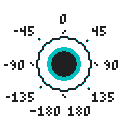
miningBelt\_RotationMath

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-Here is the basic rotation format found on objects in miningBelt



-These numbers are stored as (rotation / -180).

-rotation.z comes out as floating point numbers between 1.0 and 0.0:

-135 = 0.75 or -135 / -180 = 0.75

135 = -0.75 or 135 / -180 = -0.75

-45 = 0.25 or -45 / -180 = 0.25

90 = -0.5 or 90 / -180 = -0.5

-Trying to find a speed modifier for the bullets because:

-If bullets are going the same direction as player direction bullets need speed + player speed

-If bullets are going 180 away from player direction bullets need speed – player speed

-If bullets are going 90 away from player direction bullets just need speed

-When player is gaining movement that rotation will be stored as a float.

-Bullet speed needs to be the same for individual bullets, set at instantiate.

-Bullet rotation will be mathed with last forward player rotation for relativeSpeed

-If player thrust = 45 or -0.25 and bullets are going -135 or 0.75 relativeSpeed = -1

-If player thrust = -90 or 0.5 and bullets are going 0 or 0 relativeSpeed = 0

-If player thrust = 135 or -0.75 and bullets are going 135 or -0.75 relativeSpeed = 1

-If distance between player rotation and bullet rotation < .5

-relativeSpeed = floats between 1 and 0

-If distance between player rotation and bullet rotation > .5

-relativeSpeed = floats between 0 and -1

Abs(playerRotation – bulletRotation)) gives an accurate modifier from 0 to 1 if rotation differences are < 1.

Abs(1 – (playerRotation – bulletRotation)) gives an accurate modifier from 0 to 1 if rotation differences are > 1.

-This works to an extent:

-When player is flying forward and bullets are shooting forward the bullets have (1 \* playerSpeed) + bulletSpeed.

-When player is flying forward and bullets are flying backward the bullets have (0 \* playerSpeed) + bulletSpeed.

-I need bullets to be flying backwards (-1 \* playerSpeed) + bulletSpeed when bullets are going away from playerDirection.