pyplyslice

Helper Utilities for Slicing PLY Objects at Specific Height(s)

Installation

This project utilizes `poetry` for dependency & environment management. Clone or download this repository to your local machine and create a new environment:

```
$ cd <project_dir>
$ poetry install
```

Though it's recommended to utilize `poetry`, the project may also be installed via `pip`:

```
$ cd <project_dir>
$ pip install .
```

Usage

Once installed, the `pyplyslice` CLI can be invoked directly from the command line:

```
$ pyplyslice <inputs go here>
```

The `pyplyslice` CLI can also be invoked from the root of this repository using Python:

```
$ python ./pyplyslice/ui.py <inputs go here>
```

Helper Jupyter Notebooks are also provided in the root of the repository to handle basic tasks.

`pyplyslice single`

Slice the provided scan file at the specified slice height & output to CSV.

Input Parameters

Parameter	Description	Type	Default
`--scan-filepath`	Path to PLY file to slice	String	GUI Prompt
`--slice-z`	Z', height above the XY plane to take the slice	Numeric	CLI Prompt

`pyplyslice batch`

Batch process all scans in the specified directory using the slice heights spreadsheet key.

Input Parameters

Parameter	Description	Type	Default
`--scan-dir`	Path to directory of PLY files to slice	String	GUI Prompt
`--key_spreadsheet`	Path to excel spreadsheet containing FileName and corresponding Z' columns	String	GUI Prompt
`--recurse / --no-recurse`	Recurse through child directories & process all PLY files[1]	Bool	`False`

Notes:

1. When a directory of scans is provided for scaling, to simplify path case-sensitivity considerations for discovery of scan files on operating systems that are not Windows, file extensions are assumed to always be lowercase (e.g. `.ply`).

Examples

```
$ pyplyslice batch --scan-dir "./sample_dir" --key-spreadsheet "./sample_dir/La
Processing Complete ... Sliced 82 of 82 PLY files
```

```
$ pyplyslice batch --scan-dir "./sample_dir"
# GUI will pop up to select key spreadsheet
Processing Complete ... Sliced 82 of 82 PLY files
```

```
$ pyplyslice single --scan-filepath "./sample_dir/some_scan12345-PX-123.edt.123
Slicing complete ... sliced 'some_scan12345-PX-123.edt.123k' at Z' = 25.600
```

```
$ pyplyslice single --scan-filepath "./sample_dir/some_scan12345-PX-123.edt.123
Enter slice height: 25.6
Slicing complete ... sliced 'some_scan12345-PX-123.edt.123k' at Z' = 25.600
```