f(-119.7, 37);  glVertex2f(-119.7, 37);  glVertex2f(-119.7, 61);  glVertex2f(-119.7, 61);  glVertex2f(-131.7, 61);  glVertex2f(-131.7, 61);  glVertex2f(-131.7, 43);  glVertex2f(-131.7, 43);  glVertex2f(-140.2, 50.6);  glVertex2f(-140.2, 50.6);  glVertex2f(-144.7, 42);  glVertex2f(-144.7, 42);  glVertex2f(-140, 37);  glVertex2f(-140, 37);  glVertex2f(-140, 24.5);  glVertex2f(-140, 24.5);  glVertex2f(-140, -65);  //round green leafs  glVertex2f(-140, 30.5);  glVertex2f(-152.5, 17.5);  glVertex2f(-152.5, 17.5);  glVertex2f(-168, 16.5);  glVertex2f(-168, 16.5);  glVertex2f(-179, 27);  glVertex2f(-179, 27);  glVertex2f(-180, 40);  glVertex2f(-180, 40);  glVertex2f(-189, 44);  glVertex2f(-189, 44);  glVertex2f(-197.2, 53.4);  glVertex2f(-197.2, 53.4);  glVertex2f(-200.2, 68);  glVertex2f(-200.2, 68);  glVertex2f(-197.5,80.5);  glVertex2f(-197.5,80.5);  glVertex2f(-192.5,87.5);  glVertex2f(-192.5,87.5);  glVertex2f(-184.3,91.3);  glVertex2f(-184.3,91.3);  glVertex2f(-182.6,101.1);  glVertex2f(-182.6,101.1);  glVertex2f(-176,109);  glVertex2f(-176,109);  glVertex2f(-166,111.5);  glVertex2f(-166,111.5);  glVertex2f(-155.8,111.85 );  glVertex2f(-155.8,111.85 );  glVertex2f(-150.8,110.2 );  glVertex2f(-150.8,110.2 );  glVertex2f(-145.4,109.2 );  glVertex2f(-145.4,109.2 );  glVertex2f(-140.4,114 );  glVertex2f(-140.4,114 );  glVertex2f(-129.8,117.6 );  glVertex2f(-129.8,117.6 );  glVertex2f(-119.05,117.35 );  glVertex2f(-119.05,117.35 );  glVertex2f(-111.1,113.7 );  glVertex2f(-111.1,113.7 );  glVertex2f(-104.4,106.2 );  glVertex2f(-104.4,106.2 );  glVertex2f(-100,100 );  glVertex2f(-100,100 );  glVertex2f(-92,100.6 );  glVertex2f(-92,100.6 );  glVertex2f(-82,97.4 );  glVertex2f(-82,97.4 );  glVertex2f(-76.1,88.8);  glVertex2f(-76.1,88.8);  glVertex2f(-76,78.8);  glVertex2f(-76,78.8);  glVertex2f(-78.45, 71.9);  glVertex2f(-78.45, 71.9);  glVertex2f(-73.6, 67.8);  glVertex2f(-73.6, 67.8);  glVertex2f(-70.2, 61.4);  glVertex2f(-70.2, 61.4);  glVertex2f(-71, 51);  glVertex2f(-71, 51);  glVertex2f(-75.86, 43.68);  glVertex2f(-75.86, 43.68);  glVertex2f(-73.04, 37.78);  glVertex2f(-73.04, 37.78);  glVertex2f(-70, 30);  glVertex2f(-70, 30);  glVertex2f(-73, 19);  glVertex2f(-73, 19);  glVertex2f(-85, 8.5);  glVertex2f(-85, 8.5);  glVertex2f(-99, 7.2);  glVertex2f(-99, 7.2);  glVertex2f(-112, 10);  glVertex2f(-112, 10);  glVertex2f(-120, 16.5);  //glVertex2f(-120, 24.5);  glEnd();  }  void outlilne\_building(){  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(10, 270);  glVertex2f(-32, 210);  glVertex2f(-32, 210);  glVertex2f(-44, 210);  glVertex2f(-44, 210);  glVertex2f(10, 285);  glVertex2f(10, 285);  glVertex2f(64, 210);  glVertex2f(64, 210);  glVertex2f(52, 210);  glVertex2f(52, 210);  glVertex2f(10, 270);  glEnd();  glBegin(GL\_LINES);  glVertex2f(-32, 210);  glVertex2f(-32, 20);  glVertex2f(-32, 20);  glVertex2f(52, 20);  glVertex2f(52, 20);  glVertex2f(52, 210);  glEnd();  glBegin(GL\_LINES);  glVertex2f(-39.9, 20);  glVertex2f(-60, 0);  glVertex2f(-60, 0);  glVertex2f(80, 0);  glVertex2f(80, 0);  glVertex2f(60, 20);  glVertex2f(60, 20);  glVertex2f(-39.9, 20);  glEnd();  //lowere portion outline  glBegin(GL\_LINES);  glVertex2f(-40, 0);  glVertex2f(-40, -83);  glVertex2f(-40, -83);  glVertex2f(60, -83);  glVertex2f(60, -83);  glVertex2f(60, 0);  glEnd();  glBegin(GL\_LINES);  glVertex2f(52, 75.66478);  glVertex2f(160, 0);  glVertex2f(160, 0);  glVertex2f(140, 0);  glVertex2f(140, 0);  glVertex2f(52, 60.576048);  glVertex2f(52, 60.576048);  glVertex2f(52, 75.66478);  glEnd();  glBegin(GL\_LINES);  glVertex2f(100, 60);  glVertex2f(99.9899323003119, 42.04304600);  glVertex2f(99.9899323003119, 42.04304600);  glVertex2f(119.9380400662845, 28.0674041695164);  glVertex2f(119.9380400662845, 28.0674041695164);  glVertex2f(120,60);  glVertex2f(120,60);  glVertex2f(100, 60);  glEnd();  //right window  glBegin(GL\_LINES);  glVertex2f(80,-30);  glVertex2f(80,-60);  glVertex2f(80,-60);  glVertex2f(110,-60);  glVertex2f(110,-60);  glVertex2f(110,-30);  glVertex2f(110,-30);  glVertex2f(80,-30);  glEnd();  //LOWER OUTLILNE UNDER THE RIGHT WINDOW  glBegin(GL\_LINES);  glVertex2f(60,-80);  glVertex2f(140,-80);  glVertex2f(140,-80);  glVertex2f(140,0);  glEnd();  //10 small windows outline  glBegin(GL\_LINES);  //first  glVertex2f(-20, 60);  glVertex2f(-20, 30);  glVertex2f(-20, 30);  glVertex2f(0, 30);  glVertex2f(0, 30);  glVertex2f(0, 60);  glVertex2f(0, 60);  glVertex2f(-20, 60);  //2nd  glVertex2f(20, 60);  glVertex2f(20, 30);  glVertex2f(20, 30);  glVertex2f(40, 30);  glVertex2f(40, 30);  glVertex2f(40, 60);  glVertex2f(40, 60);  glVertex2f(20, 60);  //3rd  glVertex2f(-20, 100);  glVertex2f(-20, 70);  glVertex2f(-20, 70);  glVertex2f(0, 70);  glVertex2f(0, 70);  glVertex2f(0, 100);  glVertex2f(0, 100);  glVertex2f(-20, 100);  //4th  glVertex2f(20, 100);  glVertex2f(20, 70);  glVertex2f(20, 70);  glVertex2f(40, 70);  glVertex2f(40, 70);  glVertex2f(40,100);  glVertex2f(40,100);  glVertex2f(20, 100);  //5th  glVertex2f(-20, 140);  glVertex2f(-20, 110);  glVertex2f(-20, 110);  glVertex2f(0, 110);  glVertex2f(0, 110);  glVertex2f(0, 140);  glVertex2f(0, 140);  glVertex2f(-20, 140);  //6th  glVertex2f(20, 140);  glVertex2f(20, 110);  glVertex2f(20, 110);  glVertex2f(40, 110);  glVertex2f(40, 110);  glVertex2f(40,140);  glVertex2f(40,140);  glVertex2f(20, 140);  //6th  glVertex2f(-20, 180);  glVertex2f(-20, 150);  glVertex2f(-20, 150);  glVertex2f(0, 150);  glVertex2f(0, 150);  glVertex2f(0, 180);  glVertex2f(0, 180);  glVertex2f(-20, 180);  //7th  glVertex2f(20, 180);  glVertex2f(20, 150);  glVertex2f(20, 150);  glVertex2f(40, 150);  glVertex2f(40, 150);  glVertex2f(40,180);  glVertex2f(40,180);  glVertex2f(20, 180);  //8th  glVertex2f(-20, 220);  glVertex2f(-20, 190);  glVertex2f(-20, 190);  glVertex2f(0, 190);  glVertex2f(0, 190);  glVertex2f(0, 220);  glVertex2f(0, 220);  glVertex2f(-20, 220);  //9th  glVertex2f(20, 220);  glVertex2f(20, 190);  glVertex2f(20, 190);  glVertex2f(40, 190);  glVertex2f(40, 190);  glVertex2f(40,220);  glVertex2f(40,220);  glVertex2f(20, 220);  glEnd();  }  void main\_doorL(){  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(-12, -83);  glVertex2f(-12, -22);  glVertex2f(-12, -22);  glVertex2f(-6, -18);  glVertex2f(-6, -18);  glVertex2f(3, -16);  glVertex2f(3, -16);  glVertex2f(16, -16);  glVertex2f(16, -16);  glVertex2f(27, -19);  glVertex2f(27, -19);  glVertex2f(32, -22);  glVertex2f(32, -22);  glVertex2f(32, -83);  glVertex2f(-20, -83);  glVertex2f(-20, -20);  glVertex2f(-20, -20);  glVertex2f(-8.5, -13.5);  glVertex2f(-8.5, -13.5);  glVertex2f(3, -9.5);  glVertex2f(3, -9.5);  glVertex2f(16, -9.5);  glVertex2f(16, -9.5);  glVertex2f(28, -13);  glVertex2f(28, -13);  glVertex2f(40, -20);  glVertex2f(40, -20);  glVertex2f(40, -83);  glVertex2f(40, -83);  glEnd();  // two doors and one open  //left open door  glBegin(GL\_LINES);  glVertex2f(-12, -30.999998523);  glVertex2f(-12, -83);  glVertex2f(-12, -83);  glVertex2f(6.5, -79.5);  glVertex2f(6.5, -79.5);  glVertex2f(6.5, -34.5);  glVertex2f(6.5, -34.5);  glVertex2f(-12, -30.999998523);  glEnd();  //right closed door  glBegin(GL\_LINES);  glVertex2f(10.00057437, -30.999998523);  glVertex2f(10.033969079, -83);  glVertex2f(10.033969079, -83);  glVertex2f(31.996384, -83);  glVertex2f(31.996384, -83);  glVertex2f(31.996384, -30.999998523);  glEnd();  //four squares of the two doors  //right two squares  glBegin(GL\_LINES);  //first square  glVertex2f(13, -34);  glVertex2f(13, -54.5);  glVertex2f(13, -54.5);  glVertex2f(28, -54.5);  glVertex2f(28, -54.5);  glVertex2f(28, -34);  glVertex2f(28, -34);  glVertex2f(13, -34);  //second square  glVertex2f(13, -61);  glVertex2f(13, -80);  glVertex2f(13, -80);  glVertex2f(28, -80);  glVertex2f(28, -80);  glVertex2f(28, -61);  glVertex2f(28, -61);  glVertex2f(13, -61);  //left two squares  //first square  glVertex2f(-9, -35.5);  glVertex2f(-9, -53.5);  glVertex2f(-9, -53.5);  glVertex2f(3.6, -54.6);  glVertex2f(3.6, -54.6);  glVertex2f(3.6, -37.4);  glVertex2f(3.6, -37.4);  glVertex2f(-9, -35.5);  //second square  glVertex2f(-9, -57.5);  glVertex2f(-9, -75.8);  glVertex2f(-9, -75.8);  glVertex2f(3.6, -74.4);  glVertex2f(3.6, -74.4);  glVertex2f(3.6, -59.35);  glVertex2f(3.6, -59.35);  glVertex2f(-9, -57.5);  //two lower curves out of total 4 curves  //3rd lower curve from up  glVertex2f(-3.51056, -29.880283172);  glVertex2f(-2, -25.5);  glVertex2f(-2, -25.5);  glVertex2f(1.06, -21.68);  glVertex2f(1.06, -21.68);  glVertex2f(6.15, -19.95);  glVertex2f(6.15, -19.95);  glVertex2f(12.6, -20);  glVertex2f(12.6, -20);  glVertex2f(16.8, -22.4);  glVertex2f(16.8, -22.4);  glVertex2f(20.4, -26.4);  glVertex2f(20.4, -26.4);  glVertex2f(21.189489, -29.999999);  //fourth lower curve from up  glVertex2f(0.9894420866, -29.99999999971);  glVertex2f(3.5, -25.5);  glVertex2f(3.5, -25.5);  glVertex2f(7.2, -24.4);  glVertex2f(7.2, -24.4);  glVertex2f(10.8, -24.4);  glVertex2f(10.8, -24.4);  glVertex2f(15, -26);  glVertex2f(15, -26);  glVertex2f(16.603981, -29.999999817);  glEnd();  }  void building(){  // buildin right extension  glBegin(GL\_POLYGON);  glColor3f(1, 0.5, 0);  glVertex2f(52, 75.66478);  glVertex2f(160, 0);  glVertex2f(140, 0);  glVertex2f(52, 60.576048);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 0.6, 0);  glVertex2f(52, 60.576048);  glVertex2f(140, 0);  glVertex2f(140, -80);  glVertex2f(52, -80);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 0.7, 0);  glVertex2f(10, 270);  glVertex2f(-32, 210);  glVertex2f(-32, 20);  glVertex2f(52, 20);  glVertex2f(52, 210);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 0.5, 0);  glVertex2f(-39.9, 20);  glVertex2f(-60, 0);  glVertex2f(80, 0);  glVertex2f(60, 20);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 0.7, 0);  glVertex2f(-40, 0);  glVertex2f(-40, -83);  glVertex2f(60, -83);  glVertex2f(60, 0);  glEnd();  // main front door  // main door color  glBegin(GL\_POLYGON);  glColor3f(0.7, 0.8, 0.8);  glVertex2f(-20, -83);  glVertex2f(-20, -20);  glVertex2f(-8.5, -13.5);  glVertex2f(3, -9.5);  glVertex2f(16, -9.5);  glVertex2f(28, -13);  glVertex2f(40, -20);  glVertex2f(40, -83);  glEnd();  //two horizontal section  glBegin(GL\_POLYGON);  glColor3f(0, 0, 0);  glVertex2f(-12, -30.9999986);  glVertex2f(31.9994665, -30.9999986);  glVertex2f(31.9994665, -29.9999986);  glVertex2f(-12, -30);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 0.5, 0);  glVertex2f(10, 270);  glVertex2f(-32, 210);  glVertex2f(-44, 210);  glVertex2f(10, 285);  glVertex2f(64, 210);  glVertex2f(52, 210);  glEnd();  //right window  glBegin(GL\_POLYGON);  glColor3f(0.6, 0.6, 0.6);  glVertex2f(80,-30);  glVertex2f(80,-60);  glVertex2f(110,-60);  glVertex2f(110,-30);  glEnd();  //windows  glColor3f(0.6, 0.6, 0.6);  glBegin(GL\_POLYGON);  glVertex2f(-20, 60);  glVertex2f(-20, 30);  glVertex2f(0, 30);  glVertex2f(0, 60);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(20, 60);  glVertex2f(20, 30);  glVertex2f(40, 30);  glVertex2f(40, 60);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(-20, 100);  glVertex2f(-20, 70);  glVertex2f(0, 70);  glVertex2f(0, 100);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(20, 100);  glVertex2f(20, 70);  glVertex2f(40, 70);  glVertex2f(40,100);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(-20, 140);  glVertex2f(-20, 110);  glVertex2f(0, 110);  glVertex2f(0, 140);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(20, 140);  glVertex2f(20, 110);  glVertex2f(40, 110);  glVertex2f(40,140);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(-20, 180);  glVertex2f(-20, 150);  glVertex2f(0, 150);  glVertex2f(0, 180);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(20, 180);  glVertex2f(20, 150);  glVertex2f(40, 150);  glVertex2f(40,180);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(-20, 220);  glVertex2f(-20, 190);  glVertex2f(0, 190);  glVertex2f(0, 220);  glEnd();  glBegin(GL\_POLYGON);  //glColor3f(1, 1.0, 1);  glVertex2f(20, 220);  glVertex2f(20, 190);  glVertex2f(40, 190);  glVertex2f(40,220);  glEnd();  //right chimni  glBegin(GL\_POLYGON);  glColor3f(0.6, 0.6, 0.6);  glVertex2f(100, 60);  glVertex2f(99.9899323003119, 42.04304600);  glVertex2f(119.9380400662845, 28.0674041695164);  glVertex2f(120,60);  glEnd();  }  void lampPost(){  glColor3f(0, 0, 0.4);  glBegin(GL\_POLYGON);  glVertex2f(183, -74);  glVertex2f(180, -80);  glVertex2f(200, -80);  glVertex2f(197, -74);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(186, -71);  glVertex2f(185, -74);  glVertex2f(195, -74);  glVertex2f(193.5, -71);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(187.5, 9.6);  glVertex2f(185, 9.6);  glVertex2f(182.9, 27.1);  glVertex2f(196.6, 27.2);  glVertex2f(194.2, 9.6);  glVertex2f(191.8, 9.6);  glVertex2f(191.625, -71);  glVertex2f(187.5, -71);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(181.6, 28.6);  glVertex2f(181.6, 27.2);  glVertex2f(197.8, 27.2);  glVertex2f(197.8, 28.6);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(182.5, 29.4);  glVertex2f(182.5, 28.6);  glVertex2f(196.8, 28.6);  glVertex2f(196.8, 29.4);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(183.3, 29.4);  glVertex2f(183.7, 34);  glVertex2f(184.9, 36.1);  glVertex2f(186.9, 37.5);  glVertex2f(189, 37.8);  glVertex2f(190.8, 37.7);  glVertex2f(192.9, 36.5);  glVertex2f(194.8, 34.4);  glVertex2f(195.6, 31.6);  glVertex2f(195.5701992480065, 29.4);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(188.499790461081, 37.730989124382);  glVertex2f(188.5, 40);  glVertex2f(189.5, 40);  glVertex2f(189.5028454998969, 37.7720488899183);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 1, 0);  glVertex2f(184.495930978, 27.1116491312282);  glVertex2f(185, 20);  glVertex2f(188.5, 20);  glVertex2f(188.592557196, 27.1415515123092);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 1, 0);  glVertex2f(190.6003196590304, 27.1562067128396);  glVertex2f(190.5, 20);  glVertex2f(194, 20);  glVertex2f(194.8000958977091, 27.1868620138519);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 1, 0);  glVertex2f(185.2, 18);  glVertex2f(186, 11);  glVertex2f(188.6, 11);  glVertex2f(188.6, 18);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1, 1, 0);  glVertex2f(190.3, 18);  glVertex2f(190.2, 11);  glVertex2f(193, 11);  glVertex2f(194, 18);  glEnd();  }  void bench(){  //lower supports  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.3, 0);  glVertex2f(212, -70);  glVertex2f(212, -84);  glVertex2f(215, -84);  glVertex2f(215, -70);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.5, 0);  glVertex2f(220, -70);  glVertex2f(220, -84);  glVertex2f(222, -84);  glVertex2f(222, -70);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.5, 0);  glVertex2f(272, -70);  glVertex2f(272, -84);  glVertex2f(274, -84);  glVertex2f(274, -70);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.3, 0);  glVertex2f(279, -70);  glVertex2f(279, -84);  glVertex2f(282, -84);  glVertex2f(282, -70);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.5, 0);  glVertex2f(206, -68);  glVertex2f(206, -70);  glVertex2f(288, -70);  glVertex2f(288, -68);  glEnd();  //sitting space  glBegin(GL\_POLYGON);  glColor3f(0.5, 0.3, 0);  glVertex2f(215, -55);  glVertex2f(206, -68);  glVertex2f(288, -68);  glVertex2f(280, -55);  glEnd();  //two vertical support pillers  glColor3f(0.5, 0.5, 0);  glBegin(GL\_POLYGON);  glVertex2f(220, -23);  glVertex2f(220, -55);  glVertex2f(222, -55);  glVertex2f(222, -23);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(273, -23);  glVertex2f(273, -55);  glVertex2f(275, -55);  glVertex2f(275, -23);  glEnd();  // outline of two vertical support pillers  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(220, -23);  glVertex2f(220, -55);  glVertex2f(220, -55);  glVertex2f(222, -55);  glVertex2f(222, -55);  glVertex2f(222, -23);  glVertex2f(222, -23);  glVertex2f(220, -23);  glEnd();  glBegin(GL\_LINES);  glVertex2f(273, -23);  glVertex2f(273, -55);  glVertex2f(273, -55);  glVertex2f(275, -55);  glVertex2f(275, -55);  glVertex2f(275, -23);  glVertex2f(275, -23);  glVertex2f(273, -23);  glEnd();  //four horizontal support  glColor3f(0.5, 0.3, 0);  glBegin(GL\_POLYGON);  glVertex2f(215, -44);  glVertex2f(215, -48);  glVertex2f(280, -48);  glVertex2f(280, -44);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(215, -38);  glVertex2f(215, -42);  glVertex2f(280, -42);  glVertex2f(280, -38);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(215, -31.5);  glVertex2f(215, -35.5);  glVertex2f(280, -35.5);  glVertex2f(280, -31.5);  glEnd();  glBegin(GL\_POLYGON);  glVertex2f(215, -25);  glVertex2f(215, -29);  glVertex2f(280, -29);  glVertex2f(280, -25);  glEnd();  //outlines  //LOWER SUPPORTS  glColor3f(0, 0, 0);  glLineWidth(1.5);  glBegin(GL\_LINES);  glVertex2f(212, -70);  glVertex2f(212, -84);  glVertex2f(212, -84);  glVertex2f(215, -84);  glVertex2f(215, -84);  glVertex2f(215, -70);  glVertex2f(215, -70);  glVertex2f(212, -70);  glEnd();  glBegin(GL\_LINES);  glVertex2f(220, -70);  glVertex2f(220, -84);  glVertex2f(220, -84);  glVertex2f(222, -84);  glVertex2f(222, -84);  glVertex2f(222, -70);  glVertex2f(222, -70);  glVertex2f(220, -70);  glEnd();  glBegin(GL\_LINES);  glVertex2f(272, -70);  glVertex2f(272, -84);  glVertex2f(272, -84);  glVertex2f(274, -84);  glVertex2f(274, -84);  glVertex2f(274, -70);  glVertex2f(274, -70);  glVertex2f(272, -70);  glEnd();  glBegin(GL\_LINES);  glVertex2f(279, -70);  glVertex2f(279, -84);  glVertex2f(279, -84);  glVertex2f(282, -84);  glVertex2f(282, -84);  glVertex2f(282, -70);  glVertex2f(282, -70);  glVertex2f(279, -70);  glEnd();  //ABOVE THE LOWER SUPPORTS  glBegin(GL\_LINES);  glVertex2f(206, -68);  glVertex2f(206, -70);  glVertex2f(206, -70);  glVertex2f(288, -70);  glVertex2f(288, -70);  glVertex2f(288, -68);  glVertex2f(288, -68);  glVertex2f(206, -68);  glEnd();  //sitting space  glBegin(GL\_LINES);  glVertex2f(215, -55);  glVertex2f(206, -68);  glVertex2f(206, -68);  glVertex2f(288, -68);  glVertex2f(288, -68);  glVertex2f(280, -55);  glVertex2f(280, -55);  glVertex2f(215, -55);  glEnd();  //four horizontal support  glBegin(GL\_LINES);  glVertex2f(215, -44);  glVertex2f(215, -48);  glVertex2f(215, -48);  glVertex2f(280, -48);  glVertex2f(280, -48);  glVertex2f(280, -44);  glVertex2f(280, -44);  glVertex2f(215, -44);  glEnd();  glBegin(GL\_LINES);  glVertex2f(215, -38);  glVertex2f(215, -42);  glVertex2f(215, -42);  glVertex2f(280, -42);  glVertex2f(280, -42);  glVertex2f(280, -38);  glVertex2f(280, -38);  glVertex2f(215, -38);  glEnd();  glBegin(GL\_LINES);  glVertex2f(215, -31.5);  glVertex2f(215, -35.5);  glVertex2f(215, -35.5);  glVertex2f(280, -35.5);  glVertex2f(280, -35.5);  glVertex2f(280, -31.5);  glVertex2f(280, -31.5);  glVertex2f(215, -31.5);  glEnd();  glBegin(GL\_LINES);  glVertex2f(215, -25);  glVertex2f(215, -29);  glVertex2f(215, -29);  glVertex2f(280, -29);  glVertex2f(280, -29);  glVertex2f(280, -25);  glVertex2f(280, -25);  glVertex2f(215, -25);  glEnd();  }  void moon()  {  glBegin(GL\_POLYGON);// Draw a Red 1x1 Square centered at origin  for(int i=0;i<360;i++)  {  glColor3f(1,1,1);  float pi=3.1416;  float A=(i\*2\*pi)/360;  float r=29.739;  float x = r \* cos(A);  float y = r \* sin(A);  glVertex2f(x + 160,y + 200);  }  //glVertex2f(0.3f,0.4f);  //glVertex2f(0.1f,0.4f);  glEnd();  }  void display() {  glClearColor(0.0f, 0.0f, 0.5f, 1.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  soil\_effect();  tree();  outline\_tree();  building();  main\_doorL();  outlilne\_building();  lampPost();  bench();  moon();  stars();  glFlush(); // Render now  }  /\* Main function: GLUT runs as a console application starting at main() \*/  int main(int argc, char\*\* argv) {  glutInitWindowSize(1020, 700); // Set the window's initial width & height  glutInit(&argc, argv); // Initialize GLUT  glutInitWindowPosition((glutGet(GLUT\_SCREEN\_WIDTH)-1020)/2,  (glutGet(GLUT\_SCREEN\_HEIGHT)-700)/2);  glutCreateWindow("OpenGL Setup"); // Create a window with the given title  glutDisplayFunc(display); // Register display callback handler for window re-paint  gluOrtho2D(-210, +300, -90, +300);  glutMainLoop(); // Enter the event-processing loop  return 0;  } |
| **Output Screenshot (Full Screen)-** |