Assignment 1 (Camera Calibration) Python 3.7.x

This project contains a python code which is used to perform calibration of a camera using an input image provided with the project. A report is also included which explains the calculation behind the code. The code is well commented and contains the following functions:

- **normalise**: Function that performs homogenization and normarlisation and return T and U which will be used for denormalisation
- **denormalise**: Function to perform denormalisation on projection matrix. It takes T and U as input
- **DLT**: Function to perform DLT on normalised coordinate to return normalised Projection matrix
- **intrinsic**: Function to calculate intrinsic parameters simple formulae used mentioned in the report
- **extrinsic**: Function to calculate intrinsic parameters simple formulae used mentioned in the report
- **ResizeWithAspectRatio**: Function used to resize the image window

Installation

Our project use two python libraries: - **numpy**: For performing matrix caluculations - **open cv**: For displaying image and taking input from user

```
$ pip install opencv-python-headless
$ pip install numpy
```

To run the code

```
$ python3 assignment.py
```

References

[1] https://stackoverflow.com/questions/35180764/opencv-python-image-too-big-to-display [2] https://www.geeksforgeeks.org/displaying-the-coordinates-of-the-points-clicked-on-the-image-using-python-opencv/

Contributers

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