**Lab Taks-1**

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| **Question-**  Draw the object- |
| **Graph Plot (Picture)-** |
| **#include <GL/glut.h>**  **void drawRectangle() {**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **glColor3f(0.0, 0.0, 0.0);**  **glBegin(GL\_LINE\_LOOP);**  **glVertex2f(0.2, 0.4);**  **glVertex2f(0.8, 0.4);**  **glVertex2f(0.8, 0.7);**  **glVertex2f(0.2, 0.7);**  **glEnd();**  **glFlush();**  **}**  **void init() {**  **glClearColor(1.0, 1.0, 1.0, 0.0);**  **glMatrixMode(GL\_PROJECTION);**  **glLoadIdentity();**  **gluOrtho2D(0.0, 1.0, 0.0, 1.0);**  **}**  **int main(int argc, char\*\* argv) {**  **glutInit(&argc, argv);**  **glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);**  **glutInitWindowSize(400, 400);**  **glutCreateWindow("Empty Rectangle");**  **glutDisplayFunc(drawRectangle);**  **init();**  **glutMainLoop();**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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| **Question-**  Draw the object- |
| **Graph Plot (Picture)-** |
| **Code-**  **#include <GL/glut.h>**  **void drawTrapezium() {**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **glColor3f(1.0, 0.0, 0.0);**  **glBegin(GL\_POLYGON);**  **glVertex2f(0.2, 0.2);**  **glVertex2f(0.8, 0.2);**  **glVertex2f(0.6, 0.6);**  **glVertex2f(0.4, 0.6);**  **glEnd();**  **glFlush();**  **}**  **void init() {**  **glClearColor(1.0, 1.0, 1.0, 0.0);**  **glMatrixMode(GL\_PROJECTION);**  **glLoadIdentity();**  **gluOrtho2D(0.0, 1.0, 0.0, 1.0);**  **}**  **int main(int argc, char\*\* argv) {**  **glutInit(&argc, argv);**  **glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);**  **glutInitWindowSize(400, 400);**  **glutCreateWindow("Trapezium");**  **glutDisplayFunc(drawTrapezium);**  **init();**  **glutMainLoop();**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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| **Question-**  Draw the object- |
| **Graph Plot (Picture)-** |
| **#include <GL/glut.h>**  **void drawAxes() {**  **glColor3f(0.0, 0.0, 0.0);**  **glBegin(GL\_LINES);**  **glVertex2f(0.1, 0.5);**  **glVertex2f(0.9, 0.5);**  **glEnd();**  **glBegin(GL\_LINES);**  **glVertex2f(0.5, 0.1);**  **glVertex2f(0.5, 0.9);**  **glEnd();**  **}**  **void drawArrow()**  **{**  **glColor3f(0.0, 1.0, 0.0);**  **glBegin(GL\_QUADS); // BL BR TR TL**  **glVertex2f(0.55, 0.65);**  **glVertex2f(0.75, 0.65);**  **glVertex2f(0.75, 0.75);**  **glVertex2f(0.55, 0.75);**  **glEnd();**  **glBegin(GL\_TRIANGLES);**  **glVertex2f(0.75,0.60 );**  **glVertex2f(0.75, 0.80);**  **glVertex2f(0.85, 0.70);**  **glEnd();**  **}**  **void drawRectangle() {**  **glColor3f(1.0, 0.0, 0.0);**  **glBegin(GL\_QUADS);**  **glVertex2f(0.2, 0.6);**  **glVertex2f(0.4,0.6);**  **glVertex2f(0.4, 0.8);**  **glVertex2f(0.2 , 0.8);**  **glEnd();**  **}**  **void drawPurpleTriangle() {**  **glColor3f(0.5, 0.0, 0.5);**  **glBegin(GL\_TRIANGLES);**  **glVertex2f(0.2, 0.3);**  **glVertex2f(0.4, 0.15);**  **glVertex2f(0.4, 0.45);**  **glEnd();**  **}**  **void drawYellowTriangle() {**  **glColor3f(1.0, 1.0, 0.0);**  **glBegin(GL\_TRIANGLES);**  **glVertex2f(0.6, 0.25);**  **glVertex2f(0.8, 0.25);**  **glVertex2f(0.7, 0.4);**  **glEnd();**  **}**  **void display() {**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **glColor4f(1.0,1.0,1.0,0.0);**  **drawArrow();**  **drawAxes();**  **drawRectangle();**  **drawPurpleTriangle();**  **drawYellowTriangle();**  **glFlush();**  **}**  **void init() {**  **glClearColor(1.0, 1.0, 1.0, 0.0);**  **glMatrixMode(GL\_PROJECTION);**  **glLoadIdentity();**  **gluOrtho2D(0.0, 1.0, 0.0, 1.0);**  **}**  **int main(int argc, char\*\* argv) {**  **glutInit(&argc, argv);**  **glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);**  **glutInitWindowSize(840, 680);**  **glutCreateWindow("OpenGL 2D Shapes");**  **glutDisplayFunc(display);**  **init();**  **glutMainLoop();**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |