**Lab Taks-2**

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| **Question- 1**  Draw a Rainbow Flag   |  | | --- | |  | |  | |  | |  | |  | |  | |  | |
| **Graph Plot (Picture)-** |
| **Code-**  #include <windows.h>  #include <GL/glut.h>  void display()  {  glClearColor(0, 0, 0, 0.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  glBegin(GL\_POLYGON); //violet  glColor3ub(159, 5, 255);  glVertex2i(-60,70);  glVertex2i(60,70);  glVertex2i(60,50);  glVertex2i(-60,50);  glEnd();  glBegin(GL\_POLYGON); //blue  glColor3ub(5, 93, 255);  glVertex2i(-60,50);  glVertex2i(60,50);  glVertex2i(60,30);  glVertex2i(-60,30);  glEnd();  glBegin(GL\_POLYGON); //indigo  glColor3ub(65, 222, 250);  glVertex2i(-60,30);  glVertex2i(60,30);  glVertex2i(60,10);  glVertex2i(-60,10);  glEnd();  glBegin(GL\_POLYGON); //green  glColor3ub(4, 196, 46);  glVertex2i(-60,10);  glVertex2i(60,10);  glVertex2i(60,-10);  glVertex2i(-60,-10);  glEnd();  glBegin(GL\_POLYGON); //orange  glColor3ub(255, 84, 5);  glVertex2i(-60,-10);  glVertex2i(60,-10);  glVertex2i(60,-30);  glVertex2i(-60,-30);  glEnd();  glBegin(GL\_POLYGON); //yellow  glColor3ub(255, 255, 0);  glVertex2i(-60,-30);  glVertex2i(60,-30);  glVertex2i(60,-50);  glVertex2i(-60,-50);  glEnd();  glBegin(GL\_POLYGON); //red  glColor3ub(255,0,0);  glVertex2i(-60,-50);  glVertex2i(60,-50);  glVertex2i(60,-70);  glVertex2i(-60,-70);  glEnd();  glFlush();  }  int main(int argc, char\*\* argv)  {  glutInit(&argc, argv);  glutInitWindowSize(1000, 600);  glutCreateWindow("lab task 1 [22-47226-1]");  glutDisplayFunc(display);  gluOrtho2D(-60,60,-70,70);  glutMainLoop();  return 0;  } |
| **Output Screenshot (Full Screen)-** |

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| **Question- 2**  Draw 4X4 Chess Board |
| **Graph Plot (Picture)-** |
| **Code-**  #include <windows.h>  #include <GL/glut.h>  void CreateChessSquare(int a, int b)  {  glBegin(GL\_POLYGON);  glColor3ub(255, 255, 255);  glVertex2i(a,b);  glVertex2i(a+40, b);  glVertex2i(a+40, b-40);  glVertex2i(a, b-40);  glEnd();  }  void display()  {  glClearColor(0, 0, 0, 0.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  CreateChessSquare(-80, 80); //1st row  CreateChessSquare(0, 80);  CreateChessSquare(-40, 40); //2nd row  CreateChessSquare(40, 40);  CreateChessSquare(-80, 0); //3rd row  CreateChessSquare(0, 0);  CreateChessSquare(-40, -40); //4th row  CreateChessSquare(40, -40);  glFlush();  }  int main(int argc, char\*\* argv)  {  glutInit(&argc, argv);  glutInitWindowSize(700, 700);  glutCreateWindow("lab task 2 [22-47226-1]");  glutDisplayFunc(display);  gluOrtho2D(-80,80,-80,80);  glutMainLoop();  return 0;  } |
| **Output Screenshot (Full Screen)-** |

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| **Question- 3**  Create the batman logo given below- |
| **Graph Plot (Picture)-**  **(Not Needed)** |
| **Code-**  #include <windows.h>  #include <GL/glut.h>  void display()  {  glClearColor(1, 1, 0, 0.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  glBegin(GL\_POLYGON); //background logo  glColor3ub(255,255,0);  glVertex2i(-65,0);  glVertex2i(-65,20);  glVertex2i(-50,50);  glVertex2i(50,50);  glVertex2i(65,20);  glVertex2i(65,0);  glVertex2i(65,-20);  glVertex2i(50,-50);  glVertex2i(-50,-50);  glVertex2i(-65,-20);  glVertex2i(-65,0);  glEnd();  glPolygonMode(GL\_FRONT\_AND\_BACK, GL\_LINE);  glLineWidth(6.5);  glBegin(GL\_POLYGON); //background border  glColor3ub(0,0,0);  glVertex2i(-65,0);  glVertex2i(-65,20);  glVertex2i(-50,50);  glVertex2i(50,50);  glVertex2i(65,20);  glVertex2i(65,0);  glVertex2i(65,-20);  glVertex2i(50,-50);  glVertex2i(-50,-50);  glVertex2i(-65,-20);  glVertex2i(-65,0);  glEnd();  glPolygonMode(GL\_FRONT\_AND\_BACK, GL\_FILL);  glBegin(GL\_POLYGON); //bat head- right  glColor3ub(0,0,0);  glVertex2i(0,0);  glVertex2i(0,12);  glVertex2f(1.5,12);  glVertex2i(4,23);  glVertex2i(4,5);  glVertex2i(6,5);  glVertex2i(6,0);  glEnd();  glBegin(GL\_POLYGON); //bathead-left  glColor3ub(0,0,0);  glVertex2i(0,0);  glVertex2i(0,12);  glVertex2f(-1.5,12);  glVertex2i(-4,23);  glVertex2i(-4,5);  glVertex2i(-6,5);  glVertex2i(-6,0);  glEnd();  glBegin(GL\_POLYGON); //bat wing p1- right  glColor3ub(0,0,0);  glVertex2i(6,0);  glVertex2i(6,5);  glVertex2f(12,9);  glVertex2i(18,15);  glVertex2i(21,25);  glVertex2i(21,0);  glEnd();  glBegin(GL\_POLYGON); //bat wing p1- left  glColor3ub(0,0,0);  glVertex2i(-6,0);  glVertex2i(-6,5);  glVertex2f(-12,9);  glVertex2i(-18,15);  glVertex2i(-21,25);  glVertex2i(-21,0);  glEnd();  glBegin(GL\_POLYGON); //bat wing p2- right  glColor3ub(0,0,0);  glVertex2i(21,25);  glVertex2i(23,26);  glVertex2f(60,26);  glVertex2i(45,8);  glVertex2i(33,5);  glVertex2i(21,0);  glEnd();  glBegin(GL\_POLYGON); //bat wing p2- left  glColor3ub(0,0,0);  glVertex2i(-21,25);  glVertex2i(-23,26);  glVertex2f(-60,26);  glVertex2i(-45,8);  glVertex2i(-33,5);  glVertex2i(-21,0);  glEnd();  glBegin(GL\_POLYGON); //bat tail - right  glColor3ub(0,0,0);  glVertex2i(0,0);  glVertex2i(0,-45);  glVertex2f(4,-22);  glVertex2i(7,-16);  glVertex2i(9,-14);  glVertex2i(11,-12);  glVertex2i(13,-10);  glVertex2i(15,-6);  glVertex2i(15,0);  glEnd();  glBegin(GL\_POLYGON); //bat tail - left  glColor3ub(0,0,0);  glVertex2i(0,0);  glVertex2i(0,-45);  glVertex2f(-4,-22);  glVertex2i(-7,-16);  glVertex2i(-9,-14);  glVertex2i(-11,-12);  glVertex2i(-13,-10);  glVertex2i(-15,-6);  glVertex2i(-15,0);  glEnd();  glBegin(GL\_POLYGON); //bat tail remainder- right  glColor3ub(0,0,0);  glVertex2i(15,-6);  glVertex2i(21,0);  glVertex2i(15,0);  glEnd();  glBegin(GL\_POLYGON); //bat tail remainder- left  glColor3ub(0,0,0);  glVertex2i(-15,-6);  glVertex2i(-21,0);  glVertex2i(-15,0);  glEnd();  glFlush();  }  int main(int argc, char\*\* argv)  {  glutInit(&argc, argv);  glutInitWindowSize(1000, 600);  glutCreateWindow("lab task 2 [22-47226-1] - Batman");  glutDisplayFunc(display);  gluOrtho2D(-70,70,-70,70);  glutMainLoop();  return 0;  } |
| **Output Screenshot (Full Screen)-** |