**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)-** |
| **#include <windows.h>**  **#ifdef \_\_APPLE\_\_**  **#include <GLUT/glut.h>**  **#else**  **#include <GL/glut.h>**  **#endif**  **#include <stdlib.h>**  **static int slices = 16;**  **static int stacks = 16;**  **#include <windows.h>**  **#include <GL/glut.h>**  **void line()**  **{ glColor3ub(0, 0, 0);**  **glBegin(GL\_LINES);**  **glVertex2f(2,0);**  **glVertex2f(4,0);**  **glEnd();**  **}**  **void line2()**  **{ glColor3ub(0, 0, 0);**  **glBegin(GL\_LINES);**  **glVertex2f(4,1);**  **glVertex2f(2,1);**  **glEnd();**  **}**  **void line3()**  **{ glColor3ub(0, 0, 0);**  **glBegin(GL\_LINES);**  **glVertex2f(4,0);**  **glVertex2f(4,1);**  **glEnd();**  **}**  **void line4()**  **{ glColor3ub(0, 0, 0);**  **glBegin(GL\_LINES);**  **glVertex2f(2,0);**  **glVertex2f(2,1);**  **glEnd();**  **}**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f);**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **glLineWidth(2);**  **line();**  **line2();**  **line3();**  **line4();**  **glFlush();**  **}**  **int main(int argc, char \*argv[])**  **{**  **glutInit(&argc, argv);**  **glutInitWindowPosition(5, 200);**  **glutInitWindowSize(320, 320);**  **glutCreateWindow("Shraboni Biswas Naboni-26");**  **glutDisplayFunc(display);**  **gluOrtho2D(-10, 10, -10, 10);**  **glutMainLoop();**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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| **Question-2**  Draw the object- |
| **Graph Plot (Picture)-** |
| **Code-**  **#include <windows.h>**  **#ifdef \_\_APPLE\_\_**  **#include <GLUT/glut.h>**  **#else**  **#include <GL/glut.h>**  **#endif**  **#include <stdlib.h>**  **static int slices = 16;**  **static int stacks = 16;**  **#include <windows.h>**  **#include <GL/glut.h>**  **void star()**  **{**  **glColor3ub(230, 64, 79);**  **glBegin(GL\_POLYGON);**  **glVertex2f(1.0, 0.0); // A**  **glVertex2f(3.8711845954754, 0.0); // B**  **glVertex2f(3.4318800813266, 1.8310694495011); // C**  **glVertex2f(1.4499015756322, 1.8310694495011); // D**  **glEnd();**  **}**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f);**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **//glLineWidth(4); // glLineWidth(4);**  **star();**  **glLineWidth(4);**  **glFlush();**  **}**  **int main(int argc, char \*argv[])**  **{**  **glutInit(&argc, argv);**  **glutInitWindowPosition(5, 200);**  **glutInitWindowSize(320, 320);**  **glutCreateWindow("Shraboni Biswas Naboni-26");**  **glutDisplayFunc(display);**  **gluOrtho2D(-12, 12, -12, 12);**  **glutMainLoop();**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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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>**  **#ifdef \_\_APPLE\_\_**  **#include <GLUT/glut.h>**  **#else**  **#include <GL/glut.h>**  **#endif**  **#include <stdlib.h>**  **static int slices = 16;**  **static int stacks = 16;**  **#include <windows.h>**  **#include <GL/glut.h>**  **void boundary()**  **{**  **glColor3ub(0, 0, 0);**  **glBegin(GL\_LINE\_LOOP);**  **glVertex2f(1.822335212363f, 3.1963498634518f); // A**  **glVertex2f(3.221979827209f, 3.1963498634518f); // B**  **glVertex2f(4.0395069352567f, 2.3586063713542f); // C**  **glVertex2f(4.0392905512067f, 1.193385896575f); // D**  **glVertex2f(3.1913306750591f, 0.31532956136f); // E**  **glVertex2f(1.812118828313f, 0.30511317731f); // F**  **glVertex2f(0.9641589521654f, 1.193385896575f); // G**  **glVertex2f(0.9639425681154f, 2.379031394541f); // H**  **glEnd();**  **}**  **void star()**  **{**  **glColor3ub(230, 64, 79);**  **glBegin(GL\_POLYGON);**  **glVertex2f(1.822335212363f, 3.1963498634518f); // A**  **glVertex2f(3.221979827209f, 3.1963498634518f); // B**  **glVertex2f(4.0495069352567f, 2.3586063713542f); // C**  **glVertex2f(4.0392905512067f, 1.193385896575f); // D**  **glVertex2f(3.1913306750591f, 0.31532956136f); // E**  **glVertex2f(1.812118828313f, 0.30511317731f); // F**  **glVertex2f(0.9641589521654f, 1.193385896575f); // G**  **glVertex2f(0.9539425681154f, 2.379031394541f); // H**  **glEnd();**  **}**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f);**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **//glLineWidth(4); // glLineWidth(4);**  **star();**  **boundary();**  **glLineWidth(4);**  **glFlush();**  **}**  **int main(int argc, char \*argv[])**  **{**  **glutInit(&argc, argv);**  **glutInitWindowPosition(5, 200);**  **glutInitWindowSize(320, 320);**  **glutCreateWindow("Shraboni Biswas Naboni-26");**  **glutDisplayFunc(display);**  **gluOrtho2D(-12, 12, -12, 12);**  **glutMainLoop();**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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| **Question-4**  Draw the object- |
| **Graph Plot (Picture)-** |
| **Code-**  **#include <windows.h>**  **#ifdef \_\_APPLE\_\_**  **#include <GLUT/glut.h>**  **#else**  **#include <GL/glut.h>**  **#endif**  **#include <stdlib.h>**  **static int slices = 16;**  **static int stacks = 16;**  **#include <windows.h>**  **#include <GL/glut.h>**  **void star()**  **{**  **glColor3ub(230, 64, 79 );**  **glBegin(GL\_POLYGON);**  **//glVertex2f(2.3, 0.78);**  **glVertex2f(3.53, 1.4);**  **glVertex2f(4.83, 0.72);**  **glVertex2f(4.39, 1.99);**  **glVertex2f(5.58, 2.7);**  **glVertex2f(4.07, 2.84);**  **glVertex2f(3.53, 4.04);**  **//glVertex2f(3.07, 2.76);**  **//glVertex2f(1.63, 2.72);**  **//glVertex2f(2.72, 1.99);**  **glEnd();**  **}**  **void star2()**  **{**  **glColor3ub(230, 64, 79 );**  **glBegin(GL\_POLYGON);**  **glVertex2f(3.53, 1.4);**  **glVertex2f(2.3, 0.78);**  **//glVertex2f(4.83, 0.72);**  **//glVertex2f(4.39, 1.99);**  **//glVertex2f(5.58, 2.7);**  **//glVertex2f(4.07, 2.84);**  **glVertex2f(2.72, 1.99);**  **glVertex2f(1.63, 2.72);**  **glVertex2f(3.07, 2.76);**  **glVertex2f(3.53, 4.04);**  **glEnd();**  **}**  **void boundary()**  **{**  **glColor3ub(0, 0, 0);**  **glBegin(GL\_LINE\_LOOP);**  **glVertex2f(2.3, 0.78);**  **glVertex2f(3.53, 1.4);**  **glVertex2f(4.83, 0.72);**  **glVertex2f(4.39, 1.99);**  **glVertex2f(5.58, 2.7);**  **glVertex2f(4.07, 2.84);**  **glVertex2f(3.53, 4.04);**  **glVertex2f(3.07, 2.76);**  **glVertex2f(1.63, 2.72);**  **glVertex2f(2.72, 1.99);**  **glEnd();**  **}**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f);**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **//glLineWidth(4); // glLineWidth(4);**  **star();**  **star2();**  **glLineWidth(4);**  **boundary();**  **glFlush();**  **}**  **int main(int argc, char \*argv[])**  **{**  **glutInit(&argc, argv);**  **glutInitWindowPosition(5, 200);**  **glutInitWindowSize(320, 320);**  **glutCreateWindow("Shraboni Biswas Naboni-26");**  **glutDisplayFunc(display);**  **gluOrtho2D(-12, 12, -12, 12);**  **glutMainLoop();**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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| **Question-5**  Draw the object- |
| **Graph Plot (Picture)-** |
| **Code-**  **#include <windows.h>**  **#ifdef \_\_APPLE\_\_**  **#include <GLUT/glut.h>**  **#else**  **#include <GL/glut.h>**  **#endif**  **#include <stdlib.h>**  **static int slices = 16;**  **static int stacks = 16;**  **#include <windows.h>**  **#include <GL/glut.h>**  **void squar() {**  **glColor3ub(230, 64, 79);**  **glBegin(GL\_POLYGON);**  **glVertex2f(0.739114854991f, 4.9786275588968f);//k**  **glVertex2f(2.632839768739f, 4.9587823476824f);//l**  **glVertex2f(2.625752646574f, 3.3675660739495f);//m**  **glVertex2f(0.739114854991f, 3.3675660739495f);//n**  **glEnd();**  **}**  **void arrow\_part\_one()**  **{**  **glColor3ub(0, 255, 0);**  **glBegin(GL\_POLYGON);**  **glVertex2f(3.9824360023191f, 4.5334658327929f);//p**  **glVertex2f(5.9326683262026f, 4.5170603650935f);//Q**  **glVertex2f(5.9360452903712f, 3.6745270160469f);//U**  **glVertex2f(3.9824360023191f, 3.6555387354523f);//O**  **/\***  **glVertex2f(5.957171385644f, 5.0054710182353f);**  **glVertex2f(6.8444673871029f, 4.1604272073221f);**  **glVertex2f(5.9360452903712f, 3.2520051105903f);\*/**  **glEnd();**  **}**  **void arrow\_part\_two()**  **{**  **glColor3ub(0, 255, 0);**  **glBegin(GL\_POLYGON);**  **glVertex2f(5.9226683262026f, 4.5170603650935f);//Q**  **glVertex2f(5.9185106312947f, 5.0644128240466f);//R**  **glVertex2f(6.8444673871029f, 4.1604272073221f);//S**  **glVertex2f(5.9360452903712f, 3.2520051105903f);//T**  **glVertex2f(5.9360452903712f, 3.6745270160469f);//U**  **glEnd();**  **}**  **void line\_one()**  **{**  **glColor3ub(0, 0, 0);**  **glBegin(GL\_LINES);**  **glVertex2f(0.2953778525252f, 2.787231014588f);**  **glVertex2f(6.5020133827303f, 2.7827945345808f);**  **glEnd();**  **}**  **void line\_two()**  **{**  **glColor3ub(0, 0, 0);**  **glBegin(GL\_LINES);**  **glVertex2f(3.3888870341806f, 5.3813929301336f);**  **glVertex2f(3.3888870341806f, 0.1666412814885f);**  **glEnd();**  **}**  **void Tringle()**  **{**  **glColor3ub(128, 0, 128);**  **glBegin(GL\_POLYGON);**  **glVertex2f(2.5197617594064f, 2.5832335089094f);//H**  **glVertex2f(2.5185635819729f, 0.5482084752918f);//I**  **glVertex2f(0.7815112098581f, 1.5445228146671f);//J**  **glEnd();**  **}**  **void Tringle\_2()**  **{**  **glColor3ub(255, 255, 0);**  **glBegin(GL\_POLYGON);**  **glVertex2f(5.1059394062955f, 2.1168736053721f);//H**  **glVertex2f(4.0884268894867f, 0.7389920721935f);//I**  **glVertex2f(6.0598573908037f, 0.7389920721935f);//J**  **glEnd();**  **}**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f);**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **squar();**  **arrow\_part\_one();**  **arrow\_part\_two();**  **line\_one();**  **line\_two();**  **Tringle();**  **Tringle\_2();**  **glFlush();**  **}**  **int main(int argc, char \*argv[])**  **{**  **glutInit(&argc, argv);**  **glutInitWindowPosition(5, 200);**  **glutInitWindowSize(320, 320);**  **glutCreateWindow("Shraboni Biswas Naboni-26");**  **glutDisplayFunc(display);**  **gluOrtho2D(-12, 12, -12, 12);**  **glutMainLoop();**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |

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| **Question-6**  Draw the object- |
| **Graph Plot (Picture)-** |
| **Code-#include <windows.h>**  **#ifdef \_\_APPLE\_\_**  **#include <GLUT/glut.h>**  **#else**  **#include <GL/glut.h>**  **#endif**  **#include <stdlib.h>**  **static int slices = 16;**  **static int stacks = 16;**  **#include <windows.h>**  **#include <GL/glut.h>**  **void RED() {**  **glColor3ub(230, 64, 79);**  **glBegin(GL\_POLYGON);**  **glVertex2f(3.5210695204163f, 3.6763014224961f);**  **glVertex2f(5.6255858905021f, 2.6603280024547f);**  **glVertex2f(3.4605949120805f, 1.692734269082f);**  **glVertex2f(1.3439836203276f, 2.6482330807876f);**  **glEnd();**  **}**  **void line\_one()**  **{**  **glColor3ub(255, 165, 0);**  **glLineWidth(3.0f);**  **glBegin(GL\_LINES);**  **glVertex2f(4.6942769221308f, 4.1842881325168f);**  **glVertex2f(1.9971093903542f, 1.1726526373941f);**  **glEnd();**  **}**  **void line\_two()**  **{**  **glColor3ub(255, 165, 0);**  **glBegin(GL\_LINES);**  **glVertex2f(2.2752925886989f, 3.9544846208408f);**  **glVertex2f(5.0450296504784f, 1.2815069323985f);**  **glEnd();**  **}**  **void line\_tlo()**  **{**  **glColor3ub(173, 216, 230);**  **glBegin(GL\_LINES);**  **glVertex2f(2.589760552045, 3.0957451824725);**  **glVertex2f(2.589760552045, 2.3942397257772);**  **glEnd();**  **}**  **void line\_tlo1()**  **{**  **glColor3ub(173, 216, 230);**  **glBegin(GL\_LINES);**  **glVertex2f(4.3435241937832f, 3.1320299474739);**  **glVertex2f(4.3456191154503f, 2.38214480411f);**  **glEnd();**  **}**  **void lines()**  **{**  **glColor3ub(173, 216, 230);**  **glBegin(GL\_LINES);**  **glVertex2f(2.589760552045f, 2.3942397257772f);**  **glVertex2f(4.3556191154503f, 2.40214480411f);**  **glEnd();**  **}**  **void liness()**  **{**  **glColor3ub(173, 216, 230);**  **glBegin(GL\_LINES);**  **glVertex2f(2.589760552045, 3.0957451824725);**  **glVertex2f(4.3435241937832, 3.1020299474739);**  **glEnd();**  **}**  **void Tringle\_2()**  **{**  **glColor3ub(255, 255, 0);**  **glBegin(GL\_POLYGON);**  **glVertex2f(3.496879677082, 2.39758600391086);**  **glVertex2f(2.3478621187018, 0.6646659273734);**  **glVertex2f(4.633802313795, 0.6646659273734);**  **glEnd();**  **}**  **void display() {**  **glClearColor(1.0f, 1.0f, 1.0f, 1.0f);**  **glClear(GL\_COLOR\_BUFFER\_BIT);**  **RED();**  **line\_one();**  **line\_two();**  **Tringle\_2();**  **line\_tlo();**  **line\_tlo1();**  **lines();**  **liness();**  **glFlush();**  **}**  **int main(int argc, char \*argv[])**  **{**  **glutInit(&argc, argv);**  **glutInitWindowPosition(5, 200);**  **glutInitWindowSize(320, 320);**  **glutCreateWindow("Shraboni Biswas Naboni-26");**  **glutDisplayFunc(display);**  **gluOrtho2D(-12, 12, -12, 12);**  **glutMainLoop();**  **return 0;**  **}** |
| **Output Screenshot (Full Screen)-** |