NAME

xgl_transform_rotate – combines a Transform with a Rotation Transform

SYNOPSIS

```
#include <xgl/xgl.h>
void    xgl_transform_rotate (
                Xgl_trans           trans,
                double              angle,
                Xgl_axis            axis,
                Xgl_trans_update    update );
```

DESCRIPTION

Purpose

This operator combines a given Transform with a Rotation Transform constructed with the given parameters. The Rotation Transform can replace the given Transform, or it can be preconcatenated or postconcatenated with the given Transform.

Parameters

trans The Transform to be updated with a Rotation Transform. It must have been created previously with **xgl_object_create**(3)**.**

angle The angle of rotation in radians. For 2D Transforms, the angle is positive, in the counterclockwise sense, when the *x*-axis points right and the *y*-axis points up. The angle is positive, in the clockwise sense, when the *x*-axis points right and the *y*-axis points down. For 3D Transforms, the angle is positive in the right-handed sense.

axis Refers to the *x*, *y*, or *z*-axis, corresponding to the axis of rotation for 3D Transforms. XGL accepts the following values for *Xgl_axis*:

XGL_AXIS_X
: The axis of rotation is the *x*-axis

XGL_AXIS_Y
: The axis of rotation is the *y*-axis

XGL_AXIS_Z
: The axis of rotation is the *z*-axis

axis is ignored for 2D Transforms.

update Establishes the method of combining the Rotation Transform with the target Transform. XGL accepts the following values for *Xgl_trans_update*:

XGL_TRANS_REPLACE
: The Rotation Transform replaces the target Transform *trans.*

XGL_TRANS_PRECONCAT
: The Rotation Transform is preconcatenated to the target Transform *trans*, and the result is stored in *trans*. XGL treats coordinates as row vectors, which means that the matrix of the Rotation Transform on the left, multiplied by the matrix of *trans* on the right, replaces the matrix of *trans*.

XGL_TRANS_POSTCONCAT
: The Rotation Transform is postconcatenated to the target Transform

trans, and the result is stored in *trans*. XGL treats coordinates as row vectors, which means that the matrix of *trans* on the left, multiplied by the matrix of the Rotation Transform on the right, replaces the matrix of *trans*.

RETURN VALUE

Nothing is returned.

SEE ALSO

xgl_object_create(3)
XGL_TRANS_DATA_TYPE(3)
XGL_TRANS_DIMENSION(3)

NOTES

Integer Transforms only allow rotations by angles of *pi* / 2 and its multiples.