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                                                3D Reconstruction with Single View
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Aim:
This tool helps with marking the parallel line along each direction to find the vanishing points. After that to mark the reference
points in each of the reference directions (usually x,y,z axis). Once it has the vanishing points and the reference points, it can
calculate the Projection matrix (P) and then calculate the 3 views and store them as PNG file.

Notes on use:
It is important that you follow these steps as is. There might be bugs in the UI. Feel free to correct them and/or contact me in this regard.

Step-by-step:
1. Open the file. (File-->Open)
2. You may zoom in/out of image (File-->Zoom In/Out)
3. Mark parallel lines along axis (Single View Metrology-->Markings-->X-direction)
4. Similarly also mark for other directions Y and Z. Need to mark atleast 2 parallel lines along each direction.
5. After having marked all the desired parallel lines, do (Single View Metrology-->Markings-->Deactivate All Directions).
6. Then mark reference origin (Single View Metrology-->Markings-->World Origin).
7. Then mark reference point along X-axis (-->Markings-->Reference Point Along X).
8. As soon as you mark the reference along X, you will be prompted to input the reference distance (in pixels) as in the real world.
9. Similarly do 8. for Y, Z direction.
10. Click (-->Markings-->Disable Marking Reference Points).
11. Then click (Single View Metrology-->Calculate Projection Matrix).
12. Then click (Single View Metrology-->Create Texture Maps) to compute the texture mpas for XY, YZ, XZ planes and write them as images in same directory.

It is also possible to store vanishing point & reference points (and their distances) on files. Click (Single View Metrology-->Store).

You can also load vanishing points from file. (Single View Metrology-->Load). Note that file should be in exact format as described in sample file.
No format verrifying happens and may cause problems.

Other Info:
The language of this software is C++. The entire software is built using the Qt-creator on Ubuntu 12.04. GUI uses the Qt libraries.
Image processing is done using OpenCV 2.3. C++ STL libraries is used for the priority Queue. QMake & Makefiles is used for built configuration.
The software is developed and tested on Ubuntu 12.04. However, Qt being cross platform, the entire code is possible to be executed on Windows
without changes to source-code. If you are deploying it on Windows, be sure to have OpenCV 2.3 (or above) working with MinGW. If you do get this
working on Windows do let me know, I would be happy to post that code here and acknowledge you for the efforts.