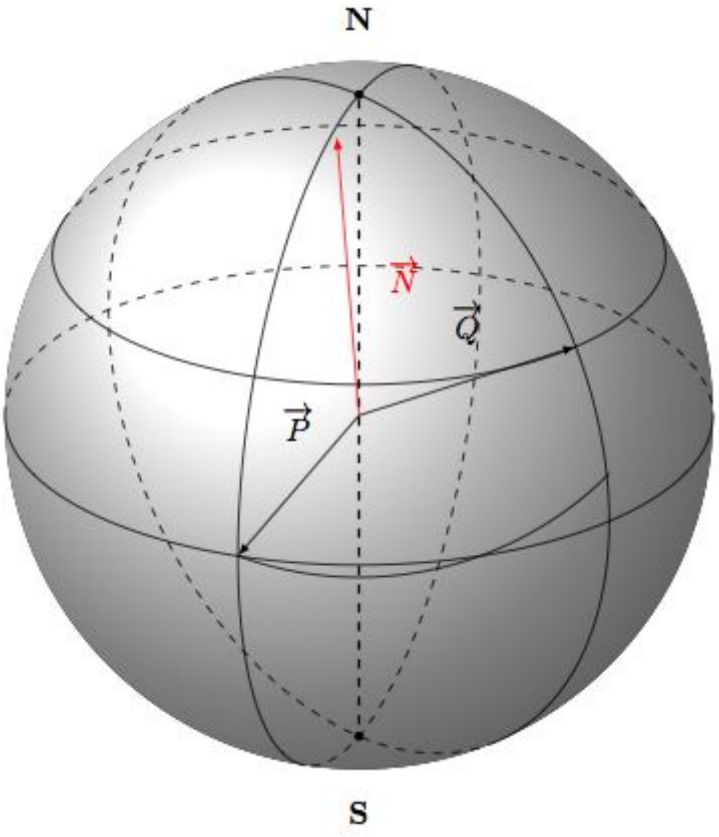
Arcball Documentation



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Math II

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Implemented functions

Mat2Quat

Parameters:
3x3 Normalized rotation matrix

Return values:
1x4 Normalized Quaternion

Description:
Creates a matrix with an equivalent rotation as the given quaternion.

Quat2Mat

Parameters:
A 1x4 Quaternion

Return values:
A 3x3 Normalized rotation matrix

Description:
Creates a quaternion with an equivalent rotation as the given rotation matrix.
Note that it accounts for non-normalized quaternions.

VecAng2rotMat

Parameters:
1x3 vector and a single angle

Return values:
A 3x3 Normalized rotation matrix

Description:
Creates a matrix with an equivalent rotation as the given vector + angle. It accounts for non-normalized vectors.

eAngles2rotM

Parameters:
1x3 vector containing 3 rotation angles

Return values:
A 3x3 Normalized rotation matrix

Description:
Creates a matrix with an equivalent rotation as the given euler angles.

rotM2eAngles

Parameters:
A 3x3 Normalized rotation matrix

Return values:
1x3 vector containing 3 rotation angles

Description:
Creates an array of euler angles with an equivalent rotation as the given rotation matrix.

rotMat2Eaa

Parameters:
A 3x3 Normalized rotation matrix

Return values:
1x3 vector containing the euler axis and a single angle

Description:
Creates euler axis angles with an equivalent rotation as the given rotation matrix.

rotVec2Mat

Parameters:
1x3 rotation vector

Return values:
A 3x3 Normalized rotation matrix

Description:
Creates a matrix with an equivalent rotation as the given rotation vector.

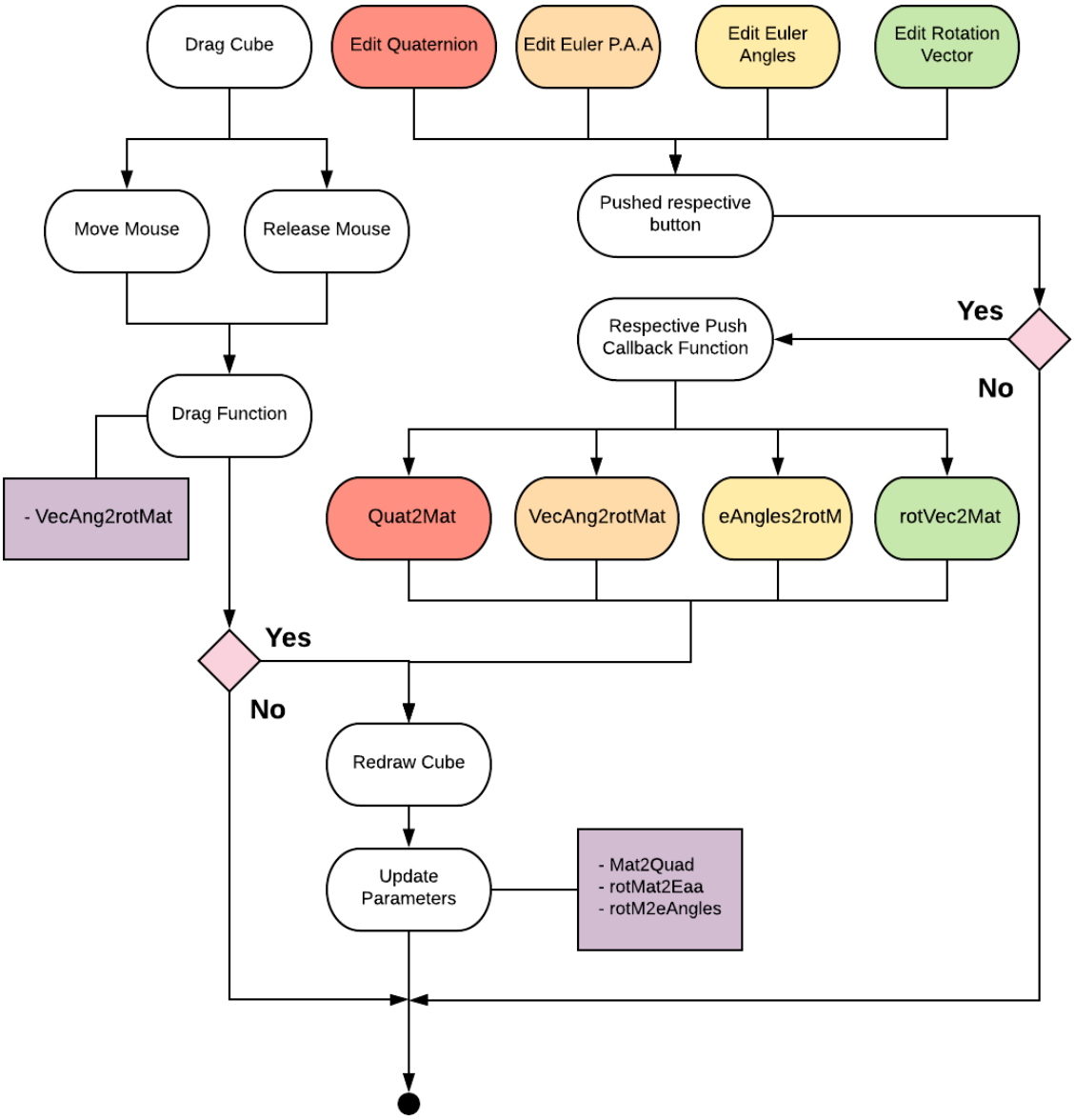
Drag

Parameters:
Handles

Return values:
A 3x3 Normalized rotation matrix and a flag

Description:
Creates a rotation matrix based on the mouse click and drag.
It returns a flag indicating whether it is being dragged outside of the window (0) or inside (1).

Diagram



Video demonstration

https://www.youtube.com/watch?v=cSGSQVZA0gc&