# Számítógépes grafika alapjai

## 1. Gyakorlat: Pontok rajzolása OpenGL-ben

Alakítsuk át a simple.c programot úgy, hogy három színes pontot rajzoljon ki fekete háttérrel!

simple.c

```
#include <GL/glut.h>

// Called to draw scene
void RenderScene(void)
      {
      // Clear the window with current clearing color
      glClear(GL_COLOR_BUFFER_BIT);



      // Flush drawing commands
      glFlush();
      }


// Setup the rendering state
void SetupRC(void)
    {
    // Set clear color to blue
    glClearColor(0.0f, 0.0f, 1.0f, 1.0f);


    }



// Main program entry point
int main(int argc, char* argv[])
    {
      glutInit(&argc, argv);
      glutInitDisplayMode(GLUT_SINGLE | GLUT_RGB);
      glutCreateWindow("Simple");
      glutDisplayFunc(RenderScene);

      SetupRC();

      glutMainLoop();

      return 0;
    }
```

points.c

```
#include <GL/glut.h>

void init() {
	// set matrix mode to PROJECTION mode
	glMatrixMode(GL_PROJECTION);
	glLoadIdentity();
	gluOrtho2D(0,100,0,100);
}
void drawPoints() {
	//delete buffers
	glClear(GL_COLOR_BUFFER_BIT);
	glBegin(GL_POINTS);
	glColor3f(1.0f, 0.0f, 0.0f); /* red */
	glVertex2i(10,10);
	glColor3f(0.0f, 1.0f, 0.0f); /* green */
	glVertex2i(50,80);
	glColor3f(0.0f, 0.0f, 1.0f); /* blue */
	glVertex2i(70,70);
	glEnd();
}
void keyboard(unsigned char key, int x, int y) {
	switch(key) {
	case 27:
		exit(0);
		break;
	}
}
// Called to draw scene
void RenderScene(void)  {
	// Clear the window with current clearing color
	glClear(GL_COLOR_BUFFER_BIT);

	drawPoints();

	// Flush drawing commands
	glFlush();
}

// Setup the rendering state
void SetupRC(void) {
    // Set clear color to black
    glClearColor(0.0f, 0.0f, 0.0f, 1.0f);
}

// Main program entry point
int main(int argc, char* argv[]) {
	glutInit(&argc, argv);
	glutInitDisplayMode(GLUT_SINGLE | GLUT_RGB);
	glutInitWindowSize(100,100);
	glutInitWindowPosition(20,20);

	glutCreateWindow("Points");
	SetupRC();

	init();
	glutDisplayFunc(RenderScene);
	glutKeyboardFunc(keyboard);

	glutMainLoop();

	return 0;
}
```