#include<stdio.h>

#include<stdlib.h>

#include<math.h>

#include<windows.h>

#include<GL/glut.h>

#define DEGREES\_TO\_RADIANS 3.14159/180.0

void \*currentfont;

void setFont(void \*font)

{

currentfont=font;

}

void drawstring(float x,float y,float z,char \*string)

{

char \*c;

glRasterPos3f(x,y,z);

for(c=string;\*c!='\0';c++)

{ glColor3f(0.0,0.0,0.0);

glutBitmapCharacter(currentfont,\*c);

}

}

void draw\_sun(GLfloat radius)

{

glBegin(GL\_POLYGON);

glColor3f(1.0f,1.f,1.0f);

glVertex2f(0,0);

for (int i=0; i<361; i++)

{

glColor3f(.9f,0.8f,.0f);

float degInRad = i \* DEGREES\_TO\_RADIANS;

glVertex2f(cos(degInRad)\*radius,sin(degInRad)\*radius);

}

glEnd();

}

void sun()

{

glPushMatrix();

glTranslatef(70,450,0.0);

draw\_sun(25);

glPopMatrix();

}

void drawpump()

{

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);//left side of pump

glVertex2f(210.0,100.0);//base of left pump

glVertex2f(225.0,100.0);

glVertex2f(225.0,200.0);

glVertex2f(210.0,200.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(200.0,200.0);

glVertex2f(235.0,200.0);

glVertex2f(235.0,210.0);

glVertex2f(200.0,210.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(200.0,210.0);

glVertex2f(215.0,210.0);

glVertex2f(215.0,400.0);

glVertex2f(200.0,400.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(200.0,400.0);

glVertex2f(230.0,400.0);

glVertex2f(230.0,415.0);

glVertex2f(200.0,415.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(215.0,400.0);

glVertex2f(150.0,460.0);

glVertex2f(150.0,450.0);

glVertex2f(200.0,400.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(265.0,310.0);//right side of pump

glVertex2f(265.0,210.0);

glVertex2f(280.0,210.0);

glVertex2f(280.0,310.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(245.0,210.0);

glVertex2f(245.0,200.0);

glVertex2f(280.0,200.0);

glVertex2f(280.0,210.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(255.0,200.0);//base of right pump

glVertex2f(270.0,200.0);

glVertex2f(270.0,100.0);

glVertex2f(255.0,100.0);

glEnd();

glColor3f(0.60,0.60,0.60);//water outlet

glBegin(GL\_POLYGON);

glVertex2f(265.0,310.0);

glVertex2f(305.0,310.0);

glVertex2f(305.0,315.0);

glVertex2f(265.0,315.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(305.0,310.0);//pump

glVertex2f(305.0,270.0);

glVertex2f(300.0,270.0);

glVertex2f(300.0,310.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(265.0,325.0);

glVertex2f(315.0,325.0);

glVertex2f(315.0,330.0);

glVertex2f(265.0,330.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(310.0,325.0);

glVertex2f(315.0,325.0);

glVertex2f(315.0,270.0);

glVertex2f(310.0,270.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(265.0,330.0);

glVertex2f(280.0,330.0);

glVertex2f(280.0,405.0);

glVertex2f(265.0,405.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(250.0,405.0);

glVertex2f(250.0,420.0);

glVertex2f(280.0,420.0);

glVertex2f(280.0,405.0);

glEnd();

glFlush();

}

void valveclose()

{

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(230.0,210.0);

glVertex2f(250.0,210.0);

glVertex2f(250.0,215.0);

glVertex2f(230.0,215.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(235.0,215.0);

glVertex2f(245.0,215.0);

glVertex2f(245.0,220.0);

glVertex2f(235.0,220.0);

glEnd();

glFlush();

}

void valveopen()

{

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(235.0,210.0);

glVertex2f(230.0,210.0);

glVertex2f(240.0,235.0);

glVertex2f(245.0,232.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(232.0,210.0);

glVertex2f(228.0,218.0);

glVertex2f(235.0,233.0);

glVertex2f(241.0,223.0);

glEnd();

glFlush();

}

void handledown()

{

glColor3f(0.80,0.80,0.80);//handle base

glBegin(GL\_POLYGON);

glVertex2f(215.0,290.0);

glVertex2f(235.0,290.0);

glVertex2f(235.0,300.0);

glVertex2f(215.0,300.0);

glEnd();

glColor3f(0.80,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(265.0,290.0);

glVertex2f(245.0,290.0);

glVertex2f(245.0,300.0);

glVertex2f(265.0,300.0);

glEnd();

glColor3f(0.80,0.80,0.80);//handle holder(3 set of vertices)

glBegin(GL\_POLYGON);

glVertex2f(217.0,300.0);

glVertex2f(222.0,300.0);

glVertex2f(222.0,335.0);

glVertex2f(217.0,335.0);

glEnd();

glColor3f(0.80,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(222.0,330.0);

glVertex2f(258.0,330.0);

glVertex2f(258.0,335.0);

glVertex2f(222.0,335.0);

glEnd();

glColor3f(0.80,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(258.0,300.0);

glVertex2f(263.0,300.0);

glVertex2f(263.0,335.0);

glVertex2f(258.0,335.0);

glEnd();

glColor3f(0.80,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(238.0,335.0);

glVertex2f(242.0,335.0);

glVertex2f(242.0,460.0);

glVertex2f(238.0,460.0);

glEnd();

glColor3f(0.70,0.80,0.60);//small box

glBegin(GL\_POLYGON);

glVertex2f(230.0,460.0);

glVertex2f(250.0,460.0);

glVertex2f(250.0,480.0);

glVertex2f(230.0,480.0);

glEnd();

glColor3f(0.80,0.80,0.80);//small quad

glBegin(GL\_POLYGON);

glVertex2f(230.0,480.0);

glVertex2f(250.0,480.0);

glVertex2f(245.0,490.0);

glVertex2f(235.0,490.0);

glEnd();

glColor3f(0.85,0.80,0.80);//handle

glBegin(GL\_POLYGON);

glVertex2f(230.0,465.0);

glVertex2f(230.0,475.0);

glVertex2f(120.0,380.0);

glVertex2f(119.0,370.0);

glEnd();

glColor3f(0.0,0.0,0.0);//valve closed when handle down

glBegin(GL\_POLYGON);

glVertex2f(230.0,300.0);

glVertex2f(250.0,300.0);

glVertex2f(250.0,305.0);

glVertex2f(230.0,305.0);

glEnd();

glColor3f(0.0,0.0,0.0);//valve top cap

glBegin(GL\_POLYGON);

glVertex2f(235.0,305.0);

glVertex2f(245.0,305.0);

glVertex2f(245.0,309.0);

glVertex2f(235.0,309.0);

glEnd();

glColor3f(0.80,0.60,0.60);//square handle

glBegin(GL\_POLYGON);

glVertex2f(140.0,420.0);

glVertex2f(190.0,420.0);

glVertex2f(190.0,470.0);

glVertex2f(140.0,470.0);

glEnd();

glColor3f(0.70,0.0,0.0);//triangle handle

glBegin(GL\_POLYGON);

glVertex2f(140.0,470.0);

glVertex2f(165.0,480.0);

glVertex2f(190.0,470.0);

glEnd();

glFlush();

}

void handleup()

{

glColor3f(0.0,0.0,0.0);//valve cap

glBegin(GL\_POLYGON);

glVertex2f(233.0,240.0);

glVertex2f(225.0,250.0);

glVertex2f(235.0,269.0);

glVertex2f(238.0,264.0);

glEnd();

glColor3f(0.0,0.0,0.0);//valve attached to plunger is opened when handle raised

glBegin(GL\_POLYGON);

glVertex2f(233.0,245.0);

glVertex2f(225.0,240.0);

glVertex2f(240.0,269.0);

glVertex2f(243.0,263.0);

glEnd();

glColor3f(0.85,0.8,0.8);

glBegin(GL\_POLYGON);

glVertex2f(215.0,234.0);

glVertex2f(235.0,234.0);

glVertex2f(235.0,244.0);

glVertex2f(215.0,244.0);

glEnd();

glColor3f(0.85,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(265.0,234.0);

glVertex2f(245.0,234.0);

glVertex2f(245.0,244.0);

glVertex2f(265.0,244.0);

glEnd();

glColor3f(0.85,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(217.0,244.0);

glVertex2f(222.0,244.0);

glVertex2f(222.0,279.0);

glVertex2f(217.0,279.0);

glEnd();

glColor3f(0.85,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(222.0,274.0);

glVertex2f(258.0,274.0);

glVertex2f(258.0,279.0);

glVertex2f(222.0,279.0);

glEnd();

glColor3f(0.85,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(258.0,279.0);

glVertex2f(263.0,279.0);

glVertex2f(263.0,244.0);

glVertex2f(258.0,244.0);

glEnd();

glColor3f(0.85,0.80,0.80);//pipe of handle

glBegin(GL\_POLYGON);

glVertex2f(238.0,279.0);

glVertex2f(242.0,279.0);

glVertex2f(242.0,420.0);

glVertex2f(238.0,420.0);

glEnd();

glColor3f(0.70,0.80,0.60);//small box

glBegin(GL\_POLYGON);

glVertex2f(230.0,420.0);

glVertex2f(250.0,420.0);

glVertex2f(250.0,440.0);

glVertex2f(230.0,440.0);

glEnd();

glColor3f(0.80,0.80,0.80);//quad

glBegin(GL\_POLYGON);

glVertex2f(230.0,440.0);

glVertex2f(250.0,440.0);

glVertex2f(245.0,450.0);

glVertex2f(235.0,450.0);

glEnd();

glColor3f(0.80,0.80,0.80);//handle raised

glBegin(GL\_POLYGON);

glVertex2f(238.0,425.0);

glVertex2f(238.0,435.0);

glVertex2f(100.0,465.0);

glVertex2f(98.0,455.0);

glEnd();

glColor3f(0.80,0.60,0.60);//square handle

glBegin(GL\_POLYGON);

glVertex2f(140.0,420.0);

glVertex2f(190.0,420.0);

glVertex2f(190.0,470.0);

glVertex2f(140.0,470.0);

glEnd();

glColor3f(1.0,0.0,0.0);//triangle handle

glBegin(GL\_POLYGON);

glVertex2f(140.0,470.0);

glVertex2f(165.0,480.0);

glVertex2f(190.0,470.0);

glEnd();

glFlush();

}

void bricks()

{

glColor3f(0.75,0.60,0.30);

glBegin(GL\_POLYGON);

glVertex2f(190.0,100.0);

glVertex2f(190.0,150.0);

glVertex2f(0.0,150.0);

glVertex2f(0.0,100.0);

glEnd();

glColor3f(0.75,0.60,0.30);

glBegin(GL\_POLYGON);

glVertex2f(290.0,100.0);

glVertex2f(290.0,150.0);

glVertex2f(700.0,150.0);

glVertex2f(700.0,100.0);

glEnd();

glFlush();

}

void waterslide1()

{

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(0.0,1.0);

glVertex2f(700.0,1.0);

glVertex2f(700.0,100.0);

glVertex2f(0.0,100.0);

glEnd();

glColor3f(0.20,0.60,0.70);//left block

glBegin(GL\_POLYGON);

glVertex2f(190.0,100.0);

glVertex2f(210.0,100.0);

glVertex2f(210.0,130.0);

glVertex2f(190.0,130.0);

glEnd();

glColor3f(0.20,0.60,0.70);//right block

glBegin(GL\_POLYGON);

glVertex2f(270.0,100.0);

glVertex2f(290.0,100.0);

glVertex2f(290.0,130.0);

glVertex2f(270.0,130.0);

glEnd();

glColor3f(0.20,0.60,0.70);//middle block

glBegin(GL\_POLYGON);

glVertex2f(225.0,100.0);

glVertex2f(255.0,100.0);

glVertex2f(255.0,130.0);

glVertex2f(225.0,130.0);

glEnd();

glFlush();

}

void waterslide2()

{

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(0.0,1.0);

glVertex2f(700.0,1.0);

glVertex2f(700.0,100.0);

glVertex2f(0.0,100.0);

glEnd();

glColor3f(0.20,0.60,0.70);//left block

glBegin(GL\_POLYGON);

glVertex2f(190.0,100.0);

glVertex2f(210.0,100.0);

glVertex2f(210.0,130.0);

glVertex2f(190.0,130.0);

glEnd();

glColor3f(0.20,0.60,0.70);//right block

glBegin(GL\_POLYGON);

glVertex2f(270.0,100.0);

glVertex2f(290.0,100.0);

glVertex2f(290.0,130.0);

glVertex2f(270.0,130.0);

glEnd();

glColor3f(0.20,0.60,0.70);//water till base

glBegin(GL\_POLYGON);

glVertex2f(225.0,100.0);

glVertex2f(255.0,100.0);

glVertex2f(255.0,200.0);

glVertex2f(225.0,200.0);

glEnd();

glColor3f(0.20,0.60,0.70);//water till middle of pump

glBegin(GL\_POLYGON);

glVertex2f(235.0,200.0);

glVertex2f(235.0,210.0);

glVertex2f(245.0,210.0);

glVertex2f(245.0,200.0);

glEnd();

glFlush();

}

void waterslide3()

{

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(215.0,210.0);

glVertex2f(265.0,210.0);

glVertex2f(265.0,280.0);

glVertex2f(215.0,280.0);

glEnd();

waterslide2();

glFlush();

}

void waterslide4()

{

waterslide2();

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(215.0,210.0);

glVertex2f(265.0,210.0);

glVertex2f(265.0,310.0);

glVertex2f(215.0,310.0);

glEnd();

glFlush();

}

void waterupdown()

{

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(215.0,310.0);

glVertex2f(265.0,310.0);

glVertex2f(265.0,390.0);

glVertex2f(215.0,390.0);

glEnd();

}

void waterslide5()

{

waterslide2();

glColor3f(0.20,0.60,0.70);//water from base to top

glBegin(GL\_POLYGON);

glVertex2f(215.0,210.0);

glVertex2f(265.0,210.0);

glVertex2f(265.0,390.0);

glVertex2f(215.0,390.0);

glEnd();

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(265.0,315.0);

glVertex2f(265.0,325.0);

glVertex2f(310.0,325.0);

glVertex2f(310.0,315.0);

glEnd();

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(305.0,315.0);

glVertex2f(310.0,315.0);

glVertex2f(310.0,160.0);

glVertex2f(305.0,160.0);

glEnd();

glFlush();

}

void bucket()

{

glColor3f(0.0,0.0,0.0);//base

glBegin(GL\_POLYGON);

glVertex2f(295.0,150.0);

glVertex2f(320.0,150.0);

glVertex2f(320.0,155.0);

glVertex2f(295.0,155.0);

glEnd();

glColor3f(0.0,0.0,0.0);//base left

glBegin(GL\_POLYGON);

glVertex2f(295.0,150.0);

glVertex2f(300.0,150.0);

glVertex2f(295.0,250.0);

glVertex2f(290.0,250.0);

glEnd();

glColor3f(0.0,0.0,0.0);//base right

glBegin(GL\_POLYGON);

glVertex2f(319.0,150.0);

glVertex2f(325.0,150.0);

glVertex2f(330.0,250.0);

glVertex2f(325.0,250.0);

glEnd();

glFlush();

}

void waterbuckethalf()

{

glColor3f(0.20,0.60,0.70);//bucket half container

glBegin(GL\_POLYGON);

glVertex2f(298.0,155.0);

glVertex2f(320.0,155.0);

glVertex2f(323.0,200.0);

glVertex2f(297.0,200.0);

glEnd();

glFlush();

}

void waterbucketfull()

{

glColor3f(0.20,0.60,0.70);//bucket full container

glBegin(GL\_POLYGON);

glVertex2f(297.0,200.0);

glVertex2f(323.0,200.0);

glVertex2f(325.0,250.0);

glVertex2f(295.0,250.0);

glEnd();

glFlush();

}

void clearwater()

{

bucket();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_QUADS);

glVertex2f(298.0,155.0);

glVertex2f(320.0,155.0);

glVertex2f(325.0,250.0);

glVertex2f(295.0,250.0);

glEnd();

glFlush();

}

void handle()

{

glColor3f(0.0,0.80,0.30);//handle of bucket(left)

glBegin(GL\_POLYGON);

glVertex2f(290.0,250.0);

glVertex2f(295.0,250.0);

glVertex2f(300.0,220.0);

glVertex2f(295.0,220.0);

glEnd();

glColor3f(0.0,0.80,0.30);//handle of bucket(middle)

glBegin(GL\_POLYGON);

glVertex2f(298.0,230.0);

glVertex2f(315.0,230.0);

glVertex2f(315.0,220.0);

glVertex2f(298.0,220.0);

glEnd();

glColor3f(0.0,0.80,0.30);

glBegin(GL\_POLYGON);

glVertex2f(325.0,250.0);

glVertex2f(320.0,250.0);

glVertex2f(310.0,220.0);

glVertex2f(315.0,220.0);

glEnd();

glFlush();

}

void drawpump1()

{

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);//left side of pump

glVertex2f(410.0,60.0);//base of left pump

glVertex2f(425.0,60.0);

glVertex2f(425.0,160.0);

glVertex2f(410.0,160.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(400.0,160.0);

glVertex2f(435.0,160.0);

glVertex2f(435.0,170.0);

glVertex2f(400.0,170.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(400.0,170.0);

glVertex2f(415.0,170.0);

glVertex2f(415.0,360.0);

glVertex2f(400.0,360.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(400.0,360.0);

glVertex2f(430.0,360.0);

glVertex2f(430.0,375.0);

glVertex2f(400.0,375.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(415.0,360.0);

glVertex2f(350.0,420.0);

glVertex2f(350.0,410.0);

glVertex2f(400.0,360.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(465.0,270.0);//right side of pump

glVertex2f(465.0,170.0);

glVertex2f(480.0,170.0);

glVertex2f(480.0,270.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(445.0,170.0);

glVertex2f(445.0,160.0);

glVertex2f(480.0,160.0);

glVertex2f(480.0,170.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(455.0,160.0);//base of right pump

glVertex2f(470.0,160.0);

glVertex2f(470.0,60.0);

glVertex2f(455.0,60.0);

glEnd();

glColor3f(0.60,0.60,0.60);//water outlet

glBegin(GL\_POLYGON);

glVertex2f(465.0,270.0);

glVertex2f(505.0,270.0);

glVertex2f(505.0,275.0);

glVertex2f(465.0,275.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(505.0,270.0);//pump

glVertex2f(505.0,230.0);

glVertex2f(500.0,230.0);

glVertex2f(500.0,270.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(465.0,285.0);

glVertex2f(515.0,285.0);

glVertex2f(515.0,290.0);

glVertex2f(465.0,290.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(510.0,285.0);

glVertex2f(515.0,285.0);

glVertex2f(515.0,230.0);

glVertex2f(510.0,230.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(465.0,290.0);

glVertex2f(480.0,290.0);

glVertex2f(480.0,365.0);

glVertex2f(465.0,365.0);

glEnd();

glColor3f(0.60,0.60,0.60);

glBegin(GL\_POLYGON);

glVertex2f(450.0,365.0);

glVertex2f(450.0,380.0);

glVertex2f(480.0,380.0);

glVertex2f(480.0,365.0);

glEnd();

glFlush();

}

void valveclose1()

{

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(430.0,170.0);

glVertex2f(450.0,170.0);

glVertex2f(450.0,175.0);

glVertex2f(430.0,175.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(435.0,175.0);

glVertex2f(445.0,175.0);

glVertex2f(445.0,180.0);

glVertex2f(435.0,180.0);

glEnd();

glFlush();

}

void valveclose1clear()

{

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(430.0,170.0);

glVertex2f(450.0,170.0);

glVertex2f(450.0,175.0);

glVertex2f(430.0,175.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(435.0,175.0);

glVertex2f(445.0,175.0);

glVertex2f(445.0,180.0);

glVertex2f(435.0,180.0);

glEnd();

glFlush();

}

void valveopen1()

{

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(435.0,170.0);

glVertex2f(430.0,170.0);

glVertex2f(440.0,195.0);

glVertex2f(445.0,192.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(432.0,170.0);

glVertex2f(428.0,178.0);

glVertex2f(435.0,193.0);

glVertex2f(441.0,183.0);

glEnd();

glFlush();

}

void valveopen1clear()

{

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(435.0,170.0);

glVertex2f(430.0,170.0);

glVertex2f(440.0,195.0);

glVertex2f(445.0,192.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(432.0,170.0);

glVertex2f(428.0,178.0);

glVertex2f(435.0,193.0);

glVertex2f(441.0,183.0);

glEnd();

glFlush();

}

void handledown1clear()

{

glColor3f(1.0,1.0,1.0);//handle base

glBegin(GL\_POLYGON);

glVertex2f(415.0,250.0);

glVertex2f(435.0,250.0);

glVertex2f(435.0,260.0);

glVertex2f(415.0,260.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(465.0,250.0);

glVertex2f(445.0,250.0);

glVertex2f(445.0,260.0);

glVertex2f(465.0,260.0);

glEnd();

glColor3f(1.0,1.0,1.0);//handle holder(3 set of vertices)

glBegin(GL\_POLYGON);

glVertex2f(417.0,260.0);

glVertex2f(422.0,260.0);

glVertex2f(422.0,295.0);

glVertex2f(417.0,295.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(422.0,290.0);

glVertex2f(458.0,290.0);

glVertex2f(458.0,295.0);

glVertex2f(422.0,295.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(458.0,260.0);

glVertex2f(463.0,260.0);

glVertex2f(463.0,295.0);

glVertex2f(458.0,295.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(438.0,295.0);

glVertex2f(442.0,295.0);

glVertex2f(442.0,420.0);

glVertex2f(438.0,420.0);

glEnd();

glColor3f(1.0,1.0,1.0);//small box

glBegin(GL\_POLYGON);

glVertex2f(430.0,420.0);

glVertex2f(450.0,420.0);

glVertex2f(450.0,440.0);

glVertex2f(430.0,440.0);

glEnd();

glColor3f(1.0,1.0,1.0);//small quad

glBegin(GL\_POLYGON);

glVertex2f(430.0,440.0);

glVertex2f(450.0,440.0);

glVertex2f(445.0,450.0);

glVertex2f(435.0,450.0);

glEnd();

glColor3f(1.0,1.0,1.0);//handle

glBegin(GL\_POLYGON);

glVertex2f(430.0,425.0);

glVertex2f(430.0,435.0);

glVertex2f(330.0,340.0);

glVertex2f(330.0,330.0);

glEnd();

glColor3f(0.8,0.8,0.8);

glBegin(GL\_POLYGON);

glVertex2f(310.0,430.0);//right thread

glVertex2f(312.0,430.0);

glVertex2f(332.0,335.0);

glVertex2f(330.0,335.0);

glEnd();

glColor3f(1.0,1.0,1.0);//valve closed when handle down

glBegin(GL\_POLYGON);

glVertex2f(430.0,260.0);

glVertex2f(450.0,260.0);

glVertex2f(450.0,265.0);

glVertex2f(430.0,265.0);

glEnd();

glColor3f(1.0,1.0,1.0);//valve top cap

glBegin(GL\_POLYGON);

glVertex2f(435.0,265.0);

glVertex2f(445.0,265.0);

glVertex2f(445.0,269.0);

glVertex2f(435.0,269.0);

glEnd();

glColor3f(1.0,1.0,1.0);//square handle

glBegin(GL\_POLYGON);

glVertex2f(340.0,380.0);

glVertex2f(390.0,380.0);

glVertex2f(390.0,430.0);

glVertex2f(340.0,430.0);

glEnd();

glColor3f(1.0,1.0,1.0);//triangle handle

glBegin(GL\_POLYGON);

glVertex2f(340.0,430.0);

glVertex2f(365.0,440.0);

glVertex2f(390.0,430.0);

glEnd();

glFlush();

}

void handledown1()

{

glColor3f(0.80,0.80,0.80);//handle base

glBegin(GL\_POLYGON);

glVertex2f(415.0,250.0);

glVertex2f(435.0,250.0);

glVertex2f(435.0,260.0);

glVertex2f(415.0,260.0);

glEnd();

glColor3f(0.80,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(465.0,250.0);

glVertex2f(445.0,250.0);

glVertex2f(445.0,260.0);

glVertex2f(465.0,260.0);

glEnd();

glColor3f(0.80,0.80,0.80);//handle holder(3 set of vertices)

glBegin(GL\_POLYGON);

glVertex2f(417.0,260.0);

glVertex2f(422.0,260.0);

glVertex2f(422.0,295.0);

glVertex2f(417.0,295.0);

glEnd();

glColor3f(0.80,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(422.0,290.0);

glVertex2f(458.0,290.0);

glVertex2f(458.0,295.0);

glVertex2f(422.0,295.0);

glEnd();

glColor3f(0.80,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(458.0,260.0);

glVertex2f(463.0,260.0);

glVertex2f(463.0,295.0);

glVertex2f(458.0,295.0);

glEnd();

glColor3f(0.80,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(438.0,295.0);

glVertex2f(442.0,295.0);

glVertex2f(442.0,420.0);

glVertex2f(438.0,420.0);

glEnd();

glColor3f(0.70,0.80,0.60);//small box

glBegin(GL\_POLYGON);

glVertex2f(430.0,420.0);

glVertex2f(450.0,420.0);

glVertex2f(450.0,440.0);

glVertex2f(430.0,440.0);

glEnd();

glColor3f(0.80,0.80,0.80);//small quad

glBegin(GL\_POLYGON);

glVertex2f(430.0,440.0);

glVertex2f(450.0,440.0);

glVertex2f(445.0,450.0);

glVertex2f(435.0,450.0);

glEnd();

glColor3f(0.85,0.80,0.80);//handle

glBegin(GL\_POLYGON);

glVertex2f(430.0,425.0);

glVertex2f(430.0,435.0);

glVertex2f(330.0,340.0);

glVertex2f(330.0,330.0);

glEnd();

glColor3f(0.5,0.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(310.0,430.0);//right thread

glVertex2f(312.0,430.0);

glVertex2f(332.0,335.0);

glVertex2f(330.0,335.0);

glEnd();

glColor3f(0.0,0.0,0.0);//valve closed when handle down

glBegin(GL\_POLYGON);

glVertex2f(430.0,260.0);

glVertex2f(450.0,260.0);

glVertex2f(450.0,265.0);

glVertex2f(430.0,265.0);

glEnd();

glColor3f(0.0,0.0,0.0);//valve top cap

glBegin(GL\_POLYGON);

glVertex2f(435.0,265.0);

glVertex2f(445.0,265.0);

glVertex2f(445.0,269.0);

glVertex2f(435.0,269.0);

glEnd();

glColor3f(0.80,0.60,0.60);//square handle

glBegin(GL\_POLYGON);

glVertex2f(340.0,380.0);

glVertex2f(390.0,380.0);

glVertex2f(390.0,430.0);

glVertex2f(340.0,430.0);

glEnd();

glColor3f(0.70,0.0,0.0);//triangle handle

glBegin(GL\_POLYGON);

glVertex2f(340.0,430.0);

glVertex2f(365.0,440.0);

glVertex2f(390.0,430.0);

glEnd();

glFlush();

}

void handleup1()

{

glColor3f(0.0,0.0,0.0);//valve cap

glBegin(GL\_POLYGON);

glVertex2f(433.0,200.0);

glVertex2f(425.0,210.0);

glVertex2f(435.0,229.0);

glVertex2f(438.0,224.0);

glEnd();

glColor3f(0.0,0.0,0.0);//valve attached to plunger is opened when handle raised

glBegin(GL\_POLYGON);

glVertex2f(433.0,205.0);

glVertex2f(425.0,200.0);

glVertex2f(440.0,229.0);

glVertex2f(443.0,223.0);

glEnd();

glColor3f(0.85,0.8,0.8);

glBegin(GL\_POLYGON);

glVertex2f(415.0,194.0);

glVertex2f(435.0,194.0);

glVertex2f(435.0,204.0);

glVertex2f(415.0,204.0);

glEnd();

glColor3f(0.85,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(465.0,194.0);

glVertex2f(445.0,194.0);

glVertex2f(445.0,204.0);

glVertex2f(465.0,204.0);

glEnd();

glColor3f(0.85,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(417.0,204.0);

glVertex2f(422.0,204.0);

glVertex2f(422.0,239.0);

glVertex2f(417.0,239.0);

glEnd();

glColor3f(0.85,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(422.0,234.0);

glVertex2f(458.0,234.0);

glVertex2f(458.0,239.0);

glVertex2f(422.0,239.0);

glEnd();

glColor3f(0.85,0.80,0.80);

glBegin(GL\_POLYGON);

glVertex2f(458.0,239.0);

glVertex2f(463.0,239.0);

glVertex2f(463.0,204.0);

glVertex2f(458.0,204.0);

glEnd();

glColor3f(0.85,0.80,0.80);//pipe of handle

glBegin(GL\_POLYGON);

glVertex2f(438.0,239.0);

glVertex2f(442.0,239.0);

glVertex2f(442.0,380.0);

glVertex2f(438.0,380.0);

glEnd();

glColor3f(0.70,0.80,0.60);//small box

glBegin(GL\_POLYGON);

glVertex2f(430.0,380.0);

glVertex2f(450.0,380.0);

glVertex2f(450.0,400.0);

glVertex2f(430.0,400.0);

glEnd();

glColor3f(0.80,0.80,0.80);//quad

glBegin(GL\_POLYGON);

glVertex2f(430.0,400.0);

glVertex2f(450.0,400.0);

glVertex2f(445.0,410.0);

glVertex2f(435.0,410.0);

glEnd();

glColor3f(0.5,0.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(308.0,430.0);//right thread

glVertex2f(315.0,430.0);

glVertex2f(334.0,415.0);

glVertex2f(336.0,420.0);

glEnd();

glColor3f(0.80,0.80,0.80);//handle raised

glBegin(GL\_POLYGON);

glVertex2f(438.0,385.0);

glVertex2f(438.0,395.0);

glVertex2f(330.0,425.0);

glVertex2f(330.0,415.0);

glEnd();

glColor3f(0.80,0.60,0.60);//square handle

glBegin(GL\_POLYGON);

glVertex2f(340.0,380.0);

glVertex2f(390.0,380.0);

glVertex2f(390.0,430.0);

glVertex2f(340.0,430.0);

glEnd();

glColor3f(1.0,0.0,0.0);//triangle handle

glBegin(GL\_POLYGON);

glVertex2f(340.0,430.0);

glVertex2f(365.0,440.0);

glVertex2f(390.0,430.0);

glEnd();

glFlush();

}

void handleup1clear()

{

glColor3f(1.0,1.0,1.0);//valve cap

glBegin(GL\_POLYGON);

glVertex2f(433.0,200.0);

glVertex2f(425.0,210.0);

glVertex2f(435.0,229.0);

glVertex2f(438.0,224.0);

glEnd();

glColor3f(1.0,1.0,1.0);//valve attached to plunger is opened when handle raised

glBegin(GL\_POLYGON);

glVertex2f(433.0,205.0);

glVertex2f(425.0,200.0);

glVertex2f(440.0,229.0);

glVertex2f(443.0,223.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(415.0,194.0);

glVertex2f(435.0,194.0);

glVertex2f(435.0,204.0);

glVertex2f(415.0,204.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(465.0,194.0);

glVertex2f(445.0,194.0);

glVertex2f(445.0,204.0);

glVertex2f(465.0,204.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(417.0,204.0);

glVertex2f(422.0,204.0);

glVertex2f(422.0,239.0);

glVertex2f(417.0,239.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(422.0,234.0);

glVertex2f(458.0,234.0);

glVertex2f(458.0,239.0);

glVertex2f(422.0,239.0);

glEnd();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(458.0,239.0);

glVertex2f(463.0,239.0);

glVertex2f(463.0,204.0);

glVertex2f(458.0,204.0);

glEnd();

glColor3f(1.0,1.0,1.0);//pipe of handle

glBegin(GL\_POLYGON);

glVertex2f(438.0,239.0);

glVertex2f(442.0,239.0);

glVertex2f(442.0,380.0);

glVertex2f(438.0,380.0);

glEnd();

glColor3f(1.0,1.0,1.0);//small box

glBegin(GL\_POLYGON);

glVertex2f(430.0,380.0);

glVertex2f(450.0,380.0);

glVertex2f(450.0,400.0);

glVertex2f(430.0,400.0);

glEnd();

glColor3f(1.0,1.0,1.0);//quad

glBegin(GL\_POLYGON);

glVertex2f(430.0,400.0);

glVertex2f(450.0,400.0);

glVertex2f(445.0,410.0);

glVertex2f(435.0,410.0);

glEnd();

glColor3f(0.8,0.8,0.8);

glBegin(GL\_POLYGON);

glVertex2f(308.0,430.0);//right thread

glVertex2f(315.0,430.0);

glVertex2f(334.0,415.0);

glVertex2f(336.0,420.0);

glEnd();

glColor3f(1.0,1.0,1.0);//handle raised

glBegin(GL\_POLYGON);

glVertex2f(438.0,385.0);

glVertex2f(438.0,395.0);

glVertex2f(330.0,425.0);

glVertex2f(330.0,415.0);

glEnd();

glColor3f(1.0,1.0,1.0);//square handle

glBegin(GL\_POLYGON);

glVertex2f(340.0,380.0);

glVertex2f(390.0,380.0);

glVertex2f(390.0,430.0);

glVertex2f(340.0,430.0);

glEnd();

glColor3f(1.0,1.0,1.0);//triangle handle

glBegin(GL\_POLYGON);

glVertex2f(340.0,430.0);

glVertex2f(365.0,440.0);

glVertex2f(390.0,430.0);

glEnd();

glFlush();

}

void waterslide21()

{

glColor3f(0.20,0.60,0.70);//water till base

glBegin(GL\_POLYGON);

glVertex2f(425.0,60.0);

glVertex2f(455.0,60.0);

glVertex2f(455.0,160.0);

glVertex2f(425.0,160.0);

glEnd();

glColor3f(0.20,0.60,0.70);//water till middle of pump

glBegin(GL\_POLYGON);

glVertex2f(435.0,160.0);

glVertex2f(435.0,170.0);

glVertex2f(445.0,170.0);

glVertex2f(445.0,160.0);

glEnd();

glFlush();

}

void waterslide31()

{

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(415.0,170.0);

glVertex2f(465.0,170.0);

glVertex2f(465.0,240.0);

glVertex2f(415.0,240.0);

glEnd();

glFlush();

}

void waterslide41()

{

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(415.0,170.0);

glVertex2f(465.0,170.0);

glVertex2f(465.0,270.0);

glVertex2f(415.0,270.0);

glEnd();

glFlush();

}

void waterupdown1()

{

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(415.0,270.0);

glVertex2f(465.0,270.0);

glVertex2f(465.0,350.0);

glVertex2f(415.0,350.0);

glEnd();

}

void waterupdown1clear()

{

glColor3f(1.0,1.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(415.0,270.0);

glVertex2f(465.0,270.0);

glVertex2f(465.0,350.0);

glVertex2f(415.0,350.0);

glEnd();

}

void waterslide51()

{

glColor3f(0.20,0.60,0.70);//water from base to top

glBegin(GL\_POLYGON);

glVertex2f(415.0,170.0);

glVertex2f(465.0,170.0);

glVertex2f(465.0,350.0);

glVertex2f(415.0,350.0);

glEnd();

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(465.0,275.0);

glVertex2f(465.0,285.0);

glVertex2f(510.0,285.0);

glVertex2f(510.0,275.0);

glEnd();

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(505.0,275.0);

glVertex2f(510.0,275.0);

glVertex2f(510.0,115.0);

glVertex2f(505.0,115.0);

glEnd();

glFlush();

}

void waterbucketfull1()

{

glColor3f(0.20,0.60,0.70);//bucket full container

glBegin(GL\_POLYGON);

glVertex2f(497.0,160.0);

glVertex2f(523.0,160.0);

glVertex2f(525.0,210.0);

glVertex2f(495.0,210.0);

glEnd();

glFlush();

}

void handle1()

{

glColor3f(0.0,0.80,0.30);//handle of bucket(left)

glBegin(GL\_POLYGON);

glVertex2f(490.0,210.0);

glVertex2f(495.0,210.0);

glVertex2f(500.0,180.0);

glVertex2f(495.0,180.0);

glEnd();

glColor3f(0.0,0.80,0.30);//handle of bucket(middle)

glBegin(GL\_POLYGON);

glVertex2f(498.0,190.0);

glVertex2f(515.0,190.0);

glVertex2f(515.0,180.0);

glVertex2f(498.0,180.0);

glEnd();

glColor3f(0.0,0.80,0.30);

glBegin(GL\_POLYGON);

glVertex2f(525.0,210.0);

glVertex2f(520.0,210.0);

glVertex2f(510.0,180.0);

glVertex2f(515.0,180.0);

glEnd();

glFlush();

}

void bucket1()

{

glColor3f(0.0,0.0,0.0);//base

glBegin(GL\_POLYGON);

glVertex2f(495.0,110.0);

glVertex2f(520.0,110.0);

glVertex2f(520.0,115.0);

glVertex2f(495.0,115.0);

glEnd();

glColor3f(0.0,0.0,0.0);//base left

glBegin(GL\_POLYGON);

glVertex2f(495.0,110.0);

glVertex2f(500.0,110.0);

glVertex2f(495.0,210.0);

glVertex2f(490.0,210.0);

glEnd();

glColor3f(0.0,0.0,0.0);//base right

glBegin(GL\_POLYGON);

glVertex2f(519.0,110.0);

glVertex2f(525.0,110.0);

glVertex2f(530.0,210.0);

glVertex2f(525.0,210.0);

glEnd();

glFlush();

}

void clearwater1()

{

bucket();

glColor3f(1.0,1.0,1.0);

glBegin(GL\_QUADS);

glVertex2f(498.0,115.0);

glVertex2f(520.0,115.0);

glVertex2f(525.0,210.0);

glVertex2f(495.0,210.0);

glEnd();

glFlush();

}

void waterbuckethalf1()

{

glColor3f(0.20,0.60,0.70);//bucket half container

glBegin(GL\_POLYGON);

glVertex2f(498.0,115.0);

glVertex2f(520.0,115.0);

glVertex2f(523.0,160.0);

glVertex2f(497.0,160.0);

glEnd();

glFlush();

}

void draw\_pixel(GLint xc,GLint yc)

{

glColor3f(1.0,0.5,0.0);

glBegin(GL\_POINTS);

glVertex2i(xc,yc);

glEnd();

glFlush();

}

void plot\_pixel(GLint h,GLint k,GLint x,GLint y)

{

draw\_pixel(x+h,y+k);

draw\_pixel(-x+h,y+k);

draw\_pixel(x+h,-y+k);

draw\_pixel(-x+h,-y+k);

draw\_pixel(y+h,x+k);

draw\_pixel(-y+h,x+k);

draw\_pixel(y+h,-x+k);

draw\_pixel(-y+h,-x+k);

}

void circle\_draw(GLint h,GLint k,GLint r)

{

GLint d=1-r,x=0,y=r;

while(y>x)

{

plot\_pixel(h,k,x,y);

if(d<0)d+=2\*x+3;

else

{

d+=2\*(x-y)+5;

--y;

}

++x;

}

plot\_pixel(h,k,x,y);

}

void circle()

{

int i;

for(i=0;i<=20;i++)

{

glPointSize(10.0);

circle\_draw(70,450,i);

}

glFlush();

}

void sunrays()

{

double i=70,j=430;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_POLYGON);

glVertex2f(i,j);

glVertex2f(i+5,j);

glVertex2f(i+3,j-25);

glVertex2f(i+3,j-25);

glEnd();

double k=60,l=430;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_POLYGON);

glVertex2f(k,l);

glVertex2f(k+5,l);

glVertex2f(k+3,l-25);

glVertex2f(k+3,l-25);

glEnd();

double m=50,n=438;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_POLYGON);

glVertex2f(m,n);

glVertex2f(m+5,n);

glVertex2f(m+3,n-25);

glVertex2f(m+3,n-25);

glEnd();

double o=45,p=440;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(o+3,p+5);

glVertex2f(o+5,p);

glVertex2f(o-10,p-25);

glEnd();

double q=50,r=460;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(q,r+5);

glVertex2f(q+10,r);

glVertex2f(q-10,r+25);

glEnd();

double s=60,t=460;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(s,t+5);

glVertex2f(s+10,t);

glVertex2f(s-10,t+25);

glEnd();

double u=70,v=460;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(u,v+5);

glVertex2f(u+10,v);

glVertex2f(u-10,v+35);

glEnd();

double w=80,x=460;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(w,x+5);

glVertex2f(w+10,x);

glVertex2f(w-10,x+35);

glEnd();

double y=90,z=455;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(y,z+5);

glVertex2f(y-10,z);

glVertex2f(y+10,z+35);

glEnd();

double a=90,b=430;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(a,b+5);

glVertex2f(a-10,b);

glVertex2f(a+10,b+35);

glEnd();

double c=90,d=435;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(c,d+5);

glVertex2f(c-10,d);

glVertex2f(c+10,d-15);

glEnd();

double e=80,f=435;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(e,f+5);

glVertex2f(e-5,f);

glVertex2f(e+8,f-35);

glEnd();

double y1=90,z1=455;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(y1,z1+5);

glVertex2f(y1-10,z1);

glVertex2f(y1+10,z1+35);

glEnd();

double g=40,h=450;

glColor3f(.9f,0.8f,.0f);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(g,h);

glVertex2f(50,h);

glVertex2f(50,460);

glEnd();

glFlush();

}

void rays1(int p,int q,int r)

{

double i=415,j=70;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i>=185)

{

glVertex2f(j,i);

glVertex2f(j,i+5);

i=i-10;

j=j-1;

}

glEnd();

double i1=425,j1=70;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i1>=185)

{

glVertex2f(j1,i1);

glVertex2f(j1,i1+5);

i1=i1-10;

j1=j1-1;

}

glEnd();

glFlush();

}

void rays2(int p,int q,int r)

{

double i=415,j=60;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i>=185)

{

glVertex2f(j,i);

glVertex2f(j,i+5);

i=i-10;

j=j-1;

}

glEnd();

double i1=425,j1=60;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i1>=185)

{

glVertex2f(j1,i1);

glVertex2f(j1,i1+5);

i1=i1-10;

j1=j1-1;

}

glEnd();

glFlush();

}

void rays3(int p,int q,int r)

{

double i=415,j=50;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i>=185)

{

glVertex2f(j,i);

glVertex2f(j,i+5);

i=i-10;

j=j-1;

}

glEnd();

double i1=425,j1=50;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i1>=185)

{

glVertex2f(j1,i1);

glVertex2f(j1,i1+5);

i1=i1-10;

j1=j1-1;

}

glEnd();

glFlush();

}

void rays4(int p,int q,int r)

{

double i=425,j=40;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i>=185)

{

glVertex2f(j,i);

glVertex2f(j,i+5);

i=i-10;

j=j-1;

}

glEnd();

double i1=415,j1=40;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i1>=185)

{

glVertex2f(j1,i1);

glVertex2f(j1,i1+5);

i1=i1-10;

j1=j1-1;

}

glEnd();

glFlush();

}

void rays5(int p,int q,int r)

{

double i=415,j=80;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i>=185)

{

glVertex2f(j,i);

glVertex2f(j,i+5);

i=i-10;

j=j-1;

}

glEnd();

double i1=425,j1=80;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i1>=185)

{

glVertex2f(j1,i1);

glVertex2f(j1,i1+5);

i1=i1-10;

j1=j1-1;

}

glEnd();

glFlush();

}

void rays6(int p,int q,int r)

{

double i=425,j=90;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i>=185)

{

glVertex2f(j,i);

glVertex2f(j,i+5);

i=i-10;

j=j-1;

}

glEnd();

double i1=415,j1=90;

glColor3f(p,q,r);

glBegin(GL\_POLYGON);

while(i1>=185)

{

glVertex2f(j1,i1);

glVertex2f(j1,i1+5);

i1=i1-10;

j1=j1-1;

}

glEnd();

glFlush();

}

/\*void rays()

{

rays1(1.0,0.5,0.0);

rays2(1.0,0.5,0.0);

rays3(1.0,0.5,0.0);

rays4(1.0,0.5,0.0);

rays5(1.0,0.5,0.0);

rays6(1.0,0.5,0.0);

}\*/

void solarpanel()

{

glColor3f(0.5,0.5,0.5);//panel base

glBegin(GL\_POLYGON);

glVertex2f(20.0,60.0);

glVertex2f(60.0,60.0);

glVertex2f(60.0,70.0);

glVertex2f(20.0,70.0);

glEnd();

glColor3f(0.5,0.5,0.5);//panel pipe

glBegin(GL\_POLYGON);

glVertex2f(38.0,70.0);

glVertex2f(45.0,70.0);

glVertex2f(45.0,130.0);

glVertex2f(38.0,130.0);

glEnd();

glColor3f(0.5,0.5,0.5);//panel holder center

glBegin(GL\_POLYGON);

glVertex2f(10.0,120.0);

glVertex2f(80.0,120.0);

glVertex2f(70.0,185.0);

glVertex2f(5.0,185.0);

glEnd();

setFont(GLUT\_BITMAP\_TIMES\_ROMAN\_24);

glColor3f(0,0,0);

drawstring(20,153,0,"solarpanel");

glColor3f(0.0,0.0,0.0);//horizontal line 0

glBegin(GL\_LINES);

glVertex2f(10.0,120.0);

glVertex2f(80.0,120.0);

glEnd();

glColor3f(0.0,0.0,0.0);//horizontal line 1

glBegin(GL\_LINES);

glVertex2f(9.0,143.0);

glVertex2f(76.0,143.0);

glEnd();

glColor3f(0.0,0.0,0.0);//horizontal line 2

glBegin(GL\_LINES);

glVertex2f(7.0,163.0);

glVertex2f(73.0,163.0);

glEnd();

glColor3f(0.0,0.0,0.0);//horizontal line 3

glBegin(GL\_LINES);

glVertex2f(5.0,185.0);

glVertex2f(70.0,185.0);

glEnd();

glColor3f(0.0,0.0,0.0);//vertical line 0

glBegin(GL\_LINES);

glVertex2f(5.0,185.0);

glVertex2f(10.0,120.0);

glEnd();

glColor3f(0.0,0.0,0.0);//vertical line 1

glBegin(GL\_LINES);

glVertex2f(24.0,185.0);

glVertex2f(30.0,120.0);

glEnd();

glColor3f(0.0,0.0,0.0);//vertical line 2

glBegin(GL\_LINES);

glVertex2f(39.0,185.0);

glVertex2f(45.0,120.0);

glEnd();

glColor3f(0.0,0.0,0.0);//vertical line 3

glBegin(GL\_LINES);

glVertex2f(54.0,185.0);

glVertex2f(60.0,120.0);

glEnd();

glColor3f(0.0,0.0,0.0);//vertical line 4

glBegin(GL\_LINES);

glVertex2f(80.0,120.0);

glVertex2f(70.0,185.0);

glEnd();

glFlush();

}

void solarcharger()

{

glColor3f(0.3,0.3,0.3);

glBegin(GL\_POLYGON);

glVertex2f(5.0,185.0);

glVertex2f(70.0,185.0);

glVertex2f(75.0,200.0);

glVertex2f(10.0,200.0);

glEnd();

glColor3f(0.3,0.3,0.3);

glBegin(GL\_POLYGON);

glVertex2f(69.0,185.0);

glVertex2f(75.0,200.0);

glVertex2f(75.0,170.0);

glVertex2f(72.0,170.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_LINES);

glVertex2f(69.0,185.0);

glVertex2f(75.0,200.0);

glVertex2f(75.0,170.0);

glVertex2f(72.0,170.0);

glEnd();

glFlush();

}

void battery()

{

glColor3f(0.7,0.7,0.7);

glBegin(GL\_POLYGON);

glVertex2f(120.0,130.0);

glVertex2f(190.0,130.0);

glVertex2f(190.0,200.0);

glVertex2f(120.0,200.0);

glEnd();

glColor3f(0.4,0.4,0.4);

glBegin(GL\_POLYGON);

glVertex2f(120.0,200.0);

glVertex2f(125.0,203.0);

glVertex2f(195.0,203.0);

glVertex2f(190.0,200.0);

glEnd();

glColor3f(0.4,0.4,0.4);

glBegin(GL\_POLYGON);

glVertex2f(195.0,203.0);

glVertex2f(190.0,200.0);

glVertex2f(190.0,130.0);

glVertex2f(195.0,130.0);

glEnd();

glColor3f(0,0,0);

setFont(GLUT\_BITMAP\_TIMES\_ROMAN\_24);

drawstring(130,165,0,"BATTERY");

glFlush();

}

void charging()

{

glColor3f(0.5,0.5,0.5);//charger base

glBegin(GL\_POLYGON);

glVertex2f(150.0,202.0);

glVertex2f(155.0,202.0);

glVertex2f(155.0,240.0);

glVertex2f(150.0,240.0);

glEnd();

glColor3f(0.0,0.0,0.0);//outer box of charging

glBegin(GL\_POLYGON);

glVertex2f(130.0,240.0);

glVertex2f(175.0,240.0);

glVertex2f(175.0,310.0);

glVertex2f(130.0,310.0);

glEnd();

glColor3f(0.5,0.5,0.0);//inner box of charging

glBegin(GL\_POLYGON);

glVertex2f(135.0,250.0);

glVertex2f(170.0,250.0);

glVertex2f(170.0,300.0);

glVertex2f(135.0,300.0);

glEnd();

glFlush();

}

void rec1()

{

glColor3f(0.0,1.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(137.0,254.0);

glVertex2f(168.0,254.0);

glVertex2f(168.0,265.0);

glVertex2f(137.0,265.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_LINE\_LOOP);

glVertex2f(137.0,254.0);

glVertex2f(168.0,254.0);

glVertex2f(168.0,265.0);

glVertex2f(137.0,265.0);

glEnd();

glFlush();

}

void rec2()

{

glColor3f(0.0,1.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(137.0,267.0);

glVertex2f(168.0,267.0);

glVertex2f(168.0,278.0);

glVertex2f(137.0,278.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_LINE\_LOOP);

glVertex2f(137.0,267.0);

glVertex2f(168.0,267.0);

glVertex2f(168.0,278.0);

glVertex2f(137.0,278.0);

glEnd();

glFlush();

}

void rec3()

{

glColor3f(0.0,1.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(137.0,280.0);

glVertex2f(168.0,280.0);

glVertex2f(168.0,291.0);

glVertex2f(137.0,291.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_LINE\_LOOP);

glVertex2f(137.0,280.0);

glVertex2f(168.0,280.0);

glVertex2f(168.0,291.0);

glVertex2f(137.0,291.0);

glEnd();

glFlush();

}

void rec4()

{

glColor3f(1.0,0.0,0.0);//redbox

glBegin(GL\_POLYGON);

glVertex2f(137.0,254.0);

glVertex2f(168.0,254.0);

glVertex2f(168.0,265.0);

glVertex2f(137.0,265.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_LINE\_LOOP);

glVertex2f(137.0,254.0);

glVertex2f(168.0,254.0);

glVertex2f(168.0,265.0);

glVertex2f(137.0,265.0);

glEnd();

glFlush();

}

void clearcharger()

{

glColor3f(1.0,1.0,1.0);//inner box of charging is cleared

glBegin(GL\_POLYGON);

glVertex2f(135.0,250.0);

glVertex2f(170.0,250.0);

glVertex2f(170.0,300.0);

glVertex2f(135.0,300.0);

glEnd();

glFlush();

}

void pulley1()

{

int i;

for(i=0;i<=5;i++)

{

glPointSize(15.0);

circle\_draw(255,430,i);

}

glColor3f(1.0,0.0,0.0);

glBegin(GL\_POINTS);

glVertex2f(255.0,430.0);

glEnd();

glFlush();

}

void pulley2()

{

int i;

for(i=0;i<=5;i++)

{

glPointSize(15.0);

circle\_draw(305,430,i);

}

glColor3f(1.0,0.0,0.0);

glBegin(GL\_POINTS);

glVertex2f(305.0,430.0);

glEnd();

glFlush();

}

void pipe()

{

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(69.0,175.0);

glVertex2f(75.0,185.0);

glVertex2f(120.0,185.0);

glVertex2f(120.0,175.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(69.0,175.0);

glVertex2f(120.0,175.0);

glVertex2f(120.0,165.0);

glVertex2f(72.0,165.0);

glEnd();

glColor3f(0.0,0.0,0.0);//pipe to motor

glBegin(GL\_POLYGON);

glVertex2f(189.0,175.0);

glVertex2f(195.0,185.0);

glVertex2f(220.0,185.0);

glVertex2f(220.0,175.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(189.0,175.0);

glVertex2f(220.0,175.0);

glVertex2f(220.0,165.0);

glVertex2f(192.0,165.0);

glEnd();

glColor3f(0.0,0.0,0.0);//straight pipe towards motor

glBegin(GL\_POLYGON);

glVertex2f(210.0,175.0);

glVertex2f(220.0,175.0);

glVertex2f(220.0,480.0);

glVertex2f(210.0,480.0);

glEnd();

glColor3f(0.0,0.0,0.0);//line to connect to motor top pipe

glBegin(GL\_POLYGON);

glVertex2f(220.0,480.0);

glVertex2f(210.0,480.0);

glVertex2f(272.0,465.0);

glVertex2f(282.0,465.0);

glEnd();

glColor3f(0.0,0.0,0.0);//pipe inward to motor

glBegin(GL\_POLYGON);

glVertex2f(275.0,465.0);

glVertex2f(285.0,465.0);

glVertex2f(285.0,435.0);

glVertex2f(275.0,435.0);

glEnd();

glColor3f(0.0,0.0,0.0);//horizontal pipe inward to motor

glBegin(GL\_POLYGON);

glVertex2f(250.0,435.0);

glVertex2f(310.0,435.0);

glVertex2f(310.0,425.0);

glVertex2f(250.0,425.0);

glEnd();

glColor3f(0.0,0.0,0.0);//vertical pipe left inward to motor

glBegin(GL\_POLYGON);

glVertex2f(250.0,425.0);

glVertex2f(255.0,425.0);

glVertex2f(255.0,420.0);

glVertex2f(250.0,420.0);

glEnd();

glColor3f(0.0,0.0,0.0);//vertical pipe right inward to motor

glBegin(GL\_POLYGON);

glVertex2f(310.0,425.0);

glVertex2f(305.0,425.0);

glVertex2f(305.0,420.0);

glVertex2f(310.0,420.0);

glEnd();

glFlush();

}

void outerbox()

{

glColor3f(0.4,0.4,0.4);

glBegin(GL\_POLYGON);

glVertex2f(230.0,120.0);

glVertex2f(230.0,130.0);

glVertex2f(330.0,130.0);

glVertex2f(330.0,120.0);

glEnd();

glColor3f(0.4,0.4,0.4);

glBegin(GL\_POLYGON);

glVertex2f(230.0,130.0);

glVertex2f(240.0,130.0);

glVertex2f(240.0,470.0);

glVertex2f(230.0,470.0);

glEnd();

glColor3f(0.4,0.4,0.4);

glBegin(GL\_POLYGON);

glVertex2f(230.0,470.0);

glVertex2f(230.0,460.0);

glVertex2f(330.0,460.0);

glVertex2f(330.0,470.0);

glEnd();

glColor3f(0.4,0.4,0.4);

glBegin(GL\_POLYGON);

glVertex2f(320.0,470.0);

glVertex2f(330.0,470.0);

glVertex2f(330.0,120.0);

glVertex2f(320.0,120.0);

glEnd();

glColor3f(0.8,0.8,0.8);

glBegin(GL\_POLYGON);

glVertex2f(240.0,460.0);

glVertex2f(320.0,460.0);

glVertex2f(320.0,130.0);

glVertex2f(240.0,130.0);

glEnd();

glFlush();

}

void counterweight1()

{

glColor3f(0.0,0.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(245.0,200.0);

glVertex2f(255.0,200.0);

glVertex2f(255.0,270.0);

glVertex2f(245.0,270.0);

glEnd();

glColor3f(0.5,0.0,1.0);//left thread

glBegin(GL\_POLYGON);

glVertex2f(247.0,430.0);

glVertex2f(250.0,430.0);

glVertex2f(250.0,270.0);

glVertex2f(247.0,270.0);

glEnd();

glFlush();

}

void counterweight1clear()

{

glColor3f(0.8,0.8,0.8);

glBegin(GL\_POLYGON);

glVertex2f(245.0,200.0);

glVertex2f(255.0,200.0);

glVertex2f(255.0,270.0);

glVertex2f(245.0,270.0);

glEnd();

glColor3f(0.8,0.8,0.8);//left thread

glBegin(GL\_POLYGON);

glVertex2f(247.0,430.0);

glVertex2f(250.0,430.0);

glVertex2f(250.0,270.0);

glVertex2f(247.0,270.0);

glEnd();

glFlush();

}

void counterweight2()

{

glColor3f(0.0,0.0,1.0);

glBegin(GL\_POLYGON);

glVertex2f(245.0,290.0);

glVertex2f(255.0,290.0);

glVertex2f(255.0,360.0);

glVertex2f(245.0,360.0);

glEnd();

glColor3f(0.5,0.0,1.0);//left thread

glBegin(GL\_POLYGON);

glVertex2f(247.0,430.0);

glVertex2f(250.0,430.0);

glVertex2f(250.0,360.0);

glVertex2f(247.0,360.0);

glEnd();

glFlush();

}

void counterweight2clear()

{

glColor3f(0.8,0.8,0.8);

glBegin(GL\_POLYGON);

glVertex2f(245.0,290.0);

glVertex2f(255.0,290.0);

glVertex2f(255.0,360.0);

glVertex2f(245.0,360.0);

glEnd();

glColor3f(0.8,0.8,0.8);//left thread

glBegin(GL\_POLYGON);

glVertex2f(247.0,430.0);

glVertex2f(250.0,430.0);

glVertex2f(250.0,360.0);

glVertex2f(247.0,360.0);

glEnd();

glFlush();

}

void motor()

{

glColor3f(0.0,0.0,1.0);//horizontal pipe inward to motor

glBegin(GL\_POLYGON);

glVertex2f(270.0,445.0);

glVertex2f(290.0,445.0);

glVertex2f(290.0,425.0);

glVertex2f(270.0,425.0);

glEnd();

glColor3f(0,0,0);

setFont(GLUT\_BITMAP\_HELVETICA\_18);

drawstring(270,435,0,"motor");

glFlush();

}

void waterslide()

{

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(0.0,0.0);

glVertex2f(0.0,40.0);

glVertex2f(550.0,40.0);

glVertex2f(550.0,0.0);

glEnd();

glColor3f(0.20,0.60,0.70);

glBegin(GL\_POLYGON);

glVertex2f(400.0,40.0);

glVertex2f(550.0,40.0);

glVertex2f(550.0,60.0);

glVertex2f(400.0,60.0);

glEnd();

glFlush();

}

void motor1()

{

glColor3f(0.7,0.7,0.7);

glBegin(GL\_POLYGON);

glVertex2f(230.0,130.0);

glVertex2f(290.0,130.0);

glVertex2f(290.0,200.0);

glVertex2f(230.0,200.0);

glEnd();

setFont(GLUT\_BITMAP\_TIMES\_ROMAN\_24);

glColor3f(0,0,0);

drawstring(240,165,0,"MOTOR");

glFlush();

}

void pump1()

{

glColor3f(0.7,0.7,0.7);

glBegin(GL\_POLYGON);

glVertex2f(350.0,130.0);

glVertex2f(530.0,130.0);

glVertex2f(530.0,200.0);

glVertex2f(350.0,200.0);

glEnd();

setFont(GLUT\_BITMAP\_TIMES\_ROMAN\_24);

glColor3f(0,0,0);

drawstring(350,165,0,"PUMPING WITHOUT HUMAN ENERGY");

glFlush();

}

void mud()

{

glColor3f(1.0,1.0,0.0);

glBegin(GL\_POLYGON);

glVertex2f(0.0,40.0);

glVertex2f(0.0,60.0);

glVertex2f(400.0,60.0);

glVertex2f(400.0,40.0);

glEnd();

glFlush();

}

void greenland()

{

glColor3f(0.0,0.6,0.0);

glBegin(GL\_POLYGON);

glVertex2f(0.0,61.0);

glVertex2f(2.0,250.0);

glVertex2f(400.0,250.0);

glVertex2f(400.0,61.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_LINE\_LOOP);

glVertex2f(0.0,61.0);

glVertex2f(2.0,250.0);

glVertex2f(400.0,250.0);

glVertex2f(400.0,61.0);

glEnd();

glColor3f(0.0,0.6,0.0);

glBegin(GL\_POLYGON);

glVertex2f(480.0,60.0);

glVertex2f(550.0,60.0);

glVertex2f(550.0,120.0);

glVertex2f(480.0,120.0);

glEnd();

glColor3f(0.0,0.0,0.0);

glBegin(GL\_LINE\_LOOP);

glVertex2f(480.0,60.0);

glVertex2f(550.0,60.0);

glVertex2f(550.0,120.0);

glVertex2f(480.0,120.0);

glEnd();

glFlush();

}

float e=50.0,f=50.0;

void robolegright()

{

int i;

for(i=0;i<=8;i++)

{

glPointSize(10.0);

circle\_draw(270,260,i);

}

glFlush();

}

void robolegleft()

{

int i;

for(i=0;i<=8;i++)

{

glPointSize(10.0);

circle\_draw(190,260,i);

}

glFlush();

}

void roboeye1()

{

int i;

for(i=0;i<=5;i++)

{

glPointSize(10.0);

circle\_draw(210,415,i);

}

glFlush();

}

void roboeye2()

{

int i;

for(i=0;i<=5;i++)

{

glPointSize(10.0);

circle\_draw(250,415,i);

}

glFlush();

}

void drawrobo()

{

glColor3f(1.0,1.0,1.0);//outer box of left eye

glBegin(GL\_POLYGON);

glVertex2f(200.0,400.0);

glVertex2f(220.0,400.0);

glVertex2f(220.0,430.0);

glVertex2f(200.0,430.0);

glEnd();

glColor3f(1.0,1.0,1.0);//outer box of right eye

glBegin(GL\_POLYGON);

glVertex2f(240.0,400.0);

glVertex2f(260.0,400.0);

glVertex2f(260.0,430.0);

glVertex2f(240.0,430.0);

glEnd();

glColor3f(0.0,1.0,0.0);//left neck

glBegin(GL\_LINES);

glVertex2f(210.0,400.0);

glVertex2f(210.0,375.0);

glEnd();

glColor3f(0.0,1.0,0.0);//right neck

glBegin(GL\_LINES);

glVertex2f(250.0,400.0);

glVertex2f(250.0,375.0);

glEnd();

glColor3f(0.7,0.7,0.7);//outer tummy

glBegin(GL\_POLYGON);

glVertex2f(190.0,375.0);

glVertex2f(270.0,375.0);

glVertex2f(270.0,280.0);

glVertex2f(190.0,280.0);

glEnd();

glColor3f(0.8,0.6,0.7);//inner tummy

glBegin(GL\_POLYGON);

glVertex2f(210.0,360.0);

glVertex2f(250.0,360.0);

glVertex2f(250.0,295.0);

glVertex2f(210.0,295.0);

glEnd();

glColor3f(0.0,0.0,1.0);//left leg

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(190.0,290.0);

glVertex2f(180.0,260.0);

glVertex2f(200.0,260.0);

glEnd();

glBegin(GL\_TRIANGLE\_FAN);//right leg

glVertex2f(270.0,290.0);

glVertex2f(280.0,260.0);

glVertex2f(260.0,260.0);

glEnd();

glColor3f(1.0,0.0,0.0);//left arm

glBegin(GL\_POLYGON);

glVertex2f(190.0,375.0);

glVertex2f(150.0,320.0);

glVertex2f(150.0,310.0);

glVertex2f(190.0,355.0);

glEnd();

glColor3f(0.0,1.0,0.0);//left finger

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(150.0,320.0);

glVertex2f(150.0,310.0);

glVertex2f(140.0,305.0);

glVertex2f(140.0,300.0);

glEnd();

glColor3f(1.0,0.0,0.0);//right arm

glBegin(GL\_POLYGON);

glVertex2f(270.0,375.0);

glVertex2f(310.0,320.0);

glVertex2f(310.0,310.0);

glVertex2f(270.0,355.0);

glEnd();

glColor3f(0.0,1.0,0.0);//right finger

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(310.0,320.0);

glVertex2f(310.0,310.0);

glVertex2f(320.0,305.0);

glVertex2f(320.0,300.0);

glEnd();

glColor3f(1.0,0.0,0.0);

glBegin(GL\_POINTS);

glVertex2f(240.0,365.0);

glEnd();

glColor3f(0.0,0.0,1.0);//blue point

glBegin(GL\_POINTS);

glVertex2f(245.0,365.0);

glEnd();

glColor3f(0.0,1.0,0.0);//green point

glBegin(GL\_POINTS);

glVertex2f(250.0,365.0);

glEnd();

robolegleft();

robolegright();

roboeye1();

roboeye2();

glFlush();

}

void slide2()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_QUADS);

glColor3f(0,1,0);

glVertex2f(0,0);

glColor3f(0,1,0);

glVertex2f(550,0);

glColor3f(0,0,1);

glVertex2f(550,550);

glColor3f(1,0,1);

glVertex2f(0,550);

glEnd();

glColor3f(0,0,0);

setFont(GLUT\_BITMAP\_TIMES\_ROMAN\_24);

drawstring(100,370,0,"\*---------------------------\*\*\*---------------------------------------\*");

drawstring(200,340,0,"press 'b' to view the pump");

drawstring(200,310,0,"press 'c' to draw water from underground");

drawstring(200,280,0,"press 'd' to push water till mid of pump");

drawstring(200,250,0,"press 'e' to raise handle upwards");

drawstring(200,220,0,"press 'f' to push handle downwards");

drawstring(200,190,0,"press 'g' to view filling of water in bucket");

drawstring(200,160,0,"press 'h' to view automated pump");

drawstring(200,130,0,"press 'i' to view the types of energy used to run automated pump");

drawstring(100,110,0,"\*------------------------------\*\*\*--------------------------------------\*");

glFlush();

}

void triangle1()

{

glColor3f(1.0,0.0,0.0);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(240.0,365.0);

glVertex2f(140.0,180.0);

glVertex2f(206.66,180.0);

glEnd();

glFlush();

}

void triangle2()

{

glColor3f(0.0,0.0,1.0);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(245.0,365.0);

glVertex2f(206.66,180.0);

glVertex2f(273.32,180.0);

glEnd();

glFlush();

}

void triangle3()

{

glColor3f(0.0,1.0,0.0);

glBegin(GL\_TRIANGLE\_FAN);

glVertex2f(250.0,365.0);

glVertex2f(273.32,180.0);

glVertex2f(340.0,180.0);

glEnd();

glFlush();

}

void box1()

{

glColor3f(1.0,0.7,0.7);

glBegin(GL\_POLYGON);

glVertex2f(140.0,60.0);

glVertex2f(340.0,60.0);

glVertex2f(340.0,180.0);

glVertex2f(140.0,180.0);

glEnd();

glFlush();

}

void slide1()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_QUADS);

glColor3f(1,0,1);

glVertex2f(0,0);

glColor3f(0,1,1);

glVertex2f(550,0);

glColor3f(1,1,0);

glVertex2f(550,550);

glColor3f(1,1,0);

glVertex2f(0,550);

glEnd();

drawrobo();

Sleep(1000);

triangle1();

Sleep(1000);

triangle2();

Sleep(1000);

triangle3();

Sleep(1000);

box1();

Sleep(1000);

glColor3f(0,0,0);

setFont(GLUT\_BITMAP\_TIMES\_ROMAN\_24);

drawstring(150,160,0," AUTOMATED LIFT PUMP");

drawstring(150,140,0,"-------------BY-----------------");

drawstring(150,100,0,"Harshitha Lakshmi.S (4GW12CS029)");

drawstring(150,120,0,"Harshitha.D.K (4GW12CSO28)");

drawstring(160,80,0,"Guided by RAVIKUMAR V.G");

drawstring(400,40,0,"press 'a' to continue");

glFlush();

}

void slide3()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_QUADS);

glColor3f(1,0,0);

glVertex2f(0,0);

glColor3f(0,1,0);

glVertex2f(550,0);

glColor3f(1,0,0);

glVertex2f(550,550);

glColor3f(1,1,1);

glVertex2f(0,550);

glEnd();

drawpump();

handledown();

valveclose();

bricks();

waterslide1();

glFlush();

}

void slide4()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_QUADS);

glColor3f(1,1,0);

glVertex2f(0,0);

glColor3f(0,1,0);

glVertex2f(550,0);

glColor3f(1,0,1);

glVertex2f(550,550);

glColor3f(1,1,1);

glVertex2f(0,550);

glEnd();

drawpump();

handleup();

valveclose();

bricks();

waterslide2();

glFlush();

}

void slide5()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_QUADS);

glColor3f(1,0,0);

glVertex2f(0,0);

glColor3f(0,1,1);

glVertex2f(550,0);

glColor3f(0,1,0);

glVertex2f(550,550);

glColor3f(1,1,0);

glVertex2f(0,550);

glEnd();

drawpump();

handledown();

bricks();

waterslide3();

valveopen();

glFlush();

}

void slide6()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_QUADS);

glColor3f(1,0,1);

glVertex2f(0,0);

glColor3f(1,1,1);

glVertex2f(550,0);

glColor3f(1,1,0);

glVertex2f(550,550);

glColor3f(1,1,1);

glVertex2f(0,550);

glEnd();

drawpump();

waterslide4();

handleup();

valveclose();

bricks();

glFlush();

}

void slide7()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_QUADS);

glColor3f(1,0,1);

glVertex2f(0,0);

glColor3f(0,1,1);

glVertex2f(550,0);

glColor3f(1,1,0);

glVertex2f(550,550);

glColor3f(1,1,1);

glVertex2f(0,550);

glEnd();

drawpump();

waterslide5();

handledown();

valveopen();

bricks();

bucket();

waterbuckethalf();

Sleep(1000);

waterbucketfull();

glFlush();

}

void slide8()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_QUADS);

glColor3f(1,0,1);

glVertex2f(0,0);

glColor3f(0,1,1);

glVertex2f(550,0);

glColor3f(1,1,0);

glVertex2f(550,550);

glColor3f(1,1,1);

glVertex2f(0,550);

glEnd();

drawpump();

waterslide4();

waterslide5();

handledown();

valveopen();

bricks();

bucket();

glClear(GL\_COLOR\_BUFFER\_BIT);

Sleep(1000);

drawpump();

waterslide1();

bricks();

waterslide5();

handleup();

valveclose();

bucket();

waterbuckethalf();

Sleep(1000);

waterslide5();

waterbucketfull();

Sleep(1000);

clearwater();

Sleep(1000);

waterslide5();

waterbuckethalf();

Sleep(1000);

waterbucketfull();

glFlush();

}

void showcharging()

{

Sleep(1000);

rec1();

Sleep(1000);

rec2();

Sleep(1000);

rec3();

glFlush();

}

void solarcharging()

{

rec4();

Sleep(1000);

showcharging();

Sleep(1000);

clearcharger();

Sleep(1000);

showcharging();

Sleep(1000);

clearcharger();

Sleep(1000);

showcharging();

Sleep(1000);

clearcharger();

Sleep(1000);

showcharging();

glFlush();

}

void handleup1process()

{

valveopen1clear();

handledown1clear();

counterweight2clear();

counterweight1();

valveclose1();

handleup1();

glFlush();

}

void handledown1process()

{

valveclose1clear();

handleup1clear();

counterweight1clear();

counterweight2();

valveopen1();

handledown1();

glFlush();

}

void slide9()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

greenland();

sunrays();

sun();

solarpanel();

solarcharger();

battery();

outerbox();

pipe();

motor();

pulley1();

pulley2();

mud();

waterslide();

drawpump1();

valveclose1();

handledown1();

counterweight2();

bucket1();

handle1();

charging();

Sleep(1000);

rays1(1.0,0.5,0.0);

Sleep(1000);

rays2(1.0,0.5,0.0);

Sleep(1000);

rays3(1.0,0.5,0.0);

Sleep(1000);

rays4(1.0,0.5,0.0);

Sleep(1000);

rays5(1.0,0.5,0.0);

Sleep(1000);

rays6(1.0,0.5,0.0);

Sleep(1000);

solarcharging();

Sleep(1000);

waterslide21();

handleup1process();

Sleep(1000);

handledown1process();

waterslide31();

Sleep(1000);

handleup1process();

waterslide41();

Sleep(1000);

handledown1process();

waterslide51();

Sleep(1000);

waterbuckethalf1();

Sleep(1000);

handleup1process();

waterupdown1();

waterslide51();

Sleep(1000);

waterbucketfull1();

handle1();

Sleep(1000);

handleup1process();

waterslide51();

handle1();

Sleep(1000);

waterupdown1clear();

handledown1process();

waterslide41();

Sleep(1000);

handleup1process();

waterslide51();

handle1();

Sleep(1000);

waterupdown1clear();

handledown1process();

waterslide41();

Sleep(1000);

handleup1process();

waterslide51();

handle1();

Sleep(1000);

waterupdown1clear();

handledown1process();

waterslide41();

Sleep(1000);

handleup1process();

waterslide51();

handle1();

Sleep(1000);

waterupdown1clear();

handledown1process();

waterslide41();

Sleep(1000);

handleup1process();

waterslide51();

handle1();

glFlush();

}

void slide10()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glBegin(GL\_QUADS);

glColor3f(0,1,0);

glVertex2f(0,0);

glColor3f(0,0,0);

glVertex2f(550,0);

glColor3f(0,1,0);

glVertex2f(550,550);

glColor3f(1,1,1);

glVertex2f(0,550);

glEnd();

solarpanel();

battery();

motor1();

pump1();

setFont(GLUT\_BITMAP\_HELVETICA\_18);

glColor3f(0,0,0);

drawstring(20,220,0,"SOLAR ENERGY");

drawstring(120,220,0,"ELECTRICAL ENERGY");

drawstring(230,220,0,"MECHANICAL ENERGY");

drawstring(390,220,0,"AUTOMATED PUMP");

glColor3f(1,0,0.3);

setFont(GLUT\_BITMAP\_TIMES\_ROMAN\_24);

drawstring(150,400,0,"\*\*\*\*\*\*SAVE ENERGY , SAVE NATURE , USE SOLAR ENERGY\*\*\*\*\*\*");

glEnd();

glFlush();

}

void keyboard(unsigned char key,int x,int y)

{

switch(key)

{

case 'a':slide2();

break;

case 'b':slide3();

break;

case 'c':slide4();

break;

case 'd':slide5();

break;

case 'e':slide6();

break;

case 'f':slide7();

break;

case 'g':slide8();

break;

case 'h':slide9();

break;

case 'i':slide10();

break;

case 'q':exit(0);

break;

}

}

void myinit()

{

glClearColor(1.0,1.0,1.0,1.0);

glColor3f(1.0,0.0,0.0);

glPointSize(5.0);

glMatrixMode(GL\_PROJECTION);

gluOrtho2D(0.0,550.0,0.0,550.0);

}

void main(int argc,char \*\*argv)

{

glutInit(&argc,argv);

glutInitDisplayMode(GLUT\_SINGLE|GLUT\_RGB);

glutInitWindowSize(1360,700);

glutInitWindowPosition(0,0);

glutCreateWindow("lift pump");

glutKeyboardFunc(keyboard);

glutDisplayFunc(slide1);

myinit();

glutMainLoop();

}