**Computer Graphics**

**MidTerm**

**Performance Task**

*Instructions:*

* *The task must be shown during class time.*
* *Fill up all the sections in the tables below with the mentioned information.*
* *The completed task and this word file must be shown during class time by 14/7/2024 (Sunday).*
* *No late submission will be accepted.*

|  |
| --- |
| Question-1: Create the figure given below  Flag of Argentina | History, Design ...Flag of Bangladesh | Meaning, Colors ...  Flag of the United States of America ...A flag with a black star  Description automatically generated |
| Graph:  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated    A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated |
| Code:  #include <windows.h>  #ifdef \_\_APPLE\_\_  #include <GLUT/glut.h>  #else  #include <GL/glut.h>  #endif  #include <stdlib.h>  #include <math.h>  static int slices = 16;  static int stacks = 16;  void drawPolygons()  {  // Polygon 1 (Bangladesh)  glBegin(GL\_POLYGON);  glColor3ub(0, 100, 0);  glVertex2f(-10.027266326729, 0.35); // A  glVertex2f(-1.016, 0.354); // B  glVertex2f(-1.0125, 5.76); // M  glVertex2f(-10.026, 5.76); // I  glEnd();  ///////////////// yellow red green flag with star  // Polygon 3 (yellow)  glBegin(GL\_POLYGON);  //(-0.7341460929439,-4.6019471809703)  glColor3ub(255, 255, 0);  glVertex2f(-0.7341460929439, -4.6019471809703); // E1  glVertex2f(-10.0292981919223, -4.6997266943441); // D1  glVertex2f(-10.0511512008382, -2.5633546103541); // B1  glVertex2f(-0.7341460929439, -2.5474281058962); // C1  glEnd();  // Polygon 2 (green)  glBegin(GL\_POLYGON);  glColor3ub(0, 100, 0);  glVertex2f(-10.0292981919223, -6.676); // E  glVertex2f(-0.7374390203244, -6.6731959932852); // F  glVertex2f(-0.7341460929439, -4.6019471809703); // E1  glVertex2f(-10.0292981919223, -4.60197266943441); // D1  glEnd();  // Polygon 4 (red)  glBegin(GL\_POLYGON);  glColor3ub(255, 0, 0);  glVertex2f(-10.0511512008382, -2.5633546103541); // B1  glVertex2f(-0.7341460929439, -2.5574281058962); // C1  glVertex2f (-0.7374390203244,-0.5869904961369); // O  glVertex2f(-10.05,-0.606); // N  glEnd();  ////////////////////////////////////////american flag  // Polygon 4 (Blue)  glBegin(GL\_POLYGON);  glColor3ub(0, 0, 255);  glVertex2f(0.7777601884016,-0.7130719743611); // V1  glVertex2f(0.7777601884016,-3.9024176343);  glVertex2f(3.9939593445595,-3.9024176343293); // T1  glVertex2f(3.9939593445595,-0.7192533241628); // U1  glEnd();  glBegin(GL\_POLYGON);//red1  glColor3ub(255, 0, 0);  glVertex2f(3.9939593445595,-0.7192533241628); // u1  glVertex2f(10.8326143923898,-0.7130719743611); // W1  glVertex2f(10.8249448028522,-1.1214649287659) ;// Z1  glVertex2f(4.0027979945322,-1.1186038461382); // A2  glEnd();  glBegin(GL\_POLYGON);//red2  glColor3ub(255, 0, 0);  glVertex2f(3.9939593445595,-1.4917307174309); //B2  glVertex2f(10.8249448028522,-1.5042945850452); // C2  glVertex2f(10.8249448028522,-1.8620648884206); // D2  glVertex2f(4,-1.8623508343634); // E2  glEnd();  glBegin(GL\_POLYGON);//red3  glColor3ub(255, 0, 0);  glVertex2f(3.9939593445595,-2.3060099289654); //F2  glVertex2f(10.8285536915221,-2.2929853247356); // C2  glVertex2f(10.8285536915221,-2.6744843126175); // D2  glVertex2f(3.9939593445595,-2.6752206549444); // E2  glEnd();  glBegin(GL\_POLYGON);//red4  glColor3ub(255, 0, 0);  glVertex2f(3.9939593445595,-3.0873532003241); //j2  glVertex2f(10.8285536915221,-3.0773532003241); // M2  glVertex2f(10.8285536915221,-3.5116056633831); // J2  glVertex2f(3.9939593445595,-3.5179798896525); // K2  glEnd();  glBegin(GL\_POLYGON);//red5  glColor3ub(255, 0, 0);  glVertex2f(0.7777601884016,-3.8920756139094); //R~1  glVertex2f(10.8367089931882,-3.8797820648338); // S1  glVertex2f(10.8367089931882,-4.3295586478627); // Q1  glVertex2f(0.7777601884016,-4.3219498735946); // P1  // (0.755741206721,-3.8920756139094)  glEnd();  glBegin(GL\_POLYGON);//red6  glColor3ub(255, 0, 0);  glVertex2f(0.7777601884016,-4.7244279567922); //o~1  glVertex2f(10.8367089931882,-4.7417846015482); // N1  glVertex2f(10.8367089931882,-5.1623997702135); // Q1  glVertex2f(0.7777601884016,-5.1803168712033); // L1  glEnd();  glBegin(GL\_POLYGON);//red7  glColor3ub(255, 0, 0);  glVertex2f(0.7777601884016,-5.5498491104686); //K~1  glVertex2f(10.8367089931882,-5.5299390053401); // J1  glVertex2f(10.8367089931882,-6.0024101749061); // I1  glVertex2f(0.7777601884016,-5.9995596873068); // H1  glEnd();  glBegin(GL\_POLYGON);//red8  glColor3ub(255, 0, 0);  glVertex2f(0.7777601884016,-6.3718594329314); //F~1  glVertex2f(10.8483529713347,-6.3866614537397); // G1  glVertex2f(10.8438993017097,-6.7543531884415); // H  glVertex2f(0.7777601884016,-6.7584031268842); // G  glEnd();  /////////Argentina  glBegin(GL\_POLYGON);//Light blue  glColor3ub(173, 216, 230);  glVertex2f(0.7539703926691,5.3261511974646); //N~2  glVertex2f(10.8635344779732,5.3016755854533); // O1  glVertex2f(10.8635344779732,3.7861830035377); // S2  glVertex2f(0.7539703926691,3.77805); // G  glEnd();  /////////Argentina  glBegin(GL\_POLYGON);//Light blue  glColor3ub(173, 216, 230);  glVertex2f(0.7539703926691,2.1510111199); //P~2  glVertex2f(10.8635344779732,2.1510111199); // Q2  glVertex2f(10.8635344779732,0.536894162973); // D  glVertex2f(0.7539703926691,0.5397279476543); // C  glEnd();  /////////////// lines of Argentina  glColor3ub (255, 230, 0);  glBegin(GL\_LINES);  glVertex2f(5.166986951732,3.0965609849386);//v2  glVertex2f(5.451,2.9858);//W2  glVertex2f(5.1307698285612,2.8625426506036);//z2  glVertex2f(5.4509698285612,2.915832);//A3  glVertex2f(5.2,2.6);//b3  glVertex2f(5.48825,2.799041);//C3  glVertex2f(5.3731459605509,2.4195793748982);//O3  glVertex2f(5.57610,2.689322);//N3  glVertex2f(5.6350236204019,2.6769983426276);//Q3  glVertex2f(5.576104,2.699322);//Q3  glVertex2f(5.6350236204019,2.2969983426276);//Q3  glVertex2f(5.68450,2.62631);//P3  glVertex2f(5.8244670339111,2.2691390171115);//S3  glVertex2f(5.80,2.60428);//R3  glVertex2f(5.9776933242495,2.3025702077308);//W3  glVertex2f(5.8968,2.61490);//V3  glVertex2f(6.1253477494846,2.4362949702079);//U3  glVertex2f(5.9805,2.64721);//T3  glVertex2f(6.3510082861647,2.5950931256494);//A4  glVertex2f(6.351,2.5950);//Z3  glVertex2f(6.4345862627129,2.7873224717103);//B4  glVertex2f(6.1643508052071,2.8959738412229);//U2  glVertex2f(6.5014486439515,3.0380564013548);//D4  glVertex2f(6.1698,2.9973);//C4  glVertex2f(6.3788676116808,3.305505926309);//F4  glVertex2f(6.13922,3.114784);//E4  glVertex2f(6.2284272538941,3.447588486441);//H4  glVertex2f(6.02201,3.258844);//G4  glVertex2f(5.9860511219043,3.631460034847);//L3  glVertex2f(5.9324,3.3063);//M3  glVertex2f(5.8058607588436,3.650616149762);//J3  glVertex2f(5.8159,3.32789);//K3  glVertex2f(5.6517392157115,3.6509615627082);//H3  glVertex2f(5.727,3.3318489);//I3  glVertex2f(5.4093630837218,3.5311664629891);//F3  glVertex2f(5.611768,3.2692);//G3  glVertex2f(5.2589227259351,3.3556527122379);//D3  glVertex2f(5.5113599,3.17147);//E3  glVertex2f(6.348012821755,2.5957963052211);//Q2  glVertex2f(6.1295916,2.7979);//E3  glEnd();  ///// Star for american  glBegin(GL\_POLYGON);  glColor3ub(225, 225, 225);  glVertex2f(1.1940952636063,-0.8477614634604); //I4  glVertex2f(1.1277234600456,-0.9955895713909); // J4  glVertex2f(0.9648108513058,-0.9955895713909); // K4  glVertex2f(1.0779446073751,-1.0876050263273); // L4  glVertex2f(1.0372164551902,-1.291245787252);//M4  glVertex2f(1.1850445631207,-1.1871627316682);//N4  glEnd();  glBegin(GL\_POLYGON);  glColor3ub(225, 225, 225);  glVertex2f(1.1850445631207,-1.1871627316682);//N4 glVertex2f(1.1277234600456,-0.9955895713909); // J4  glVertex2f(1.3404149214559,-1.289737337171); // o4  glVertex2f(1.3,-1.1); // L4  glVertex2f(1.4399726267968,-1.0197247726857);//M4  glVertex2f(1.2499079166004,-0.9925726712291);//M4  glVertex2f(1.1940952636063,-0.8477614634604);  glEnd();  glBegin(GL\_POLYGON);  glColor3ub(225, 225, 225);  glVertex2f(2.1654366472627,-0.8169162534089); //I4  glVertex2f(2.0695965756422,-0.9807718597279); // J4  glVertex2f(1.8794622400079,-0.9807718597279); // K4  glVertex2f(2.0309513854726,-1.1106196986976); // L4  glVertex2f(1.9582984279538,-1.2914791886911);//M4  glVertex2f(2.1376121103406,-1.2219178463859);//N4  glEnd();  glBegin(GL\_POLYGON);  glColor3ub(225, 225, 225);  glVertex2f(2.1654366472627,-0.8169162534089); //I4  glVertex2f(2.2179941058933,-0.9946841281889); // J4  glVertex2f(2.4313154297448,-1.0187010936495); // K4  glVertex2f(2.2674599493103,-1.129169389979); // L4  glVertex2f(2.2952844862324,-1.342490839715);//M4  glVertex2f(2.1376121103406,-1.2219178463859);//N4  glEnd();  glBegin(GL\_POLYGON);  glColor3ub(225, 225, 225);  glVertex2f(1.7032957382742,-1.4290449993901); //I4  glVertex2f(1.6254999706995,-1.6004387998281); // J4  glVertex2f(1.4261483162894,-1.6028699175648); // K4  glVertex2f(1.5647220272818,-1.7134857745851); // L4  glVertex2f(1.5282552612312,-1.9128374289953);//M4  glVertex2f(1.6668289722236,-1.785203747818);//N4  glEnd();  glBegin(GL\_POLYGON);  glColor3ub(225, 225, 225);  glVertex2f(1.7032957382742,-1.4290449993901); //I4  glVertex2f(1.767720358297,-1.5955765643547); // J4  glVertex2f(1.9609942183654,-1.6113788296433); // K4  glVertex2f(1.7896004179274,-1.7171324511902); // L4  glVertex2f(1.801756006611,-1.9176996644687);//M4  glVertex2f(1.6668289722236,-1.785203747818);//N4  glEnd();  glBegin(GL\_POLYGON);  glColor3ub(225, 225, 225);  glVertex2f(1.2112207179509,-2.0456557189697); //I4  glVertex2f(1.124866705133,-2.2130496515091); // J4  glVertex2f(0.9455160631265,-2.2210207911538);  glVertex2f(1.0531264483304,-2.3047177574235); // K4  glVertex2f(1,-2.5);//M4  glVertex2f(1.1726935430013,-2.385757677145);//N4  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(1.2112207179509,-2.0456557189697); //I4  glVertex2f(1.2590475558193,-2.2183637446056); // J4  glVertex2f(1.4583260469376,-2.2542338730069);  glVertex2f(1.2842894980276,-2.3366023160024); // K4  glVertex2f(1.3,-2.5);//M4  glVertex2f(1.1726935430013,-2.385757677145);//N4  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(3.1355077739732,-0.8436347325283);  glVertex2f(3.0563052734464,-1.0034232887302);  glVertex2f(2.883466457147,-0.9981323045578);  glVertex2f(3.0130955693716,-1.1171794484375);  glVertex2f(2.9513666510201,-1.2996364411484);  glVertex2f(3.1197970835156,-1.196544211024);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(3.1355077739732,-0.8436347325283);  glVertex2f(3.2,-1);  glVertex2f(3.4,-1);  glVertex2f(3.2278799700847,-1.12562874787);  glVertex2f(3.2548139475999,-1.3303332995335);  glVertex2f(3.1197970835156,-1.196544211024);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(2.6529865882805,-1.4477329332465);  glVertex2f(2.5764820372887,-1.6024421363633);  glVertex2f(2.3605691933784,-1.6126427431622);  glVertex2f(2.4946010204999,-1.6917996193411);  glVertex2f(2.4489744523023,-1.8880591267328);  glVertex2f(2.6155843633512,-1.7945535644095);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(2.6529865882805,-1.4477329332465);  glVertex2f(2.7090899256745,-1.6126427431622);  glVertex2f(2.9182023650522,-1.6177430465617);  glVertex2f(2.7651932630686,-1.7129487100182);  glVertex2f(2.7634931619354,-1.9271614527953);  glVertex2f(2.6155843633512,-1.7945535644095);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(2.1613879056263,-2.0351372847064);  glVertex2f(2.0503708254532,-2.2209209698939);  glVertex2f(1.8623214855683,-2.2254522792887);  glVertex2f(2.0027920768076,-2.3342037047643);  glVertex2f(1.9506820187672,-2.5335813181363);  glVertex2f(2.1138091569807,-2.4316268567529);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(2.1613879056263,-2.0351372847064);  glVertex2f(2.2406858200356,-2.2209209698939);  glVertex2f(2.4196725411309,-2.2322492433809);  glVertex2f(2.2565454029174,-2.3274067406721);  glVertex2f(2.2769362951941,-2.5449095916234);  glVertex2f(2.1138091569807,-2.4316268567529);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(1.7100480142479,-2.6343396619266);  glVertex2f(1.6,-2.8);  glVertex2f(1.4184280179924,-2.8430218610819);  glVertex2f(1.557549484096,-2.9473629606596);  glVertex2f(1.506716640712,-3.1506943341956);  glVertex2f(1.6993463630092,-3.0276253449501);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(1.7100480142479,-2.6343396619266);  glVertex2f(1.8,-2.8);  glVertex2f(1.4184280179924,-2.8430218610819);  glVertex2f(1.9909663592647,-2.8296447970335);  glVertex2f(1.8304415906837,-2.9420121350402);  glVertex2f(1.8224153522546,-3.1480189213859);  glVertex2f(1.6993463630092,-3.0276253449501);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(1.2310572963013,-3.2338814089441);  glVertex2f(1.1360050562368,-3.4239858890731);  glVertex2f(0.943690058897,-3.4328279579163);  glVertex2f(1.0763210915451,-3.5588274389321);  glVertex2f(1.0166371268534,-3.7290372641639);  glVertex2f(1.189057469296,-3.6361955413102);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(1.2310572963013,-3.2338814089441);  glVertex2f(1.2774781577281,-3.4129333030191);  glVertex2f(1.4675826378571,-3.4659857160784);  glVertex2f(1.2951622954145,-3.5521958872997);  glVertex2f(1.3548462601062,-3.7179846781098);  glVertex2f(1.189057469296,-3.6361955413102);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(3.576416920591,-1.4164275328994);  glVertex2f(3.5154759506605,-1.5907093550891);  glVertex2f(3.3043936036694,-1.6078241399803);  glVertex2f(3.4770040243982,-1.7024576201908);  glVertex2f(3.36144288664,-1.8930705548331);  glVertex2f(3.566820305334,-1.778971988892);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(3.576416920591,-1.4164275328994);  glVertex2f(3.6860963797511,-1.5903350718705);  glVertex2f(3.8269786376825,-1.6011721686345);  glVertex2f(3.7124556206444,-1.7373393381532);  glVertex2f(3.7322632259486,-1.9273001246154);  glVertex2f(3.566820305334,-1.778971988892);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(3.1089821044806,-2.0584063144305);  glVertex2f(3.0557408074808,-2.1956218222074);  glVertex2f(2.8604353873053,-2.2126766906083);  glVertex2f(3.0089920458468,-2.2983824551515);  glVertex2f(2.9174418837928,-2.4899503008253);  glVertex2f(3.1004115280263,-2.4240842431482);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(3.1089821044806,-2.0584063144305);  glVertex2f(3.1718329984789,-2.1955355376996);  glVertex2f(3.3575288216559,-2.2469589964255);  glVertex2f(3.2032584454781,-2.3326647609688);  glVertex2f(3.2460495828122,-2.5088629741502);  glVertex2f(3.1004115280263,-2.4240842431482);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(2.6510988377487,-2.6695383227535);  glVertex2f(2.571744117424,-2.8197454719395);  glVertex2f(2.3846937052302,-2.848086443484);  glVertex2f(2.515062174335,-2.904768386573);  glVertex2f(2.4640484255548,-3.0918187987669);  glVertex2f(2.6312601576675,-3.0152981755967);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(2.6510988377487,-2.6695383227535);  glVertex2f(2.7106148779922,-2.8367500548662);  glVertex2f(2.8863289015683,-2.8622569292563);  glVertex2f(2.7672968210813,-2.9642844268166);  glVertex2f(2.7332876552278,-3.1456666447015);  glVertex2f(2.7332876552278,-3.1456666447015);  glVertex2f(2.6312601576675,-3.0152981755967);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(2.17288011876,-3.2834740727967);  glVertex2f(2.064440726777,-3.4432468459191);  glVertex2f(1.857551634502,-3.4432468459191);  glVertex2f(2.0020905893791,-3.567947120715);  glVertex2f(1.94540864629,-3.7549975329088);  glVertex2f(2.1409613499472,-3.6614723268119);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(2.17288011876,-3.2834740727967);  glVertex2f(2.2231501674264,-3.448915040228);  glVertex2f(2.4187028710836,-3.4659196231547);  glVertex2f(2.2911684991332,-3.5707812178694);  glVertex2f(2.3010654574145,-3.7491269356637);  glVertex2f(2.1409613499472,-3.6614723268119);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(3.5934281694324,-2.6735360630713);  glVertex2f(3.5151460630601,-2.8252076441676);  glVertex2f(3.3463502711948,-2.8398855391124);  glVertex2f(3.4686660624015,-2.9303992246054);  glVertex2f(3.4124007984464,-3.1285508063603);  glVertex2f(3.5640723795427,-3.0453760683397);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(3.5934281694324,-2.6735360630713);  glVertex2f(3.6668176441564,-2.8105297492228);  glVertex2f(3.8380597518458,-2.8349929074642);  glVertex2f(3.7255292239356,-2.9573086986709);  glVertex2f(3.7255292239356,-3.1627992278982);  glVertex2f(3.5640723795427,-3.0453760683397);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(3.1115039520779,-3.2728834399842);  glVertex2f(3.0527923722987,-3.4343402843771);  glVertex2f(2.8693186854886,-3.4367866002012);  glVertex2f(2.9940807925194,-3.5321929173425);  glVertex2f(2.9647250026298,-3.7278981832732);  glVertex2f(3.1052044638866,-3.6203858912251);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(225, 225, 225);  glVertex2f(3.1115039520779,-3.2728834399842);  glVertex2f(3.1897860584502,-3.4294476527288);  glVertex2f(3.3585818503155,-3.4270013369047);  glVertex2f(3.2436050065811,-3.5468708122873);  glVertex2f(3.2484976382294,-3.7205592358008);  glVertex2f(3.1052044638866,-3.6203858912251);  glEnd();  }  void half\_star\_problem()  {  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(3.1115039520779,-3.2728834399842);  glVertex2f(3.0527923722987,-3.4343402843771);  glVertex2f(2.8693186854886,-3.4367866002012);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(3.1115039520779,-3.2728834399842);  glVertex2f(3.1897860584502,-3.4294476527288);  glVertex2f(3.3585818503155,-3.4270013369047);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(3.5934281694324,-2.6735360630713);  glVertex2f(3.5151460630601,-2.8252076441676);  glVertex2f(3.3463502711948,-2.8398855391124);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(3.5934281694324,-2.6735360630713);  glVertex2f(3.6668176441564,-2.8105297492228);  glVertex2f(3.8380597518458,-2.8349929074642);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(2.17288011876,-3.2834740727967);  glVertex2f(2.064440726777,-3.4432468459191);  glVertex2f(1.857551634502,-3.4432468459191);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(2.17288011876,-3.2834740727967);  glVertex2f(2.2231501674264,-3.448915040228);  glVertex2f(2.4187028710836,-3.4659196231547);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(2.6510988377487,-2.6695383227535);  glVertex2f(2.7106148779922,-2.8367500548662);  glVertex2f(2.8863289015683,-2.8622569292563);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(2.6510988377487,-2.6695383227535);  glVertex2f(2.571744117424,-2.8197454719395);  glVertex2f(2.3846937052302,-2.848086443484);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(3.1089821044806,-2.0584063144305);  glVertex2f(3.1718329984789,-2.1955355376996);  glVertex2f(3.3575288216559,-2.2469589964255);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(3.576416920591,-1.4164275328994);  glVertex2f(3.5154759506605,-1.5907093550891);  glVertex2f(3.3043936036694,-1.6078241399803);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(3.1089821044806,-2.0584063144305);  glVertex2f(3.0557408074808,-2.1956218222074);  glVertex2f(2.8604353873053,-2.2126766906083);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(3.576416920591,-1.4164275328994);  glVertex2f(3.6860963797511,-1.5903350718705);  glVertex2f(3.8269786376825,-1.6011721686345);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(1.2310572963013,-3.2338814089441);  glVertex2f(1.1360050562368,-3.4239858890731);  glVertex2f(0.943690058897,-3.4328279579163);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(1.2310572963013,-3.2338814089441);  glVertex2f(1.2774781577281,-3.4129333030191);  glVertex2f(1.4675826378571,-3.4659857160784);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(1.7100480142479,-2.6343396619266);  glVertex2f(1.6,-2.8);  glVertex2f(1.4184280179924,-2.8430218610819);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(2.1613879056263,-2.0351372847064);  glVertex2f(2.0503708254532,-2.2209209698939);  glVertex2f(1.8623214855683,-2.2254522792887);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(2.1613879056263,-2.0351372847064);  glVertex2f(2.2406858200356,-2.2209209698939);  glVertex2f(2.4196725411309,-2.2322492433809);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(2.6529865882805,-1.4477329332465);  glVertex2f(2.7090899256745,-1.6126427431622);  glVertex2f(2.9182023650522,-1.6177430465617);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(2.6529865882805,-1.4477329332465);  glVertex2f(2.5764820372887,-1.6024421363633);  glVertex2f(2.3605691933784,-1.6126427431622);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(3.1355077739732,-0.8436347325283);  glVertex2f(3.2,-1);  glVertex2f(3.4,-1);  glEnd();  glBegin(GL\_POLYGON);//Deep blue  glColor3ub(0, 0, 255);  glVertex2f(2.1654366472627,-0.8169162534089);//N4  glVertex2f(2.0825038492255,-0.9672388211276); // o4  glVertex2f(1.8794622400079,-0.9807718597279);  glEnd();  glBegin(GL\_POLYGON);//Deep blue  glColor3ub(0, 0, 255);  glVertex2f(2.1654366472627,-0.8169162534089);//N4  glVertex2f(2.2179941058933,-0.9946841281889); // o4  glVertex2f(2.4313154297448,-1.0187010936495);  glEnd();  glBegin(GL\_POLYGON);//Deep blue  glColor3ub(0, 0, 255);  glVertex2f(1.1940952636063,-0.8477614634604);//N4  glVertex2f(1.1317361018572,-0.9924701349374); // o4  glVertex2f(0.9648108513058,-0.9955895713909);  glEnd();  glBegin(GL\_POLYGON);//Deep blue  glColor3ub(0, 0, 255);  glVertex2f(1.7032957382742,-1.4290449993901); //I4  glVertex2f(1.6254999706995,-1.6004387998281); // J4  glVertex2f(1.4261483162894,-1.6028699175648); // K4  glEnd();  glBegin(GL\_POLYGON);//Deep blue  glColor3ub(0, 0, 255);  glVertex2f(1.7032957382742,-1.4290449993901); //I4  glVertex2f(1.767720358297,-1.5955765643547); // J4  glVertex2f(1.9609942183654,-1.6113788296433); // K4  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(1.2112207179509,-2.0456557189697); //I4  glVertex2f(1.2590475558193,-2.2183637446056); // J4  glVertex2f(1.4583260469376,-2.2542338730069);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(1.2112207179509,-2.0456557189697); //I4  glVertex2f(1.124866705133,-2.2130496515091); // J4  glVertex2f(0.9455160631265,-2.2210207911538);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(1.7100480142479,-2.6343396619266);  glVertex2f(1.8,-2.8);  glVertex2f(1.9909663592647,-2.8296447970335);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(3.1355077739732,-0.8436347325283);  glVertex2f(3.0563052734464,-1.0034232887302);  glVertex2f(2.883466457147,-0.9981323045578);  glEnd();  glBegin(GL\_POLYGON);//Light blue  glColor3ub(0, 0, 255);  glVertex2f(1.7100480142479,-2.6343396619266);  glVertex2f(1.6,-2.8);  glVertex2f(1.4184280179924,-2.8430218610819);  glEnd();  }  void star()// REd yellow greens star  {  glColor3ub(0, 0, 0 );  glBegin(GL\_POLYGON);  glVertex2f(-5.4040569538472f,-3.5406964237433f); //CQ  glVertex2f(-6.3870747305362f,-3.3956130103218f); // R  glVertex2f(-5.7366352882298f,-3.8400169246876f); //S  glVertex2f(-5.9945260511766f,-4.5680250660093f); // t  glVertex2f(-5.3985139816075f,-4.0506498697966f); //U  glVertex2f(-4.7697741715745,-4.5680250660093); //V  glVertex2f(-5.0326778137867,-3.8677317858861); // w  glVertex2f(-4.424331333738,-3.3956130103218); //Z  glVertex2f(-5.2045099532177,-3.3910361732711); //A1  glEnd();  glColor3ub(0, 0, 0);  glBegin(GL\_POLYGON);  glVertex2f(-5.3821501113755f, -2.6890253874744f); // P  glVertex2f(-5.6435994648119,-3.3714403891936); // CQ  glVertex2f(-5.15658314935,-3.3898183633619); // R  glVertex2f(-5.6435994648119,-3.3914403891936); // CQ  glEnd();  glColor3ub(0, 0, 0); // Set color to yellow  glBegin(GL\_POLYGON);  glVertex2f(-6.3870747305362,-3.3956130103218); // P  glVertex2f(-4.424331333738,-3.3956130103218); // CQ  glVertex2f(-5.0326778137867,-3.8677317858861); // R  glVertex2f(-5.7366352882298,-3.8400169246876); // CQ  glEnd();  }  void circle(float radius, float xc, float yc, float r, float g, float b)  {  glColor3f(r / 255.0f, g / 255.0f, b / 255.0f); // Set the color  glBegin(GL\_POLYGON); // Draw a circle  for (int i = 0; i < 200; i++)  {  float pi = 3.1416;  float angle = (i \* 2 \* pi) / 200;  float x = radius \* cos(angle);  float y = radius \* sin(angle);  glVertex2f(x + xc, y + yc);  }  glEnd();  }  void circleWithBorder(float radius, float xc, float yc, float r, float g, float b, float borderThickness, float borderR, float borderG, float borderB)  {  circle(radius + borderThickness, xc, yc, borderR, borderG, borderB);  circle(radius, xc, yc, r, g, b);  }  void display()  {  glClear(GL\_COLOR\_BUFFER\_BIT);  drawPolygons();  circle(1.875, -6, 3, 255, 0, 0);  circleWithBorder(0.361894, 5.809308, 2.9660594988, 255, 255, 0, 0.05, 255, 165, 0);  half\_star\_problem();  star();  glFlush();  }  int main(int argc, char \*argv[])  {  glutInit(&argc, argv);  glutInitWindowPosition(5, 200);  glutInitWindowSize(320, 320);  glutCreateWindow("Shraboni Biswas Naboni-26");  glClearColor(1.0, 1.0, 1.0, 1.0);  glutDisplayFunc(display);  gluOrtho2D(-12, 12, -12, 12);  glutMainLoop();  return 0;  } |
| Output Screenshot:  Screenshot (1585) |

|  |
| --- |
| Question-2: Create the figure given below |
| Graph:  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generatedA screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A computer screen shot of a drawing  Description automatically generated  A screenshot of a computer  Description automatically generatedA screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A computer screen shot of a drawing  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A computer screen shot of a drawing  Description automatically generated  A screenshot of a computer  Description automatically generated  A computer screen shot of a drawing  Description automatically generated  A computer screen shot of a drawing  Description automatically generated  A computer screen shot of a drawing  Description automatically generated  A screenshot of a computer  Description automatically generated  A computer screen shot of a drawing  Description automatically generated  A screenshot of a computer  Description automatically generated  A computer screen shot of a drawing  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated    A computer screen shot of a drawing  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated  A screenshot of a computer  Description automatically generated |
| Code:  #include <cmath>  #include <windows.h>  #ifdef \_\_APPLE\_\_  #else  #include <GL/glut.h>  #endif  #include <stdlib.h>  static int slices = 16;  static int stacks = 16;  void line()  {  glColor3ub(0, 0, 0);  glBegin(GL\_LINES);  glVertex2f(9.414227846379, 18.234491361436);  glVertex2f(11.0557233228221,19.7713562186282);  glVertex2f(11.0557233228221,19.7713562186282);  glVertex2f(11.4789865221783,19.6020509388857);  glVertex2f(11.4789865221783,19.6020509388857);  glVertex2f(13.2284744128506,20.3215983777912);  glVertex2f(13.2284744128506,20.3215983777912);  glVertex2f(14.6957868372854,19.5879421655738);  glVertex2f(14.6957868372854,19.5879421655738);  glVertex2f(15.4294430495028,19.6725948054451);  glVertex2f(15.4294430495028,19.6725948054451);  glVertex2f(16.0574,19.058);  glVertex2f(16.0574,19.058);  glVertex2f(17.080169526992,20.3074896044794);  glVertex2f(17.080169526992,20.3074896044794);  glVertex2f(17.8390,19.80);  glEnd();  glColor3ub(0, 0, 0);  glBegin(GL\_LINES);  glVertex2f(9.93, 18.722);  glVertex2f(10.180979377486,17.8948893681491);  glVertex2f(10.180979377486,17.8948893681491);  glVertex2f(9.8846951379366,16.6392085433924);  glVertex2f(11.0557233228221,19.7713562186282);  glVertex2f(11.0294391056242,18.8203545475033);  glVertex2f(11.0294391056242,18.8203545475033);  glVertex2f(11.4146008538179,18.6577306982659);  glVertex2f(13.2284744128506,20.3215983777912);  glVertex2f(13.2291406453084,19.5650005940111);  glVertex2f(13.2291406453084,19.5650005940111);  glVertex2f(13.8967543421775,18.8117953975434);  glVertex2f(13.8967543421775,18.8117953975434);  glVertex2f(13.5971840935824,18.4351927993095);  glVertex2f(15.4294430495028,19.6725948054451);  glVertex2f(15.1378310863573,19.0000966966603);  glVertex2f(15.1378310863573,19.0000966966603);  glVertex2f(15.4459604849123,18.4009561994701);  glVertex2f(16.0574,19.058);  glVertex2f(16.6851238742595,18.4451315273121);  glVertex2f(17.080169526992,20.3074896044794);  glVertex2f(17.5457590462838,19.3057666993364);  glVertex2f(17.5457590462838,19.3057666993364);  glVertex2f(17.3200186732938,18.7555245401733);  glVertex2f(17.3200186732938,18.7555245401733);  glVertex2f(17.5739765929075,17.7679104083422);  glVertex2f(17.5739765929075,17.7679104083422);  glVertex2f(16.5722536877645,17.3164296623623);  glVertex2f(18.345,18.922);  glVertex2f(18.0113485655756,18.1629560610747);  glVertex2f(13.5001223958086,21.3903135077104);  glVertex2f(12.045446219567,20.6094483741435);  glVertex2f(11.8754191340323,20.496096983787);  glVertex2f(11.6865001501048,20.4079347912875);  glEnd();  }  void tree()  {  //1st tree  glColor3ub(0, 0, 0);  glBegin(GL\_LINES);  glVertex2f(10.6391666779906,17.2037625270122);  glVertex2f(10.6450241046613,13.5391335212642);  glVertex2f(10.3594787499589,16.8738742016415);  glVertex2f(10.6391666779906,17.2037625270122);  glVertex2f(10.6391666779906,17.2037625270122);  glVertex2f(10.9116831206881,16.8810456869757);  glVertex2f(10.43696,16.965);  glVertex2f(10.4368064127602,16.7189870239212);  glVertex2f(10.6436428542921,16.6581438607477);  glVertex2f(10.2,16.2);  glVertex2f(10.6436428542921,16.6581438607477);  glVertex2f(11.0745658696965,16.1997183950496);  glVertex2f(10.299,16.294);  glVertex2f(10.3029583959119,16.1675397367087);  glVertex2f(10.43,16.428);  glVertex2f(10.4263575657306,16.2273517763098);  glVertex2f(10.80,16.491);  glVertex2f(10.8,16.2);  glVertex2f(10.9686194240992,16.300868);  glVertex2f(10.9686194240992,16.2796773599695);  glVertex2f(10.7873580430926,17.022301996485);  glVertex2f(10.788894743487,16.7418541745019);  glVertex2f(10.9794,16.3008);  glVertex2f(10.9794,16.0796773599695);  glVertex2f(10.0887489938235,15.504232525516);  glVertex2f(10.6371754284747,16.1345136519061);  glVertex2f(10.6371754284747,16.1345136519061);  glVertex2f(11.2060655360606,15.5451598713855);  glVertex2f(10.4775587795837,15.928519061);  glVertex2f(10.4775587795837,15.6802201127548);  glVertex2f(10.3097566615188,15.758519061);  glVertex2f(10.3097566615188,15.3937286916684);  glVertex2f(10.813,15.934);  glVertex2f(10.8131630157135,15.6556637052331);  glVertex2f(11.009,15.7576);  glVertex2f(11.009,15.5533453405594);  glVertex2f(9.897,14.6029);  glVertex2f(10.6566,15.42077);  glVertex2f(10.6566,15.42077);  glVertex2f(11.3963960773042,14.6330073006551);  glVertex2f(10.07694669727828,14.7893867265216);  glVertex2f(10.0769949714769,14.3937204502281);  glVertex2f(10.1999618251686,14.932115863689);  glVertex2f(10.199961820376,14.7027992986964);  glVertex2f(10.4956103421,15.2512541412884);  glVertex2f(10.4957469597244,14.8822644365167);  glVertex2f(11.004231516882,15.0916404306404);  glVertex2f(11.004290946013,14.7426804404342);  glVertex2f(11.2534886527435,14.8091490099973);  glVertex2f(11.2568715103527,14.6030964443518);  ///////////////////2nd tree  glVertex2f(12,15.6);  glVertex2f(12.3037527148978,15.9482981067859);  glVertex2f(12.3037527148978,15.9482981067859);  glVertex2f(12.6,15.6);  glVertex2f(12.1107131999943,15.7402160384049);  glVertex2f(12.1150029669922,15.4549749020325);  glVertex2f(12.4667638608164,15.754704853409);  glVertex2f(12.4667638608164,15.4871481545164);  glVertex2f(11.8563939084442,14.9019492824716);  glVertex2f(12.3054460710431,15.4191978589065);  glVertex2f(12.3054460710431,15.4191978589065);  glVertex2f(12.7589382758865,14.936774145524);  glVertex2f(11.7519193192868,14.2402768844754);  glVertex2f(12.3149212719679,14.7510057721298);  glVertex2f(12.3149212719679,14.7510057721298);  glVertex2f(12.8547066492807,14.2809058913699);  glVertex2f(11.5814861626628,13.3423750333873);  glVertex2f(12.3195555978582,14.1845985143508);  glVertex2f(12.3195555978582,14.1845985143508);  glVertex2f(13.0698585505874,13.3600237178291);  glVertex2f(12.3037527148978,15.9482981067859);  glVertex2f(12.3037527148978,12.5733641370917);  glVertex2f(11.9689057686006,15.0201014771037);  glVertex2f(11.9689057686006,14.796918920036);  glVertex2f(12.1164462256938,15.1860758372434);  glVertex2f(12.1201987287872,14.9657041608061);  glVertex2f(11.9786142290559,14.4552004868426);  glVertex2f(11.9786142290559,14.1331848957326);  glVertex2f(12.137039011848,14.604289371738);  glVertex2f(12.137039011848,14.4207603166704);  glVertex2f(12.4807698849894,14.6010370027213);  glVertex2f(12.4789077597574,14.3791667188525);  glVertex2f(12.6576717820274,14.4685487299874);  glVertex2f(12.6558096567954,14.2748877058617);  glVertex2f(12.8046063233742,14.3146756014462);  glVertex2f(12.8,14.1);  glEnd();  }  void star()  {  glColor3ub(0, 0, 0);  glBegin(GL\_LINES);  glVertex2f(14.4501953926324,21.0092842973671);  glVertex2f(14.4442784135492,20.9146126320373);  glVertex2f(14.4442784135492,20.9146126320373);  glVertex2f(14.3916137460585,20.8559219814221);  glVertex2f(14.3916137460585,20.8559219814221);  glVertex2f(14.3312141374525,20.8003933089939);  glVertex2f(14.3312141374525,20.8003933089939);  glVertex2f(14.2358324046333,20.7813152644399);  glVertex2f(14.2358324046333,20.7813152644399);  glVertex2f(14.3260600365032,20.7467600011706);  glVertex2f(14.3260600365032,20.7467600011706);  glVertex2f(14.3855718788003,20.7166841238806);  glVertex2f(14.3855718788003,20.7166841238806);  glVertex2f(14.4566021421872,20.5605455268861);  glVertex2f(14.45,20.65);  glVertex2f(14.4566021421872,20.5605455268861);  glVertex2f(14.45,20.65);  glVertex2f(14.5209406607634,20.7125800341852);  glVertex2f(14.5209406607634,20.7125800341852);  glVertex2f(14.55,20.75);  glVertex2f(14.55,20.75);  glVertex2f(14.6704800914729,20.7796810607856);  glVertex2f(14.4501953926324,21.0092842973671);  glVertex2f(14.447324386311,20.9207017783857);  glVertex2f(14.447324386311,20.9207017783857);  glVertex2f(14.4983054144536,20.8641698541342);  glVertex2f(14.4983054144536,20.8641698541342);  glVertex2f(14.557708282864,20.8049920189022);  glVertex2f(14.557708282864,20.8049920189022);  glVertex2f(14.6704800914729,20.7796810607856);  //glVertex2fK\_{14}=(14.6704800914729,20.7796810607856);  glVertex2f(14.3201286595235,20.7770936997547);  glVertex2f(14.328324046333,20.7813152644399);  glVertex2f(11.7247973255023,16.1358976066613);  glVertex2f(12.3938926067852,16.2845854469463);  glEnd();  }  void ljk()  {  glColor3ub(0, 0, 0);  glBegin(GL\_LINES);  glVertex2f(12.3938926067852,16.2845854469463);  glVertex2f(12.854824911669,16.3663637591031);  glVertex2f(12.3938926067852,16.2845854469463);  glVertex2f(12.854824911669,16.3663637591031);  glVertex2f(12.854824911669,16.3663637591031);  glVertex2f(13.3047809066525,16.4254820650133);  glVertex2f(13.3047809066525,16.4254820650133);  glVertex2f(13.8208487493603,16.4636197275242);  glVertex2f(13.8208487493603,16.4636197275242);  glVertex2f(14.5866415779954,16.4706132693382);  glVertex2f(14.5866415779954,16.4706132693382);  glVertex2f(15.0132476286505,16.4321487893611);  glVertex2f(15.0132476286505,16.4321487893611);  glVertex2f(15.6801909470759,16.3062278312411);  glVertex2f(15.6801909470759,16.3062278312411);  glVertex2f(15.9746567999079,16.2283805368143);  glVertex2f(15.9746567999079,16.2283805368143);  glVertex2f(15.9746567999079,16.2283805368143);  glVertex2f(15.9746567999079,16.2283805368143);  glVertex2f(16.1438900486619,16.1505332423875);  glVertex2f(13.2590836953002,17.9524315924857);  glVertex2f(12.3714281711569,16.2783343548603);  glVertex2f(13.2590836953002,17.9524315924857);  glVertex2f(12.7353871569564,16.3707078074159);  glVertex2f(13.2590836953002,17.9524315924857);  glVertex2f(12.7353871569564,16.3707078074159);  glVertex2f(13.2590836953002,17.9524315924857);  glVertex2f(13.3082052753227,17.3972487214796);  glVertex2f(13.3082052753227,17.3972487214796);  glVertex2f(13.3628873916328,17.0437391750774);  glVertex2f(13.3628873916328,17.0437391750774);  glVertex2f(13.4436754113245,16.7740390759228);  glVertex2f(13.4436754113245,16.7740390759228);  glVertex2f(13.5968070620012,16.4680694237227);  glVertex2f(13.2590836953002,17.9524315924857);  glVertex2f(13.358009145453,17.517601007564);  glVertex2f(13.358009145453,17.517601007564);  glVertex2f(13.4376084509691,17.2493218667506);  glVertex2f(13.4376084509691,17.2493218667506);  glVertex2f(13.5083633892056,17.0606420314533);  glVertex2f(13.5083633892056,17.0606420314533);  glVertex2f(13.5820664498686,16.8867028082886);  glVertex2f(13.5820664498686,16.8867028082886);  glVertex2f(13.6881988572234,16.7068673402708);  glVertex2f(13.6881988572234,16.7068673402708);  glVertex2f(13.85,16.47);  glVertex2f(13.2590836953002,17.9524315924857);  glVertex2f(13.8614457225566,17.8265211852696);  glVertex2f(13.8614457225566,17.8265211852696);  glVertex2f(14.2878320876055,17.8463531092254);  glVertex2f(14.2878320876055,17.8463531092254);  glVertex2f(14.6844705667207,17.9752606149378);  glVertex2f(14.6844705667207,17.9752606149378);  glVertex2f(15.3699182611655,16.376200454849);  glVertex2f(12.4305847354786,18.6129560583694);  glVertex2f(12.497908430658,18.334043606912);  glVertex2f(12.497908430658,18.334043606912);  glVertex2f(12.4113493939988,18.122454850634);  glVertex2f(12.4113493939988,18.122454850634);  glVertex2f(12.2189959792005,17.8820130821362);  glVertex2f(12.2189959792005,17.8820130821362);  glVertex2f(12.1790944243559,17.6931721490408);  glVertex2f(12.1790944243559,17.6931721490408);  glVertex2f(12.2382313206803,17.5165415940195);  glVertex2f(12.2382313206803,17.5165415940195);  glVertex2f(12.4017317232589,17.2087761303424);  glVertex2f(12.6317792685979,18.2984336882781);  glVertex2f(12.6422835285875,18.1688811484069);  glVertex2f(12.6422835285875,18.1688811484069);  glVertex2f(12.6107707486188,18.0813456484939);  glVertex2f(12.6107707486188,18.0813456484939);  glVertex2f(12.484719628744,17.927283168647);  glVertex2f(12.484719628744,17.927283168647);  glVertex2f(12.4445255976868,17.8774465595024);  glVertex2f(12.4445255976868,17.8774465595024);  glVertex2f(12.4124079615265,17.8299433046489);  glVertex2f(12.4124079615265,17.8299433046489);  glVertex2f(12.3992945563081,17.7687474136298);  glVertex2f(12.3992945563081,17.7687474136298);  glVertex2f(12.4,17.7);  glVertex2f(12.4,17.7);  glVertex2f(12.4267455964475,17.5404277362575);  glVertex2f(12.4267455964475,17.5404277362575);  glVertex2f(12.4720183730874,17.4281435610285);  glVertex2f(12.4792540163509,15.2078952450275);  glVertex2f(12.4757459503607,14.9132177018486);  glVertex2f(12.651149249872,15.0342459785114);  glVertex2f(12.651149249872,14.8062216891467);  glVertex2f(11.7350184914987,13.4935008280456);  glVertex2f(11.7350184914987,13.1330096522763);  glVertex2f(11.8996772403754,13.6912450404091);  glVertex2f(11.8996772403754,13.4248021447394);  glVertex2f(12.1547422083084,13.9994846186271);  glVertex2f(12.1547422083084,13.6243214446723);  glVertex2f(12.6664676875453,13.79944302958314);  glVertex2f(12.6664676875453,13.4894599221297);  glVertex2f(12.9211200056006,13.5136349476143);  glVertex2f(12.9211200056006,13.3167803064058);  glVertex2f(13.8421731150226,15.6033619666197);  glVertex2f(13.5560334931753,15.282947354705);  glVertex2f(13.8421731150226,15.6033619666197);  glVertex2f(14.1390035852614,15.282947354705);  glVertex2f(13.8317018711332,15.1001304444288);  glVertex2f(13.4,14.6);  glVertex2f(13.8317018711332,15.1001304444288);  glVertex2f(14.2912706004937,14.6145804060383);  glVertex2f(13.3050049213495,13.9433828297005);  glVertex2f(13.8497,14.5286);  glVertex2f(13.8497,14.5286);  glVertex2f(14.4113893213661,13.9418346654726);  glVertex2f(13.8655718425373,15.6033619666197);  glVertex2f(13.8655718425373,12.2412185431409);  glVertex2f(13.1471891034158,13.0407244882427);  glVertex2f(13.85449,13.85449);  glVertex2f(14.6108380335301,13.047553551449);  glVertex2f(13.85449,13.85449);  glVertex2f(14.6108380335301,13.047553551449);  glVertex2f(14.6108380335301,13.047553551449);  glVertex2f(15.5,15.9138444093351);  glVertex2f(15.5,12.5);  glVertex2f(17.1180780270358,16.9543538698958);  glVertex2f(17.1180780270358,13.4390563939294);  glVertex2f(15.1857523839535,15.5788755102127);  glVertex2f(15.4813866338912,15.8982806407919);  glVertex2f(15.4813866338912,15.8982806407919);  glVertex2f(15.7591560699934,15.5883882086779);  glVertex2f(15.0409775817256,14.8904191748706);  glVertex2f(15.4804440813543,15.3746856574711);  glVertex2f(15.4804440813543,15.3746856574711);  glVertex2f(15.9433778979107,14.9143212195047);  glVertex2f(14.9332321537616,14.2179328655839);  glVertex2f(15.4707375551396,14.8064391646765);  glVertex2f(15.4707375551396,14.8064391646765);  glVertex2f(16.0537942617192,14.2631363244548);  glVertex2f(14.7523146284673,13.3585621228454);  glVertex2f(15.4799932868634,14.1393720364151);  glVertex2f(15.4799932868634,14.1393720364151);  glVertex2f(16.2600714500028,13.3430091065316);  glVertex2f(17.1180780270358,16.9543538698958);  glVertex2f(17.3892091536148,16.5969485597101);  glVertex2f(17.1180780270358,16.9543538698958);  glVertex2f(16.8290983977094,16.6064442495385);  glVertex2f(12.3714281711569,16.2783343548603);  glVertex2f(11.7247973255023,16.1358976066613);  glVertex2f(16.6784875422604,15.9262725623121);  glVertex2f(17.1141346599445,16.4099297915331);  glVertex2f(17.1141346599445,16.4099297915331);  glVertex2f(17.5710618640722,15.9270408144437);  glVertex2f(16.5602915722725,15.2450638217278);  glVertex2f(17.1152549749082,15.8370689361604);  glVertex2f(17.1152549749082,15.8370689361604);  glVertex2f(17.6853313960306,15.2684353253311);  glVertex2f(16.4032809244053,14.3555791513793);  glVertex2f(17.124769850006,15.1818101886745);  glVertex2f(17.124769850006,15.1818101886745);  glVertex2f(17.8730932628788,14.3866215607573);  glVertex2f(13.650370485135,15.3705790849082);  glVertex2f(13.650370485135,15.1391754968361);  glVertex2f(14,15.45);  glVertex2f(14,15.1697046522198);  glVertex2f(13.5,14.7);  glVertex2f(13.5,14.5);  glVertex2f(13.64,14.86);  glVertex2f(13.64,14.65);  glVertex2f(14.0124800438599,14.8925611060138);  glVertex2f(14.0124800438599,14.6);  glVertex2f(14.1854786181152,14.7191216616619);  glVertex2f(14.1871473815863,14.4855450990219);  glVertex2f(13.4977293792156,14.1289479048254);  glVertex2f(13.4977293792156,13.8256563804857);  glVertex2f(13.67476624189315,14.3346715701016);  glVertex2f(13.6744597405202,14.0907519224425);  glVertex2f(14.0294809811721,14.3417287213203);  glVertex2f(14.0294809811721,14.0747862748291);  glVertex2f(14.1871615290349,14.17299595654);  glVertex2f(14.1871615290349,13.9662649565942);  glVertex2f(14.3428901844114,14.0073466377058);  glVertex2f(14.345796312812,13.770787785897);  glVertex2f(13.2560856597064,13.1522424290793);  glVertex2f(13.2560856597064,12.8216130617874);  glVertex2f(13.4232771936616,13.3419810406073);  glVertex2f(13.4232771936616,13.1158905684297);  glVertex2f(13.6715669833989,13.6337473788577);  glVertex2f(13.6715669833989,13.3219620478923);  glVertex2f(14.2058128244062,13.4666404783745);  glVertex2f(14.2058128244062,13.1636112618872);  glVertex2f(14.4359766873452,13.2216422158831);  glVertex2f(14.4359766873452,13.0047393371086);  glVertex2f(13.743348021829,17.5676815143416);  glVertex2f(13.961264528733,17.5143615179715);  glVertex2f(13.961264528733,17.5143615179715);  glVertex2f(14.1868441542406,17.5174768095813);  glVertex2f(14.1868441542406,17.5174768095813);  glVertex2f(14.3158152099752,17.5401661619791);  glVertex2f(14.3158152099752,17.5401661619791);  glVertex2f(14.4266774059779,17.6112114411918);  glVertex2f(13.9565533425536,17.3551885911857);  glVertex2f(14.0479432863548,17.3333377277174);  glVertex2f(14.0479432863548,17.3333377277174);  glVertex2f(14.1483445953531,17.3252408479595);  glVertex2f(14.1483445953531,17.3252408479595);  glVertex2f(14.2309327688841,17.3322581437497);  glVertex2f(14.2309327688841,17.3322581437497);  glVertex2f(14.3242610132285,17.3615686554753);  glVertex2f(14.3242610132285,17.3615686554753);  glVertex2f(14.3781880147083,17.3933717589122);  glVertex2f(15.1632922706518,14.4531449886471);  glVertex2f(15.1632922706518,14.1234113212111);  glVertex2f(15.3041691935811,14.6144388569284);  glVertex2f(15.3041691935811,14.4);  glVertex2f(15.6577137123935,14.6207221219991);  glVertex2f(15.6577137123935,14.3729966221714);  glVertex2f(15.8223560012465,14.4717908255677);  glVertex2f(15.8223560012465,14.2704164245119);  glVertex2f(16,14.3);  glVertex2f(16,14.0759363213821);  glVertex2f(15.15,15);  glVertex2f(15.15,14.7827775068989);  glVertex2f(15.2773123652483,15.1457885990501);  glVertex2f(15.2773123652483,14.9447875729547);  glVertex2f(15.6485755954412,15.2009745178431);  glVertex2f(15.6485755954412,14.9);  glVertex2f(15.65,14.9);  glVertex2f(15.65,15.0364158536729);  glVertex2f(15.814582000667,15.0364158536729);  glVertex2f(15.814582000667,14.79993351616);  glVertex2f(15.2761571375715,15.6656783106556);  glVertex2f(15.2761571375715,15.4399723705813);  glVertex2f(15.6385698906836,15.710828929987);  glVertex2f(15.6385698906836,15.4650445194085);  glVertex2f(14.8684895895153,13.4690422157154);  glVertex2f(14.8684895895153,13.0861132627583);  glVertex2f(15.0635142163441,13.6812053382279);  glVertex2f(15.0635142163441,13.4110354664654);  glVertex2f(15.3161077300684,13.9410087417338);  glVertex2f(15.3161077300684,13.6018072227707);  glVertex2f(15.8298812587305,13.7682017468307);  glVertex2f(15.8298812587305,13.4718361166111);  glVertex2f(16.0786056234059,13.5147243023989);  glVertex2f(16.0786056234059,13.3037937489608);  glVertex2f(16.9177491864237,16.6830972014035);  glVertex2f(16.9177491864237,16.4662408983843);  glVertex2f(17.2788005783324,16.7338195321992);  glVertex2f(17.2788005783324,16.5);  glVertex2f(16.7929273797541,16.0414209704829);  glVertex2f(16.7929273797541,15.8180860702989);  glVertex2f(16.9183178176888,16.1808034744532);  glVertex2f(16.9183178176888,15.9725369530768);  glVertex2f(17.286985709581,16.215628492283);  glVertex2f(17.2888122545889,15.9300786227187);  glVertex2f(17.4525960008871,16.03942325891);  glVertex2f(17.4525960008871,15.8140089879929);  glVertex2f(17.2909795378214,15.6491854039027);  glVertex2f(17.2909795378214,15.4);  glVertex2f(17.455772093234,15.4868178569946);  glVertex2f(17.455772093234,15.3051599892683);  glVertex2f(17.6157753807016,15.3256115372905);  glVertex2f(17.6157753807016,15.0994414768101);  glVertex2f(16.9525853894241,15.6394240342374);  glVertex2f(16.9525853894241,15.4344352712661);  glVertex2f(16.7980303697235,15.4767345398157);  glVertex2f(16.7980303697235,15.1448479711955);  glVertex2f(16.52396266339,14.4863044512775);  glVertex2f(16.5343605073367,14.1203829686928);  glVertex2f(16.6962714749097,14.679632202634);  glVertex2f(16.6962714749097,14.4275762098717);  glVertex2f(16.9527619569054,14.9808470055829);  glVertex2f(16.9576365966236,14.6332851936765);  glVertex2f(17.4592646647249,14.8159135116962);  glVertex2f(17.4592646647249,14.5077137974072);  glVertex2f(17.7160,14.5534);  glVertex2f(17.7160,14.3320559291596);  glEnd();  }  void square ()  {  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(13.9167017681238,20.5314716540437);  glVertex2f(13.9207275427569,20.2134354580341);  glVertex2f(15.011712468309,20.2536932043644);  glVertex2f(15.0036609190429,20.5636778511079);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(14.2392656965674,21.36804425869);  glVertex2f(14.2329709671367,20.4143927499365);  glVertex2f(13.7388347068253,20.4049506557904);  glVertex2f(13.7640136245482,21.3586021645439);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(13.6276227566775,21.4441659767514);  glVertex2f(15.2555356026399,21.197408661153);  glVertex2f(15.0670404310021,20.9472241606157);  glVertex2f(13.5659334277779,21.0466125238428);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(14.6616272032798,21.06666933765);  glVertex2f(14.9476121295634,21.0618079796456);  glVertex2f(14.9,20.5);  glVertex2f(14.6248091492315,20.5132828283174);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(15.5301542169051,21.3898230424456);  glVertex2f(15.5301542169051,20.7240236787033);  glVertex2f(15.2886084012218,20.705443231343);  glVertex2f(15.2700279538615,21.3867263012189);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(15.5019517614022,21.3279439235249);  glVertex2f(15.8781279972681,21.2620599500117);  glVertex2f(15.8760027077999,21.0707838978766);  glVertex2f(15.5040770508704,21.2301806079892);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(15.8454499088698,21.2834493662592);  glVertex2f(15.6013339491866,20.6834093859704);  glVertex2f(15.9371040412614,20.6711559006084);  glVertex2f(16.021250949668,21.1364004152512);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(15.3368157255517,20.8945419170892);  glVertex2f(16.0911162312704,20.9663800604909);  glVertex2f(16.0947081384405,20.5712702717813);  glVertex2f(15.3942862402731,20.5569026431009);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(15.6,19.8);  glVertex2f(16.257359280796,19.8498020298334);  glVertex2f(16.2497996540518,19.7742057623914);  glVertex2f(15.639989763353,19.6280529786702);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(15.7619737895211,20.1812976844677);  glVertex2f(15.7852793041745,19.7874344868256);  glVertex2f(15.537075573116,19.7711206265683);  glVertex2f(15.6466114919869,20.183628235933);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(16.081924539641,20.1289924061527);  glVertex2f(16.249985520753,20.1305202332537);  glVertex2f(16.169010684399,19.6110590189077);  glVertex2f(15.9,19.6);  glEnd();  glColor3ub(255,255, 255);  glBegin(GL\_POLYGON);  glVertex2f(15.7794147736394,20.237468130325);  glVertex2f(16.2270681142377,20.2069115883046);  glVertex2f(16.1949837451163,20.0724628034151);  glVertex2f(15.4906554515469,20.0801019389202);  glEnd();  }  void circle(float radius, float xc, float yc, float r, float g, float b)  {  glColor3f(r / 255.0f, g / 255.0f, b / 255.0f);  glBegin(GL\_POLYGON);  for (int i = 0; i < 200; i++)  {  float pi = 3.1416;  float angle = (i \* 2 \* pi) / 200;  float x = radius \* cos(angle);  float y = radius \* sin(angle);  glVertex2f(x + xc, y + yc);  }  glEnd();  }  void circleWithBorder(float radius, float xc, float yc, float r, float g, float b, float borderThickness, float borderR, float borderG, float borderB)  {  circle(radius + borderThickness, xc, yc, borderR, borderG, borderB);  circle(radius, xc, yc, r, g, b);  }  void display() {  glClearColor(1.0f, 1.0f, 1.0f, 1.0f);  glClear(GL\_COLOR\_BUFFER\_BIT);  glLineWidth(3);  circleWithBorder(4.75,14, 17, 255, 255, 255, 0.06, 0, 0, 0);  circleWithBorder(sqrt(0.0534077485), 14.209400140944, 20.516627064691, 255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.05317181131), 14.2250898773659, 20.9900645977075, 255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.02391931191), 14.6260567116128, 20.5953385067132,255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.0290424956426), 14.6203223818, 20.962257530824, 255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.0114339381146), 15.7544924717687, 20.9105948374362, 255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.014923402578), 15.5, 20.9, 255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.0151467310501), 15.4985667983693, 21.1654716351249, 255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.01300003574099), 15.7544924717687, 21.1444949120919, 255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.0079295417917), 16.0285621640557, 19.8307592535984, 255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.0098185854448), 15.8, 19.8, 255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.0135209940872), 15.7659232623846, 20.0377572454617, 255, 255, 255, 0.02, 0, 0, 0);  circleWithBorder(sqrt(0.0152587869724), 16.0449536343134, 20.0597281408892, 255, 255, 255, 0.02, 0, 0, 0);  line();  tree();  // star();  square();  ljk();  glFlush();  }  int main(int argc, char \*argv[])  {  glutInit(&argc, argv);  glutInitWindowPosition(5, 200);  glutInitWindowSize(600, 600);  glutCreateWindow("Shraboni Biswas Naboni-26");  glutDisplayFunc(display);  gluOrtho2D(4, 25,10, 25);  //gluOrtho2D(9, 19, 12, 23);  glutMainLoop();  return 0;  } |
| Output Screenshot:  Screenshot (1587) |