
D.19 GLSL FUNCTIONS

`GLuint glCreateProgram()`

creates an empty program object and returns an identifier for it.

`GLuint glCreateShader(GLenum type)`

creates an empty shader object of type `GL_VERTEX_SHADER` or `GL_FRAGMENT_SHADER` and returns an identifier for it.

`void glShaderSource(GLuint shader, GLsizei nstrings, const GLchar **strings, const GLint *lengths)`

identifies the source code for `shader` as coming from an array of `nstrings` strings of `lengths` characters. If the shader is a single null-terminated string then `nstrings` is 1 and `lengths` is `NULL`.

`void glCompileShader(GLuint shader)`

compiles shader object `shader`.

`void glAttachShader(GLuint program, GLuint shader)`

attaches shader object `shader` to program object `program`.

`void glLinkProgram(GLuint program)`

links together the application and shaders in program object `program`.

`GLint glGetAttribLocation(GLuint program, const GLchar *name)`

returns the index of the attribute name from the linked program object `name`.

`void glVertexAttrib[1234][sfd](GLuint index, TYPE value1, TYPE value2, ...)`

`void glVertexAttrib[123][sfd]v(GLuint index, TYPE *value)`

specifies the value of the vertex attribute with the specified index.

`GLint glGetUniformLocation(GLuint program, const GLchar *name)`

returns the index of uniform variable name from the linked program object `program`.

```

void glUniform1234[if](GLint index, TYPE value)
void glUniform1234[if]v(GLint index, GLsizei num, TYPE value)
void glUniformMatrix[234]f(GLint index, GLsizei num,
    GLboolean transpose, const GLfloat *value)

```

sets the value of a uniform variable, array, or matrix with the specified index. For the array and matrix, num is the number of elements to be changed.

```

void glGetProgram(GLuint program, GLenum pname, GLint *param)

```

returns in param the value of parameter pname for program object program. Parameters include link status GL_LINK_STATUS, which returns GL_TRUE or GL_FALSE and GL_INFO_LOG_LENGTH, which returns the number of characters in the information log.

```

void glGetShaderiv(GLuint shader, GLenum pname, GLint *param)

```

returns in param the value of parameter pname for shader object shader. Parameters include compile status GL_COMPILE_STATUS, which returns GL_TRUE or GL_FALSE and GL_INFO_LOG_LENGTH, which returns the number of characters in the information log.

```

void glGetProgramInfoLog(GLuint program, GLsizei maxL, GLsizei *len,
    GLchar *infoLog)

```

returns the info log string for program object program into the array infoLog of length maxL and the length of the string in len.

```

void glGetShaderInfoLog(GLuint program, GLsizei maxL, GLsizei *len,
    GLchar *infoLog)

```

returns the info log string for shader object program into the array infoLog of length maxL and the length of the string in len.
