

Fishies

Programming for Entertainment Systems: Coursework 1 Documentation



General notes:

The movement controls of the fish are as follows:

Forward and backwards motion is handled by the Up and Down arrow keys.

Left and right motion is handled by the Left and Right arrow keys.

Tilting up and tilting down is handled by the Spacebar and Backspace keys.

I have used Microsoft Visual Studio 2008 (version 9) and DirectX 9 to produce this work.

All the models and graphics were produced by me and these as well as the general motion were based on a real fish that lives in a tank in my room.

The weeds billboards are based on a Microsoft billboard demo (available in SDKs until around 2003) and I haven't wasted time renaming all the functions from 'tree' to 'weed'. Flat weed DDS files are loaded and randomly placed in the background to break the monotone colour in the absence of a skybox.

Knowing what I know after producing this, I would definitely go ahead with using the newer versions of DirectX based on the blank simple sample from the SDKs. I would also have liked to make use of a skybox mesh and terrain, and possibly use particle systems as well. And of course I would have liked to have had free camera movement and tilt the fish correctly.

The Program

The direction and velocity of the fish are handled in the `frameMove()` function whereby the fish can rotate and accelerate to a final maximum speed. By separating the fish's actual speed and the input power, there is the formation of simple physics since you cannot go flat out in one direction and then suddenly stop and go backwards, an equal amount of force in the other direction needs to be achieved first. Of course, there is a continual natural water resistance to slow the fish down.

As per the Coursework Skeleton, the actual transformation matrices are handled in the `Render()` function. Transformation of the flapping motion is handled by minimum and maximum extension points as constants, and a series of statements to determine which direction the movement should be in. As with real fins, they are slower pushing through the water and faster returning to the 'start of push' position.

The sound and billboards are initialised along with the other meshes within `InitDeviceObjects()`, however the trees are also initially set up in `OneTimeSceneInit()`.