obj-ply-scaler

Quick scaling of OBJ and PLY files.

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 .
```

Alternatively, prebuilt binaries for each release are provided at https://github.com/sco1/obj-ply-scaler/releases

Usage

The `obj-py-scaler` CLI can be invoked using Python:

```
$ python scaler.py
```

Or, if a prebuilt binary is present, this may be called directly

```
$ scaler.exe
```

When an `*.obj` or `*.ply` file is discovered it is parsed & scaled according to the provided incoming & outgoing units of measurement. The outgoing unit of measurement is added as a comment to the scan file's header & appended to the output scan file name. (e.g. `some_scan.ply` becomes `some_scan_mm.ply`)

Input Parameters

Parameter	Description	Default
`--filepath`	Path to scan file or directory of scans to scale[1]	Current Directory
`-i,--in-unit`	Incoming unit of measurement[2]	meters
`-o, --out-unit`	Outgoing unit of measurement[2]	millimeters

Parameter	Description	Default
`-r, --recurse / --no-recurse`	Recurse through child directories & process all scans.	`--no-recurse`
`-s, --skip`	Optionally skip scaling of either *.PLY or *.OBJ files	None

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. `.obj` or `.ply`). Other file extension cases will not be discovered for scaling.
2. Unit parsing is provided by `pint` (docs). Supported unit definitions can be found here

Examples

```
$ python scaler.py --filepath some_path/01234-some_scan.ply
Scaling from 'm' to 'mm' (Factor: 1000.0)
Discovered 1 scan(s)

Scaled: some_path/01234-some_scan.ply
```

```
$ python scaler.py --filepath ./scan_files/
Discovered 4 scan(s)
Scaling from 'm' to 'mm' (Factor: 1000.0) ...

Scaled: scan_files/01234-some_scan.obj
Scaled: scan_files/01235-some_scan.obj
Scaled: scan_files/01234-some_scan.ply
Scaled: scan_files/01235-some_scan.ply
```

```
$ python scaler.py --filepath ./scan_files/ --skip OBJ
Discovered 2 scan(s)
Scaling from 'm' to 'mm' (Factor: 1000.0) ...

Scaled: scan_files/01234-some_scan.ply
Scaled: scan_files/01235-some_scan.ply
```

```
$ python scaler.py --filepath ./scan_files/ -i m -o fermi
Scaling from 'm' to 'fermi' (Factor: 1e+15)
Discovered 4 scan(s)

Scaled: scan_files/01234-some_scan.obj
Scaled: scan_files/01235-some_scan.obj
Scaled: scan_files/01234-some_scan.ply
Scaled: scan_files/01235-some_scan.ply
```