#include<stdio.h>

#include<stdlib.h>

#include<GL/glut.h>

#include<math.h>

#include<string.h>

#include<time.h>

int x, y;

int i, count;

char t[2];

float px = 0.0, py = 175.0;

int flag, df = 10;

clock\_t start, end;

void point()

{

glColor3f(0.0, 0.0, 1.0);

glBegin(GL\_POINTS);

glVertex2f(px, py);

glEnd();

}

void point1()

{

glColor3f(.0, 1.0, 0.0);

glBegin(GL\_POINTS);

glVertex2f(0.0, 175.0);

glEnd();

}

void point2()

{

glColor3f(1.0, 0.0, .0);

glBegin(GL\_POINTS);

glVertex2f(176.0, 5.0);

glEnd();

}

void output(int x, int y, const char\* string)

{

int len, i;

glRasterPos2f(x, y);

len = (int)strlen(string);

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

{

glutBitmapCharacter(GLUT\_BITMAP\_TIMES\_ROMAN\_24, string[i]);

}

}

void drawstring(int x, int y, const char\* string, void\* font)

{

int len, i;

glRasterPos2f(x, y);

len = (int)strlen(string);

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

{

glutBitmapCharacter(font, string[i]);

}

}

void frontscreen(void)

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glLoadIdentity();

glColor3f(1, 1, 1);

drawstring(120, 5, " Press ENTER to go To next screen", GLUT\_BITMAP\_HELVETICA\_18);

drawstring(-45, 5, "Maximize window for better view", GLUT\_BITMAP\_HELVETICA\_12);

glColor3f(1, 1, 1);

output(22, 160, " KS SCHOOL OF ENGINEERING AND MANAGEMENT");

glColor3f(1, 1, 1);

output(10.0, 150, "DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING");

glColor3f(1, 0, 1);

output(60, 130, "A Mini Project On:-");

glColor3f(0, 1, 0.5);

output(38, 120, "\"PATH FINDING USING OPENGL\"");

glColor3f(1, 0, 1);

output(40, 100, "By :");

glBegin(GL\_LINES);

glVertex2f(40, 98);

glVertex2f(50, 98);

glEnd();

glColor3f(1, 0, 0);

output(40, 90, "ANIRUDH K N");

output(40, 80, "KARTHIKRAJ M N");

output(40, 80, "");

glColor3f(1, 0, 1);

output(40, 60, "Under the Guidence of :");

glBegin(GL\_LINES);

glVertex2f(40, 58);

glVertex2f(98, 58);

glEnd();

glColor3f(1, 0, 0);

output(40, 50, "SANDEEP H");

glColor3f(1, 0, 0);

output(72, 50, "");

glColor3f(1, 0, 0);

output(70, 40, "Asst. Prof. Dept. of CSE");

glColor3f(1, 0, 0);

output(40, 30, "SANDHYA A K");

glColor3f(1, 0, 0);

output(72, 30, "");

output(70, 20, "Asst. Prof. Dept. of CSE");

glFlush();

}

void winscreen()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glLoadIdentity();

glColor3f(0.0, 1.0, 0.0);

output(55, 120, "CONGRATS!!!");

glColor3f(1.0, 0.0, 1.0);

output(15, 100, "YOU HAVE SUCCEEDED IN FINDING OUT THE PATH");

output(35, 60, "\* PRESS ESC TO GO TO MAIN MENU");

output(35, 45, "\* PRESS 1 TO RESTART THE GAME");

glFlush();

}

void startscreen()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glColor3f(0.0, 1.0, 0.0);

output(25, 140, "WELCOME TO THE GAME FINDING THE PATH");

output(50, 100, "1.NEW GAME");

output(50, 80, "2.INSTRUCTIONS");

output(50, 60, "3.QUIT");

glFlush();

}

void instructions()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

glColor3f(1.0, 1.0, 0.0);

output(45, 140, "INSTRUCTIONS:");

glBegin(GL\_LINES);

glVertex2f(45, 138);

glVertex2f(90, 138);

glEnd();

glColor3f(0, 1, 0);

output(-20, 120, "\* TO MOVE THE POINT USE ARROW KEYS");

output(-20, 100, "\* FIND THE WAY TO MOVE INTO THE MAZE AND GET OUT");

output(-20, 80, "\* GREEN COLOURED POINT INDICATE THE POINT FROM WHERE YOU HAVE TO START");

output(-20, 60, "\* RED COLOURED POINT INDICATE THE POINT WHERE YOU HAVE TO REACH");

output(-20, 40, "\* YOU WILL HAVE TO HURRY AS YOU HAVE LIMITED TIME");

output(-20, 20, "\* PRESS ESC TO GO TO MAIN MENU");

glFlush();

}

void idle()

{

if (df == 1)

{

end = clock();

count = (end - start) / CLOCKS\_PER\_SEC;

if (count == 3600)

{

df = 4;

}

else

if ((count < 3600) && ((px >= 175 && px <= 182) && (py >= 0 && py <= 6)))

{

df = 5;

}

}

glutPostRedisplay();

}

void wall(GLfloat x1, GLfloat y1, GLfloat x2, GLfloat y2, GLfloat x3, GLfloat y3, GLfloat x4, GLfloat y4)

{

glBegin(GL\_POLYGON);

glVertex3f(x1, y1, 0);

glVertex3f(x2, y2, 0);

glVertex3f(x3, y3, 0);

glVertex3f(x4, y4, 0);

glEnd();

}

void SpecialKey(int key, int x, int y)

{

switch (key)

{

case GLUT\_KEY\_UP:

flag = 0;

if (py < 175)

if (!((px >= 168 && px <= 172) && (py >= 50 && py <= 50)))

if (!((px >= 138 && px <= 142) && (py >= 5 && py <= 5)))

if (!((px >= 148 && px <= 152) && (py >= 50 && py <= 50)))

if (!((px >= 132 && px <= 142) && (py >= 55 && py <= 55)))

if (!((px >= 138 && px <= 180) && (py >= 85 && py <= 85)))

if (!((px >= 108 && px <= 112) && (py >= 5 && py <= 5)))

if (!((px >= 88 && px <= 112) && (py >= 65 && py <= 65)))

if (!((px >= 108 && px <= 112) && (py >= 75 && py <= 75)))

if (!((px >= 112 && px <= 128) && (py >= 85 && py <= 85)))

if (!((px >= 168 && px <= 180) && (py >= 95 && py <= 95)))

if (!((px >= 98 && px <= 162) && (py >= 95 && py <= 95)))

if (!((px >= 128 && px <= 132) && (py >= 55 && py <= 55)))

if (!((px >= 92 && px <= 172) && (py >= 105 && py <= 105)))

if (!((px >= 88 && px <= 92) && (py >= 60 && py <= 60)))

if (!((px >= 78 && px <= 82) && (py >= 5 && py <= 5)))

if (!((px >= 68 && px <= 72) && (py >= 65 && py <= 65)))

if (!((px >= 22 && px <= 72) && (py >= 105 && py <= 105)))

if (!((px >= 28 && px <= 174) && (py >= 115 && py <= 115)))

if (!((px >= 146 && px <= 180) && (py >= 125 && py <= 135)))

if (!((px >= 72 && px <= 140) && (py >= 125 && py <= 125)))

if (!((px >= 28 && px <= 66) && (py >= 125 && py <= 125)))

if (!((px >= 143 && px <= 180) && (py >= 135 && py <= 135)))

if (!((px >= 18 && px <= 135) && (py >= 135 && py <= 135)))

if (!((px >= 18 && px <= 172) && (py >= 145 && py <= 145)))

if (!((px >= 8 && px <= 12) && (py >= 3 && py <= 158)))

if (!((px >= 8 && px <= 178) && (py >= 152 && py <= 165)))

if (!((px >= -4 && px <= 172) && (py >= 165 && py <= 172)))

py = py + 5;

glutPostRedisplay();

break;

case GLUT\_KEY\_DOWN:

flag = 0;

if (py > 5)

if (!((px >= 158 && px <= 162) && (py >= 85 && py <= 85)))

if (!((px >= 168 && px <= 172) && (py >= 50 && py <= 50)))

if (!((px >= 148 && px <= 152) && (py >= 50 && py <= 50)))

if (!((px >= 132 && px <= 142) && (py >= 65 && py <= 65)))

if (!((px >= 138 && px <= 180) && (py >= 95 && py <= 95)))

if (!((px >= 98 && px <= 102) && (py >= 65 && py <= 65)))

if (!((px >= 98 && px <= 102) && (py >= 95 && py <= 95)))

if (!((px >= 88 && px <= 112) && (py >= 75 && py <= 75)))

if (!((px >= 118 && px <= 122) && (py >= 85 && py <= 85)))

if (!((px >= 108 && px <= 112) && (py >= 95 && py <= 95)))

if (!((px >= 112 && px <= 128) && (py >= 95 && py <= 95)))

if (!((px >= 128 && px <= 132) && (py >= 55 && py <= 55)))

if (!((px >= 168 && px <= 180) && (py >= 105 && py <= 105)))

if (!((px >= 98 && px <= 162) && (py >= 105 && py <= 105)))

if (!((px >= 88 && px <= 92) && (py >= 60 && py <= 60)))

if (!((px >= 92 && px <= 172) && (py >= 115 && py <= 115)))

if (!((px >= 68 && px <= 72) && (py >= 65 && py <= 65)))

if (!((px >= 22 && px <= 72) && (py >= 115 && py <= 115)))

if (!((px >= 28 && px <= 174) && (py >= 125 && py <= 125)))

if (!((px >= 146 && px <= 180) && (py >= 135 && py <= 135)))

if (!((px >= 72 && px <= 140) && (py >= 135 && py <= 135)))

if (!((px >= 28 && px <= 66) && (py >= 135 && py <= 135)))

if (!((px >= 143 && px <= 180) && (py >= 145 && py <= 145)))

if (!((px >= 18 && px <= 135) && (py >= 145 && py <= 145)))

if (!((px >= 18 && px <= 172) && (py >= 155 && py <= 155)))

if (!((px >= 8 && px <= 178) && (py >= 165 && py <= 165)))

if (!((px >= -4 && px <= 172) && (py >= 168 && py <= 175)))

py = py - 5;

glutPostRedisplay();

break;

case GLUT\_KEY\_LEFT:

flag = 0;

if (px > 0)

if (!((px >= 5 && px <= 5) && (py >= 0 && py <= 170)))

if (!((px >= 165 && px <= 165) && (py >= 0 && py <= 82)))

if (!((px >= 175 && px <= 175) && (py >= 0 && py <= 47)))

if (!((px >= 175 && px <= 175) && (py >= 53 && py <= 88)))

if (!((px >= 145 && px <= 145) && (py >= 8 && py <= 58)))

if (!((px >= 155 && px <= 155) && (py >= 0 && py <= 47)))

if (!((px >= 155 && px <= 155) && (py >= 53 && py <= 88)))

if (!((px >= 145 && px <= 145) && (py >= 58 && py <= 88)))

if (!((px >= 115 && px <= 115) && (py >= 8 && py <= 68)))

if (!((px >= 105 && px <= 105) && (py >= 0 && py <= 62)))

if (!((px >= 105 && px <= 105) && (py >= 72 && py <= 92)))

if (!((px >= 115 && px <= 115) && (py >= 68 && py <= 72)))

if (!((px >= 125 && px <= 125) && (py >= 0 && py <= 82)))

if (!((px >= 115 && px <= 115) && (py >= 78 && py <= 92)))

if (!((px >= 135 && px <= 135) && (py >= 0 && py <= 52)))

if (!((px >= 165 && px <= 165) && (py >= 98 && py <= 102)))

if (!((px >= 135 && px <= 135) && (py >= 58 && py <= 108)))

if (!((px >= 95 && px <= 95) && (py >= 0 && py <= 57)))

if (!((px >= 175 && px <= 175) && (py >= 108 && py <= 112)))

if (!((px >= 95 && px <= 95) && (py >= 62 && py <= 118)))

if (!((px >= 85 && px <= 85) && (py >= 8 && py <= 118)))

if (!((px >= 75 && px <= 75) && (py >= 0 && py <= 62)))

if (!((px >= 75 && px <= 75) && (py >= 68 && py <= 112)))

if (!((px >= 50 && px <= 50) && (py >= 122 && py <= 128)))

if (!((px >= 175 && px <= 175) && (py >= 118 && py <= 122)))

if (!((px >= 145 && px <= 145) && (py >= 128 && py <= 132)))

if (!((px >= 70 && px <= 70) && (py >= 128 && py <= 132)))

if (!((px >= 140 && px <= 140) && (py >= 138 && py <= 142)))

if (!((px >= 175 && px <= 175) && (py >= 148 && py <= 152)))

if (!((px >= 25 && px <= 25) && (py >= 0 && py <= 152)))

if (!((px >= 15 && px <= 15) && (py >= 6 && py <= 158)))

if (!((px >= 175 && px <= 175) && (py >= 168 && py <= 172)))

px = px - 5;

glutPostRedisplay();

break;

case GLUT\_KEY\_RIGHT:

flag = 0;

if (px < 175)

if (!((px >= 155 && px <= 155) && (py >= 0 && py <= 82)))

if (!((px >= 165 && px <= 165) && (py >= 0 && py <= 47)))

if (!((px >= 165 && px <= 165) && (py >= 53 && py <= 88)))

if (!((px >= 135 && px <= 135) && (py >= 8 && py <= 58)))

if (!((px >= 145 && px <= 145) && (py >= 0 && py <= 47)))

if (!((px >= 145 && px <= 145) && (py >= 53 && py <= 88)))

if (!((px >= 135 && px <= 135) && (py >= 58 && py <= 92)))

if (!((px >= 105 && px <= 105) && (py >= 8 && py <= 68)))

if (!((px >= 95 && px <= 95) && (py >= 0 && py <= 62)))

if (!((px >= 95 && px <= 95) && (py >= 72 && py <= 92)))

if (!((px >= 115 && px <= 115) && (py >= 0 && py <= 82)))

if (!((px >= 105 && px <= 105) && (py >= 78 && py <= 92)))

if (!((px >= 125 && px <= 125) && (py >= 0 && py <= 52)))

if (!((px >= 165 && px <= 165) && (py >= 98 && py <= 102)))

if (!((px >= 95 && px <= 95) && (py >= 98 && py <= 102)))

if (!((px >= 125 && px <= 125) && (py >= 58 && py <= 108)))

if (!((px >= 85 && px <= 85) && (py >= 0 && py <= 57)))

if (!((px >= 85 && px <= 85) && (py >= 62 && py <= 118)))

if (!((px >= 75 && px <= 75) && (py >= 8 && py <= 118)))

if (!((px >= 65 && px <= 65) && (py >= 0 && py <= 62)))

if (!((px >= 65 && px <= 65) && (py >= 68 && py <= 108)))

if (!((px >= 30 && px <= 30) && (py >= 122 && py <= 128)))

if (!((px >= 25 && px <= 25) && (py >= 118 && py <= 122)))

if (!((px >= 143 && px <= 143) && (py >= 128 && py <= 132)))

if (!((px >= 69 && px <= 169) && (py >= 128 && py <= 132)))

if (!((px >= 25 && px <= 25) && (py >= 128 && py <= 132)))

if (!((px >= 140 && px <= 140) && (py >= 138 && py <= 142)))

//if (((px >= 180 && px <= 184) && (py >= 1 && py <= 5)))

if (!((px >= 15 && px <= 15) && (py >= 0 && py <= 152)))

if (!((px >= 5 && px <= 5) && (py >= 6 && py <= 158)))

if (!((px >= 5 && px <= 5) && (py >= 158 && py <= 162)))

px = px + 5;;

glutPostRedisplay();

break;

}

}

bool b=true;

void mouse(int btn, int state, int x, int y)

{

if (btn == GLUT\_LEFT\_BUTTON && state == GLUT\_DOWN)

b = !b;

}

void display()

{

glClear(GL\_COLOR\_BUFFER\_BIT);

if (df == 10)

frontscreen();

else if (df == 0)

startscreen();

else if (df == 1)

{

//line();

if (b)

{

glColor3f(1.0, 1.0, 1.0);

glClearColor(0.0, 0.0, 0.0, 0.0);

}

if (!b)

{

glColor3f(0.0, 0.0, 0.0);

glClearColor(1.0, 1.0, 1.0, 0.0);

}

wall(-4, -4, 0, -4, 0, 168, -4, 168);

wall(-4, 178, -4, 184, 184, 184, 184, 178);

wall(180, 178, 184, 178, 184, 8, 180, 8);

wall(180, 0, 180, -4, -4, -4, 0, 0);

wall(-4, 172, 172, 172, 172, 168, -4, 168);

wall(8, 162, 180, 162, 180, 158, 8, 158);

wall(8, 158, 8, 8, 12, 8, 12, 158);

wall(18, 152, 18, 0, 22, 0, 22, 152);

wall(18, 152, 172, 152, 172, 148, 18, 148);

wall(18, 142, 18, 138, 137, 138, 137, 142 );

wall(143, 142, 143, 138, 180, 138, 180, 142);

wall(28, 132, 28, 128, 67, 128, 67, 132);

wall(73, 132, 73, 128, 142, 128, 142, 132);

wall(148, 132, 148, 128, 180, 128, 180, 132);

wall(28, 122, 28, 118, 172, 118, 172, 122);

wall(36, 128, 36, 122, 40, 122, 40, 128);

wall(22, 112, 22, 108, 72, 108, 72, 112);

wall(68, 108, 68, 68, 72 , 68, 72, 108);

wall(68, 62, 68, 0, 72, 0, 72, 62);

wall(78, 118, 78, 8, 82, 8, 82, 118);

wall(88, 118, 88, 63, 92, 63, 92, 118);

wall(92, 112, 92, 108, 172, 108, 172, 112);

wall(88, 57, 88, 0, 92, 0, 92, 57);

wall(132, 108, 132, 58, 128, 58, 128, 108);

wall(98, 102, 98, 98, 162, 98, 162, 102);

wall(168, 102, 168, 98, 180, 98, 180, 102);

wall(128, 52, 128, 0, 132, 0, 132, 52);

wall(112, 92, 112, 88, 128, 88, 128, 92);

wall(118, 82, 118, 0, 122, 0, 122, 82);

wall(108, 92, 108, 78, 112, 78, 112, 92);

wall(88, 72, 88, 68, 112, 68, 112, 72);

wall(98, 92, 98, 72, 102, 72, 102, 92);

wall(98, 0, 98, 62, 102, 62, 102, 0);

wall(108, 68, 108, 8, 112, 8, 112, 68);

wall(138, 92, 138, 88, 180, 88, 180, 92);

wall(138, 88, 138, 58, 142, 58, 142, 88);

wall(132, 62, 132, 58, 142, 58, 142, 62);

wall(138, 58, 138, 8, 142, 8, 142, 58);

wall(148, 47, 148, 0, 152, 0, 152, 47);

wall(148, 88, 148, 53, 152, 53, 152, 88);

wall(158, 82, 158, 0, 162, 0, 162, 82);

wall(168, 88, 168, 53, 172, 53, 172, 88);

wall(168, 47, 168, 0, 172, 0, 172, 47);

glutPostRedisplay();

output(-21, 172, "---->");

output(184, 3, "---->");

glColor3f(1.0, 0.5, 0.0);

output(35, 80, "HOPE");

output(36, 70, "YOU ");

output(35, 60, "FIND ");

output(36, 50, "THE ");

output(35, 40, "WAY.....");

output(240, 160, t);

glutPostRedisplay();

point();

point1();

point2();

}

else if (df == 2)

instructions();

else if (df == 3)

{

exit(1);

}

else if (df == 4)

{

//timeover();

}

else if (df == 5)

{

winscreen();

}

glFlush();

}

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

{

if (df == 10 && key == 13)

df = 0;

else if ((df == 0 || df == 4 || df == 5) && key == '1')

{

df = 1;

glutPostRedisplay();

}

else if (df == 0 && key == '2')

df = 2;

else if (df == 0 && key == '3')

df = 3;

else if (key == 27)

{

df = 0;

}

if ((key == '0' || key == '1') && (df == 4 || df == 1))

{

px = 0.0;

py = 175.0;

}

glutPostRedisplay();

}

void myinit()

{

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

glPointSize(18.0);

glMatrixMode(GL\_MODELVIEW);

glClearColor(0.0, 0.0, 0.0, 0.0);

// glClearColor(1.0, 1.0, 1.0, 0.0);

glFlush();

glutSwapBuffers();

glutPostRedisplay();

}

void myreshape(int w, int h)

{

glViewport(0, 0, w, h);

glMatrixMode(GL\_PROJECTION);

glLoadIdentity();

if (w <= h)

gluOrtho2D(45.0, 135.0, -2.0 \* (GLfloat)h / (GLfloat)w, 180.0 \* (GLfloat)h / (GLfloat)w);

else

gluOrtho2D(-45.0 \* (GLfloat)w / (GLfloat)h, 135.0 \* (GLfloat)w / (GLfloat)h, -2.0, 180.0);

glMatrixMode(GL\_MODELVIEW);

glutPostRedisplay();

}

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

{

glutInit(&argc, argv);

glutInitDisplayMode(GLUT\_SINGLE | GLUT\_RGB);

glutInitWindowSize(600, 600);

glutCreateWindow("Pathfinding game");

glutReshapeFunc(myreshape);

glutDisplayFunc(display);

glutMouseFunc(mouse);

glutIdleFunc(idle);

glutSpecialFunc(SpecialKey);

glutKeyboardFunc(keyboard);

myinit();

glutMainLoop();

return 0;

}