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New Features

This version of WCVT2POV fixes some problems reported by Dan Richardson. He noticed that WCVT2POV didn't generate smooth triangles correctly for POVRAY. I believe this version fixes those problems.

I also enabled Backface Culling which is available via the "File|Preferences|View" menu. Backface culling is an easy way to remove hidden surfaces. It also significally reduces the time it takes to draw an object. However it is dependent upon the normal for the polygon point the correct direction (which is out from the model). Some models generate "correct" normals some do not. If the result of Backface Culling looks funny you might try toggling the check box labels "Normal Calculation Direction" this should invert the normals.

I added the support for named groups in the RAW format. Dan Richardson and some other folks pointed out the Steve Anger has defined a version of the RAW format the defines named groups and materials. Currently I only support named groups.

Since some tools support named groups in RAW files and some do not I've added a selection to turn on or off name groups when outputting RAW files. You will find this feature is selectable in "File|Preferences|Output". The default value is to output groups name as part of RAW files.

Please keep those cards and letters coming. I have some seriously cool stuff planned for WCVT2POV V3.0. which should be out around Christmas time. I also plan to release a POVRAY texture editor which shows you what a POV texture will look like. Expect an initial version around the end of October and a seriously cool version around Christmas.

Cheers

Keith

Menus & ToolBars

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File|New Menu Item

The File|New command clears the current document.

File|Open... Menu Item

Opens an existing 3d model in one of several formats into the document window.   Several 3d file formats are supported. These include Wavefront (*.obj), Raw Triangle (*.raw), Neutral File format (*.nff), Tpoly File Format (*.tpo), AutoCad 3d files (*.dxf), and AOFF file formats (*.geo) files.

File|Save Menu Item

Saves the currently selected file, in its original format.

File|Save As... Menu Item

Save the currently selected files in the file format selected. To select new file format, make the suffix of you chosen file one of the follow *filename*.dxf for Autocad 3d files, *filename*.obj for Wavefront 3d files, *filename*.tpo for tpoly files, *filename*.raw for raw triangle files, *filename*.nff for neutral file format, and *filename*.geo for AOFF files.

Object|Zoom|In Menu Item

Redisplays the current 3d object 25% larger. This command does not scale the data in the underlying object. It only effects the current display zoom factor.

Object|Zoom|Out Menu Item

Redisplays the current 3d object 25% smaller. This command does not scale the data in the underlying object. It only effects the current display zoom factor.

Object|Rotate... Menu Item

This menu item brings up the rotate dialog box. This allows the selection of   rotation values (in degrees) to be used in rotating the current 3d object.

The Rotate X   entry, rotates the object around the X axis. The x axis runs horizontally across the screen with + to the right and - to the left   of the center of the display.

The Rotate Y entry, rotates the object around the Y axis. The Y axis runs vertically up and down the screen with + to the top and - to the bottom of the center of the display.

The Rotate Y entry, rotates the object around the Z axis. The Z axis runs into and out of the display and is centered slightly behind the screen. The + values are behind the screen (or away from you)   and the -values are in front of the screen (or toward you).

Object|Mirror|X Axis Menu Item

The Mirror X command flips the data in the object along the X axis.

Object|Mirror|Y Axis Menu Item

The Mirror Y command flips the data in the object along the Y axis.

Object|Mirror|Z Axis Menu Item

The Mirror Z command flips the data in the object along the Z axis.

Open A 3d Model File

WCVT2POV support several different types of 3d model files. This version supports the following formats:

Wavefront (*.obj) File
Neutral File Format (*.nff)
RAW (*.raw) File Format
TPoly (*.tpo) File Format
AutoCad (*.dxf) Files
AOFF (*.geo) File Format

To open a file you simply press the open folder icon on the toolbar, or select the menu item "File|Open...". To select the format you can select the file filter combo box in the lower left portion of the open box, then select the file of that type you'd like to open. The 3d file should then be read in and displayed in the main window of the application.

Save A POVRay Scene

WCVT2POV allows POVRay files to be saved just like any other exportable file type. You simply select the "File|Save As..." menu selection. The Save As dialog box will appear. The default output type is the POVRay V2.2 file format. Simply type in the name you'd like the POVRay file to have and then save it.

Define a Floor and a Sky for POVRay Files.

WCVT2POV is intended to allow a 3d model to be quickly and simply converted into a POVRay V2.2 file. Most models, to be viewed correctly, need to have a floor and a sky. WCVT2POV allows several types of floors and skies to be selected. Simply use the floor or sky button on the tool bar. You have the choice of "No Sky", "Blue Sky", "Lightning Sky", and "Star Field".

When you select Floor texture you have the choice of: "No Floor", "BW Checker", "Jade", "White Marble", "Oak Wood", and "Water". The offset is intended to allow you to select the position of the floor. By default the offset is at the base of the current 3d object. Since objects are unitized when they are read in, the offset values are always between -1 and 0.

Acknowledgments

I'd like to thank Richard Dorman (richard@concave.cs.wits.ac.za) for his DXF-POV translator. This is the basis for my DXF reader. His reader is one of the easier freely available version of a DXF reader to understand and modify.

I'd also like to thank Steve Anger for his great tools (raw23ds, 3ds2pov and others). I used his definition of the RAW format for my reader and writer. I also hope to use pieces of his 3ds2pov translator for my next major release.

I wrote all other code, with help from a textbook or two. I also peeked at the source to a few other freely available file translators, but decided to "roll my own" rather than reuse the code. I'd like to thanks those folks too, unfortunately I don't remember which translators I peeked at. So I'd like to give a blanket thanks to all those folks who have freely donated 3d file translators, your effort is much appreciated.

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Human Comprehensible Description

It is my intention to produce high quality, easy to used, freely distributable software. The reality is that all software has bugs. I have tried my best, given my limited resources as a 3d hobbyist, to ensure that all serious problems have been removed. However, all freeware should be used carefully, especially when converting important files. Please make sure to backup all important file before they are converted using the program.

Of course, I assume no liability for loss of data, or subsequent loss of profits. You are using this software at your own risk.

Wavefront (*.obj) Files

Wavefront *.obj files are ASCII files that represent a 3d model as a hierarchical set of groups. Each group is composed of polygons which are separated into vertices and faces.

WCVT2POV can both import and export this format.

There are a large number of freely available Wavefront *.obj files. Look on the anonymous ftp site avalon.chinalake.navy.mil under pub/objects/obj for a large variety of *.obj files.

Neutral File Format (*.nff)

There are currently two (and probably more) dialects of Neutral File Format. This format was described in that late 80's and is intended to be a minimal file format for raytracers. It includes light sources, cameras, polygons, and some primitive shapes. An extended version of *.nff has been defined which is calls *.enff or Extended Neutral File Format. WCVT2POV only support *.nff files.

WCVT2POV can both import and export this format.

Neutral file format files can be found on the anonymous ftp site avalon.chinalake.navy.mil in /pub/objects/nff.

AutoCad (*.dxf) Files

DXF files are typically an ASCII format CAD file emitted from Autocad and several other CAD programs and tools. It is intended to be an interchange format for CAD program.

WCVT2POV can import a subset of this format and can export this format (as 3DFACES).

In reality, DXF is a kitchen sink containing both 2d and 3d elements. WCVT2POV only supports a subset of the 3d elements. This includes 3DFACES, and 3d poly-meshes.

RAW (*.raw) File Format

The RAW file format is imported and output from many interesting tools. The shareware modeller GUM can import RAW directly. RAW is a fairly primitive format that only supports the description of triangles. No color, or texture information is supported.

WCVT2POV can both import and export this format.

Check out the anonymous ftp site uniwa.uwa.edu.au [130.95.128.1], or avalon.chinalake.navy.mil for tools that utilize the RAW format.

TPoly (*.tpo) File Format

This format is a slight variation of the RAW file format. There are several interesting TPOLY files on the anonymous ftp site avalon.chinalake.navy.mil.

AOFF (*.geo) File Format

This is another polygon file format that is found on the ftp site avalon.chinalake.navy.mil. There are several classic 3d models in this format including the Utah teapot, and VW bug available on chinalake.

Color & Textures Dialog

The Color & Texture Dialog allows groups of polygons in the 3d object to have individual colors, textures, and smoothing properties to be assigned to them. The Group Name list contains the groups to available in the 3d object. By selecting a group in the list, you may change several properties of that group such as color, texture, and smoothing.

Smooth Group

Smooth Group

This check box selects that vertex normals will be emitted with the 3d polygons in this object. Currently only the Neutral File Format (*.nff), and POVRay (*.pov, *.inc) file outputters can emit vertex normals.

Vertex normals allow rendered images to be smoothed. This means that images rendered using this option will normally not show lines between polygons. This mode will significantly increase the size of the output file.

Floor

Use this command to select the floor to be emitted in a POVRay V2.2 file, when the file is outputted. The possible selections are: No Floor, Black & White Checker, Jade, White Marble, Oak Wood, and Water. The offset is the depth with which the floor is placed. By default, the offset is the base of the current 3d object. Since objects are normalized to have a maximum distance from (0,0,0) of 1.0, the default value is typically between -1.0 and 0.0.

Sky

Use this command to select the type of sky to be emitted in a POVRay V2.2 file, when the file is outputted. The possible selections are: No Sky, Blue Sky, Lightning Sky and Star Field. No Sky, is a black sky, Blue Sky is a blue sky with wispy clouds, Lightning Sky is a sky with what look like lightning bolts, and Star Field is a night sky with stars.

Print command

Use this command to print a document.   This command presents a Print Dialog Box, where you may specify the range of pages to be printed, the number of copies, the destination printer, and other printer setup options.

Shortcuts

Toolbar:
Keys: CTRL+P

About command (Help menu)

Use this command to display the copyright notice and version number of your copy of WCVT2POV.

Context Help command

Use the Context Help command to obtain help on some portion of WCVT2POV.   When you choose the Toolbar's Context Help button, the mouse pointer will change to an arrow and question mark.   Then click somewhere in the WCVT2POV window, such as another Toolbar button.   The Help topic will be shown for the item you clicked.

Shortcut
     Keys: SHIFT+F1