Logo

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**National University of Modern Languages**

**Rawalpindi Campus**

**Computer Graphics Lab**

**Submitted By:**

Muhammad Hamza Saleem Awan

Numl-F21-38197

Rc-301

Bscs-36(Morning)

**Submitted To:**

Sir Junaid

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**Computer Graphics Lab**

**Lab Assignment # 1**

**LAB TASKS**

Build A House with all of its functionality.

**Code**

#include <GL/glut.h>

float houseX = 1.0f, houseY = 1.0f;

float houseWidth = 3.0f, houseHeight = 3.0f;

void drawHouse() {

// Base of the house

glColor3f(0.8f, 0.5f, 0.2f); // Brown color

glBegin(GL\_QUADS);

glVertex2f(houseX, houseY); // Bottom left

glVertex2f(houseX + houseWidth, houseY); // Bottom right

glVertex2f(houseX + houseWidth, houseY + houseHeight); // Top right

glVertex2f(houseX, houseY + houseHeight); // Top left

glEnd();

// Roof of the house

glColor3f(1.0f, 0.0f, 0.0f); // Red color

glBegin(GL\_TRIANGLES);

glVertex2f(houseX, houseY + houseHeight); // Left roof point

glVertex2f(houseX + houseWidth, houseY + houseHeight); // Right roof point

glVertex2f(houseX + houseWidth / 2, houseY + houseHeight + houseWidth / 2); // Top roof point

glEnd();

// Door

glColor3f(0.5f, 0.3f, 0.1f); // Dark brown color

glBegin(GL\_QUADS);

glVertex2f(houseX + houseWidth \* 0.4f, houseY); // Bottom left of door

glVertex2f(houseX + houseWidth \* 0.6f, houseY); // Bottom right of door

glVertex2f(houseX + houseWidth \* 0.6f, houseY + houseHeight \* 0.5f); // Top right of door

glVertex2f(houseX + houseWidth \* 0.4f, houseY + houseHeight \* 0.5f); // Top left of door

glEnd();

// Left Window

glColor3f(0.0f, 0.0f, 1.0f); // Blue color

glBegin(GL\_QUADS);

glVertex2f(houseX + houseWidth \* 0.2f, houseY + houseHeight \* 0.6f); // Bottom left

glVertex2f(houseX + houseWidth \* 0.4f, houseY + houseHeight \* 0.6f); // Bottom right

glVertex2f(houseX + houseWidth \* 0.4f, houseY + houseHeight \* 0.8f); // Top right

glVertex2f(houseX + houseWidth \* 0.2f, houseY + houseHeight \* 0.8f); // Top left

glEnd();

// Right Window

glBegin(GL\_QUADS);

glVertex2f(houseX + houseWidth \* 0.6f, houseY + houseHeight \* 0.6f); // Bottom left

glVertex2f(houseX + houseWidth \* 0.8f, houseY + houseHeight \* 0.6f); // Bottom right

glVertex2f(houseX + houseWidth \* 0.8f, houseY + houseHeight \* 0.8f); // Top right

glVertex2f(houseX + houseWidth \* 0.6f, houseY + houseHeight \* 0.8f); // Top left

glEnd();

}

void display() {

glClear(GL\_COLOR\_BUFFER\_BIT);

drawHouse();

glFlush();

}

void init() {

glClearColor(0.83f, 0.83f, 0.83f, 1.0f); // Set background color to grey

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

gluOrtho2D(0.0, 10.0, 0.0, 10.0); // Set up a 2D orthographic projection

}

int main(int argc, char\*\* argv) {

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowSize(600, 600); // Window size

glutInitWindowPosition(100, 100);

glutCreateWindow("Hamza House");

init();

glutDisplayFunc(display);

glutMainLoop();

return 0;

}

**Output:**

