

Tech Demo - User Manual

Features

The Tech Demo has many features, these include:

1. Terrain generation using a Height Map, this can be altered to create smoother terrain but at the cost of frames.
2. The Player/Camera collides with the terrain moving up and down with the terrain.
3. We have added a skybox to the demo to give it a better feeling and look.
4. The demo includes lighting and texturing which is controlled by shades (vertex and fragment), this is pixel lighting and includes ambient, diffuse, specular, emission and material colour.
5. The Demo uses a first person free floating camera which moves with the mouse and changes the view accordingly.
6. We added (colour) Picking to the demo so we could determine if and which model has been click by the player/camera, we then take a pointer to the model and manipulate the translation and rotation of the particular model.
7. One of the biggest things in the demo are Procedural Trees, this trees are generated by drawing one line, then changing the rotation (pitch, yaw) and the translation of the line then drawing it again. We used this technique to generate a list (vector) of parts which have children and parents, these parts would then be drawn to generate the tree.

Controls

The travel around the scene Move the Mouse to change the direction of travel and press one of four keys, W – forwards, S – backwards, A – left, D – right.

With the Mouse Cursor over a Model (other than the trees) click once to select that model. Then use the keys W, S, A, D, Q, E to Translate the model, press Z to switch to Rotation mode and use the keys W, S, A, D, Q, E to Rotate.

You can also press X to refresh the procedural trees and redraw them.

Known Bugs

- The demo will crash when you go off of the Terrain at a particular side due to a vector out of bounds.
- The camera isn't as stable as we would like but it is sufficient for the demo.
- After a while the demo could crash randomly, we believe this is due to the procedural trees drawing, however we are not sure.