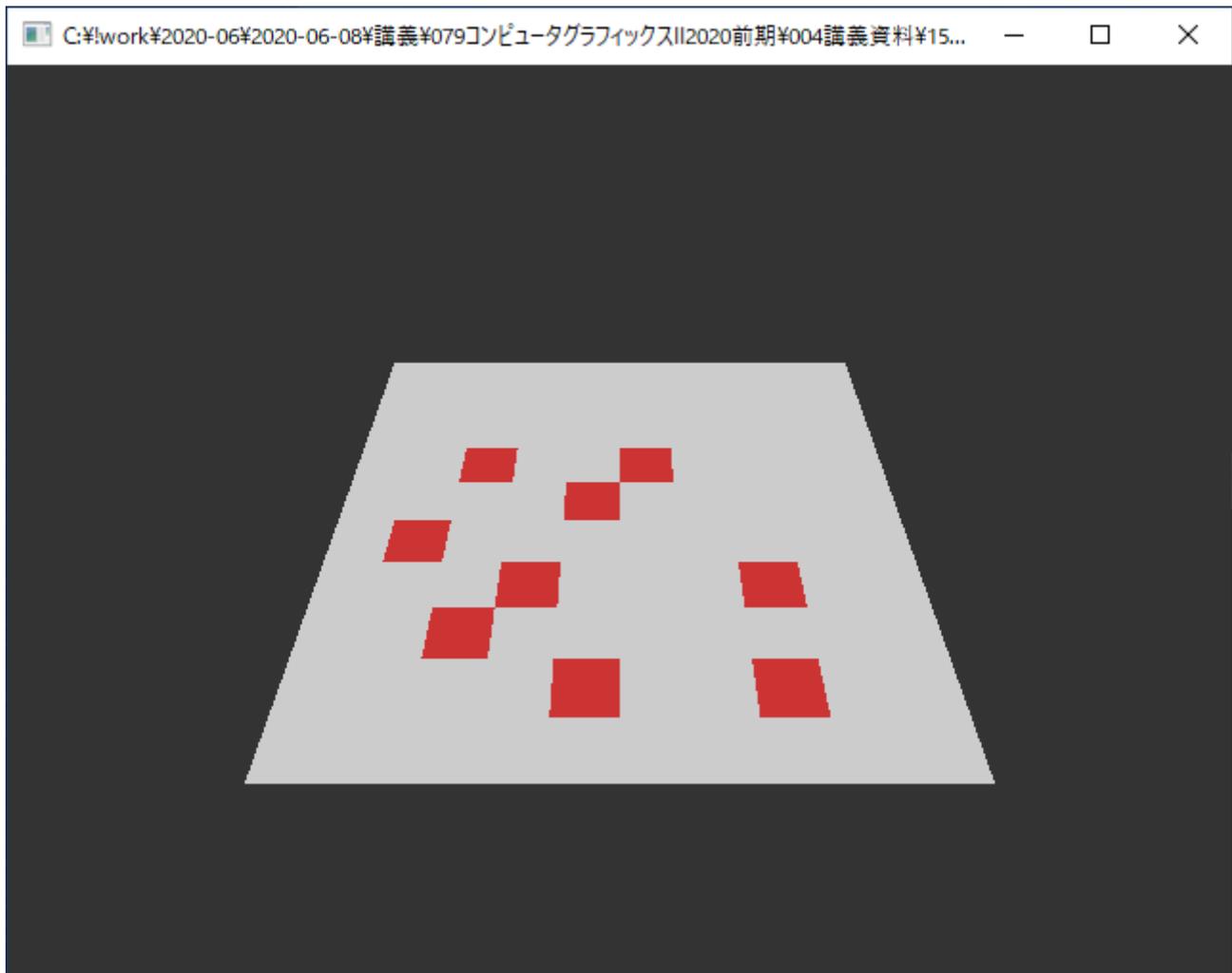


座標を取得

🖱️ マウスでクリックした点の3次元座標を取得する



サンプルソースコード

```

#include <stdlib.h>
#include <stdio.h>
#include <math.h>
#include <GL/glut.h>

int winw, winh;
int stage[10][10];

void myGround()
{
    int i, j;
    double x, y;

    glBegin(GL_QUADS);
    for (i = 0; i < 10; i++) {
        for (j = 0; j < 10; j++) {
            if (stage[i][j] == 0) glColor3d(0.8, 0.8, 0.8);
            else glColor3d(0.8, 0.2, 0.2);
            x = (double)j - 4.5;
            y = (double)(9 - i) - 4.5;
            glVertex3d(x - 0.5, y - 0.5, 0.0);
            glVertex3d(x + 0.5, y - 0.5, 0.0);
            glVertex3d(x + 0.5, y + 0.5, 0.0);
            glVertex3d(x - 0.5, y + 0.5, 0.0);
        }
    }
    glEnd();
}

void myDisplay()
{
    glClearColor(0.2f, 0.2f, 0.2f, 1.0f);
    glClear(GL_COLOR_BUFFER_BIT | GL_DEPTH_BUFFER_BIT);
    glEnable(GL_DEPTH_TEST);

    glMatrixMode(GL_PROJECTION);
    glLoadIdentity();
    gluPerspective(60.0, (double)winw / (double)winh, 0.1, 100.0);
    glMatrixMode(GL_MODELVIEW);
    glLoadIdentity();
    gluLookAt(0.0, -10.0, 10.0, 0.0, 0.0, 0.0, 0.0, 0.0, 1.0);

    myGround();

    glutSwapBuffers();
}

void myMouseFunc(int button, int state, int x, int y)
{
    float z;
    double px, py, pz;
    int ix, iy, iz;
    double model[16];
    double proj[16];
    int view[4];

    if (button == GLUT_LEFT_BUTTON && state == GLUT_DOWN) {
        glGetDoublev(GL_MODELVIEW_MATRIX, model);
        glGetDoublev(GL_PROJECTION_MATRIX, proj);
        glGetIntegerv(GL_VIEWPORT, view);
        glReadPixels(x, winh - y, 1, 1, GL_DEPTH_COMPONENT, GL_FLOAT, &z);
        gluUnProject(x, winh - y, z, model, proj, view, &px, &py, &pz);
        if (pz > -0.05 && pz < 0.05 && px > -5.05 && px < 5.05 && py > -5.05 && py < 5.05) {
            ix = (int)floor(px + 5.0);
            iy = (int)floor(py + 5.0);
            if (ix < 0) ix = 0;
            if (iy < 0) iy = 0;
            if (ix > 9) ix = 9;
            if (iy > 9) iy = 9;
            stage[9 - iy][ix] = 1;
        }
        glutPostRedisplay();
    }
}

```

サンプルソースコード

```
void myKeyboard(unsigned char key, int x, int y)
{
    if (key == 0x1B) exit(0);
}

void myReshape(int width, int height)
{
    winw = width;
    winh = height;
    glViewport(0, 0, winw, winh);
}

int main(int argc, char* argv[])
{
    int i, j;

    for (i = 0; i < 10; i++) {
        for (j = 0; j < 10; j++) {
            stage[i][j] = 0;
        }
    }

    glutInit(&argc, argv);
    glutInitDisplayMode(GLUT_RGBA | GLUT_DOUBLE | GLUT_DEPTH);
    glutInitWindowSize(640, 480);
    glutInitWindowPosition(0, 0);
    glutCreateWindow(argv[0]);
    glutKeyboardFunc(myKeyboard);
    glutMouseFunc(myMouseFunc);
    glutReshapeFunc(myReshape);
    glutDisplayFunc(myDisplay);
    glutMainLoop();
    return 0;
}
```