Visual Traverse: an Open Source Python Program for Traverse Computation

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SUMMARY

Polygons are widely used to define the extent of spatial features and field data collection (surveying) is often used to establish polygon line segments. However, every measurement has error, and thus the surveyed polygon will have some misclosure (angular and linear), so it is necessary and required to assess the accuracy and adjust the misclosure. A Python (widely used open source and cross platform programming language) program, Visual Traverse, was developed with a graphical user interface (GUI) to cover the entire computational procedure: data entry, accuracy assessment, angular misclosure adjustment, and linear misclosure adjustment followed by coordinate computations and then area computation. The program can draw the corrected polygon at an appropriate scale for visualization purpose. Visual Traverse is a useful open source and independent tool to facilitate traverse computation not only for the academic and research community, but also for GIS users and surveyors. At the same time, the open source nature promises the further development of the program by its users.