**Lab Taks-1**

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 the given deadline given in the class in VUES to the section named Lab Tak-1
* Must include resources for all the section in the table

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| **Question-1**  Draw the object- |
| **Graph Plot (Picture)-**  **A screenshot of a computer  Description automatically generated** |
| Code-  #include <windows.h>  #include <GL/glut.h>  void rectangle() {  glPointSize(5);  glLineWidth(5.5);  glBegin(GL\_LINES);  glColor3f(0.0f, 0.0f, 0.0f);  glVertex2f(1,4);  glVertex2f(7,4);  glVertex2f(1,1);  glVertex2f(7,1);  glVertex2f(1,4);  glVertex2f(1,1);  glVertex2f(7,4);  glVertex2f(7,1);  glEnd();  }  void display() {  glClearColor(1.0f, 1.0f, 1.0f, 1.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  rectangle();  glFlush();  }  int main(int argc, char\*\* argv) {  glutInit(&argc, argv);  glutCreateWindow("OpenGL Setup Test");  glutInitWindowSize(320,320);  glutDisplayFunc(display);  gluOrtho2D(-10,10,-10,10);  glutMainLoop();  return 0;  } |
| **Output Screenshot (Full Screen)-**  **A computer screen shot of a black screen  Description automatically generated** |

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| **Question-2**  Draw the object- |
| **Graph Plot (Picture)-**  **A screenshot of a computer  Description automatically generated** |
| Code-  #include <windows.h>  #include <GL/glut.h>  void polygon() {  glPointSize(3);  glLineWidth(2.5);  glBegin(GL\_POLYGON);  glColor3f(1.0f, 0.0f, 0.0f);    glVertex2f(4,4);  glVertex2f(22,4);  glVertex2f(8,14);  glVertex2f(18,14);  glVertex2f(4,4);  glVertex2f(8,14);  glVertex2f(18,14);  glVertex2f(22,4);  glEnd();  }  void display() {  glClearColor(1.0f, 1.0f, 1.0f, 1.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  polygon();  glFlush();  }  int main(int argc, char\*\* argv)  {  glutInit(&argc, argv);  glutCreateWindow("OpenGL Setup Test");  glutInitWindowSize(320,320);  glutDisplayFunc(display);  gluOrtho2D(-30,30,-30,30);  glutMainLoop();  return 0;  } |
| **Output Screenshot (Full Screen)-**  **A screenshot of a computer  Description automatically generated** |

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| **Question-3**  Draw the object-  Octagon Shape | Area & Angles - Video & Lesson Transcript | Study.com |
| **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);  glBegin(GL\_POLYGON);  glColor3f(0.0f, 0.0f, 0.0f);  glVertex2f(-0.209f, 0.409f);  glVertex2f(0.209f, 0.409f);  glVertex2f(0.209f, 0.409f);  glVertex2f(0.409f, 0.209f);  glVertex2f(0.409f, 0.209f);  glVertex2f(0.409f, -0.209f);  glVertex2f(0.409f, -0.209f);  glVertex2f(0.209f, -0.409f);  glVertex2f(0.209f, -0.409f);  glVertex2f(-0.209f, -0.409f);  glVertex2f(-0.209f, -0.409f);  glVertex2f(-0.409f, -0.209f);  glVertex2f(-0.409f, -0.209f);  glVertex2f(-0.409f, 0.209f);  glVertex2f(-0.409f, 0.209f);  glVertex2f(-0.209f, 0.409f);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(1.0f, 0.0f, 0.0f);  glVertex2f(-0.2f, 0.4f);  glVertex2f(0.2f, 0.4f);  glVertex2f(0.2f, 0.4f);  glVertex2f(0.4f, 0.2f);  glVertex2f(0.4f, 0.2f);  glVertex2f(0.4f, -0.2f);  glVertex2f(0.4f, -0.2f);  glVertex2f(0.2f, -0.4f);  glVertex2f(0.2f, -0.4f);  glVertex2f(-0.2f, -0.4f);  glVertex2f(-0.2f, -0.4f);  glVertex2f(-0.4f, -0.2f);  glVertex2f(-0.4f, -0.2f);  glVertex2f(-0.4f, 0.2f);  glVertex2f(-0.4f, 0.2f);  glVertex2f(-0.2f, 0.4f);  glEnd();  glFlush();  }  int main(int argc, char\*\* argv) {  glutInit(&argc, argv);  glutInitWindowSize(1000, 800);  glutCreateWindow("OpenGL Setup Test");  glutDisplayFunc(display);  glutMainLoop();  return 0;  } |
| **Output Screenshot (Full Screen)-**  **A screenshot of a computer  Description automatically generated** |

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| **Question-4**  Draw the object- |
| **Graph Plot (Picture)-**  **A screen shot of a graph  Description automatically generated** |
| Code-  #include <windows.h>  #include <GL/glut.h>    void drawTriangle1() {      glBegin(GL\_POLYGON);      glColor3ub(255, 0, 0);      glVertex2f(50.0, 90.0);      glVertex2f(60.0, 60.0);      glVertex2f(40.0, 60.0);      glEnd();  }  void drawTriangle2() {      glBegin(GL\_POLYGON);     glColor3ub(255, 0, 0);      glVertex2f(60.0, 60.0);      glVertex2f(90.0, 60.0);      glVertex2f(65.0, 40.0);      glEnd();  }  void drawTriangle3() {      glBegin(GL\_POLYGON);      glColor3ub(255, 0, 0);      glVertex2f(65.0, 40.0);      glVertex2f(75.0, 10.0);      glVertex2f(50.0, 30.0);      glEnd();  }  void drawTriangle4() {      glBegin(GL\_POLYGON);      glColor3ub(255, 0, 0);      glVertex2f(50.0, 30.0);      glVertex2f(25.0, 10.0);      glVertex2f(35.0, 40.0);      glEnd();  }  void drawTriangle5() {      glBegin(GL\_POLYGON);      glColor3ub(255, 0, 0);      glVertex2f(35.0, 40.0);      glVertex2f(10.0, 60.0);      glVertex2f(40.0, 60.0);      glEnd();  }  void drawPentagon() {      glBegin(GL\_POLYGON);      glColor3ub(255, 0, 0);      glVertex2f(40.0, 60.0);      glVertex2f(60.0, 60.0);      glVertex2f(65.0, 40.0);      glVertex2f(50.0, 30.0);      glVertex2f(35.0, 40.0);      glEnd();  }  void display() {      glClearColor(1.0, 1.0, 1.0, 1.0);      glClear(GL\_COLOR\_BUFFER\_BIT);        drawTriangle1();      drawTriangle2();      drawTriangle3();      drawTriangle4();      drawTriangle5();      drawPentagon();      glFlush();  }  int main(int argc, char\*\* argv) {      glutInit(&argc, argv);      glutCreateWindow("OpenGL Setup");      glutInitWindowSize(420, 420);      glutInitWindowPosition(80, 80);      glutDisplayFunc(display);      gluOrtho2D(-30, 120, -30, 120);      glutMainLoop();      return 0;  } |
| **Output Screenshot (Full Screen)-**  **A screenshot of a computer  Description automatically generated** |

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| **Question-5**  Draw the object- |
| Graph Plot (Picture)-  A screenshot of a computer  Description automatically generated |
| Code-  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(5);  glBegin(GL\_LINES); //XY  glColor3f(0.0f, 0.0f, 0.0f);  glVertex2f(0.0f, 1.0f);  glVertex2f(0.0f, -1.0f);  glVertex2f(-1.0f, 0.0f);  glVertex2f(1.0f, 0.0f);  glEnd();  glBegin(GL\_POLYGON); //rectangle  glColor3f(1.0f, 0.0f, 0.0f);  glVertex2f(-0.8f, 0.2f);  glVertex2f(-0.8f, 0.6f);  glVertex2f(-0.8f, 0.6f);  glVertex2f(-0.3f, 0.6f);  glVertex2f(-0.3f, 0.6f);  glVertex2f(-0.3f, 0.2f);  glVertex2f(-0.3f, 0.2f);  glVertex2f(-0.8f, 0.2f);  glEnd();  glBegin(GL\_POLYGON);//Arrow  glColor3f(0.0f, 1.0f, 0.0f);  glVertex2f(0.2f, 0.5f);  glVertex2f(0.5f, 0.5f);  glVertex2f(0.5f, 0.5f);  glVertex2f(0.5f, 0.3f);  glVertex2f(0.5f, 0.3f);  glVertex2f(0.2f, 0.3f);  glVertex2f(0.2f, 0.3f);  glVertex2f(0.2f, 0.5f);  glEnd();  glBegin(GL\_POLYGON);  glColor3f(0.0f, 1.0f, 0.0f);  glVertex2f(0.5f, 0.6f);  glVertex2f(0.8f, 0.4f);  glVertex2f(0.8f, 0.4f);  glVertex2f(0.5f, 0.2f);  glVertex2f(0.5f, 0.2f);  glVertex2f(0.5f, 0.6f);  glEnd();  glBegin(GL\_POLYGON);//triangle  glColor3f(1.0f, 1.0f, 0.0f);  glVertex2f(0.2f, -0.7f);  glVertex2f(0.8f, -0.7f);  glVertex2f(0.8f, -0.7f);  glVertex2f(0.5f, -0.3f);  glVertex2f(0.5f, -0.3f);  glVertex2f(0.2f, -0.7f);  glEnd();  glBegin(GL\_POLYGON);//triangle  glColor3f(128.0f, 0.0f, 128.0f);  glVertex2f(-0.3f, -0.2f);  glVertex2f(-0.3f, -0.8f);  glVertex2f(-0.3f, -0.8f);  glVertex2f(-0.7f, -0.5f);  glVertex2f(-0.7f, -0.5f);  glVertex2f(-0.3f, -0.2f);  glEnd();  glFlush();  }  int main(int argc, char\*\* argv) {  glutInit(&argc, argv);  glutInitWindowSize(1000, 800);  glutCreateWindow("OpenGL Setup Test");  glutDisplayFunc(display);  glutMainLoop();  return 0;  } |
| **Output Screenshot (Full Screen)-**  A screenshot of a computer  Description automatically generated |

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| **Question-6**  Draw the object- |
| **Graph Plot (Picture)-** |
| Code-  #include <windows.h>  #include <GL/glut.h>  void diamond() {  glLineWidth(3);  glBegin(GL\_POLYGON);///diamond  glColor3ub(255,0,0);  glVertex2f(0.0, 150.0);  glVertex2f(150.0, 50.0);  glVertex2f(150.0, 50.0);  glVertex2f(50.0, -50.0);  glVertex2f(50.0,-50.0);  glVertex2f(0.0,-50.0);  glVertex2f(0.0,-50.0);  glVertex2f(-50.0,-50.0);  glVertex2f(-150.0,50.0);  glEnd();  glBegin(GL\_LINES);///Rectangle  glColor3ub(115,215,255);  glVertex2f(-50.0, 100.0);  glVertex2f(50.0, 100.0);  glVertex2f(50.0, 100.0);  glVertex2f(50.0, 50.0);  glVertex2f(50.0, 50.0);  glVertex2f(-50.0, 50.0);  glVertex2f(-50.0, 50.0);  glVertex2f(-50.0, 100.0);  glEnd();  glBegin(GL\_POLYGON);///triangle  glColor3ub(255, 255, 0);  glVertex2f(0.0, 50.0);  glVertex2f(100.0, -150.0);  glVertex2f(-100.0, -150.0);  glEnd();  glBegin(GL\_LINES);///cross line  glColor3ub(255, 165, 0);  glVertex2f(-100.0, 150.0);  glVertex2f(200.0, -100.0);  glVertex2f(100.0, 150.0);  glVertex2f(-200.0, -100.0);  glEnd();  }  void display() {  glClearColor(1.0, 1.0, 1.0, 1.0);  glClear(GL\_COLOR\_BUFFER\_BIT);  diamond();  glFlush();  }  int main(int argc, char\*\* argv) {  glutInit(&argc, argv);  glutCreateWindow("OpenGL Setup");  glutInitWindowSize(420, 420);  glutInitWindowPosition(80, 80);  glutDisplayFunc(display);  gluOrtho2D(-270, 270, -270, 270);  glutMainLoop();  return 0;  } |
| **Output Screenshot (Full Screen)-**  **A screenshot of a computer  Description automatically generated** |