

GIS Tools for Geographical Data Management and Analysis

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In recent years, Geographical Information Systems (GIS) have been widely used for things such as area studies and marketing. However, commercial GIS are difficult for people who are not computer literate to use because GIS have too many functions. Furthermore, many open source GIS, such as WebGIS, are only able to display geographical information, so they cannot perform spatial analysis for area studies. Therefore we have developed Humanities Geographical Information Science Tools (HGIS Tools). This is software that allows geographical information to be shared among researches and can analyze spatial information for humanities research.

In area studies, researchers not only analyze differences between areas but also area changes between periods. In humanities research, time -dependent area analysis is more important than spatial analysis of a period. Therefore, HGIS Tools must manage and analyze spatio-temporal information, which is geographical information that includes temporal attributes. Furthermore, HGIS Tools must show dynamic area changes between periods. And also we plan to develop HGIS Tools so that it will include a project manager, annotations editor, geographical information filter, outside tools connecter for spatio-temporal analysis, advanced search capability using a historical place name dictionary, and supporting tools for sharing geographical information.

HGIS Tools is based on TimeMap¹, which efficiently displays historical spatio-temporal information. We have implemented a project manager and annotation editor to HGIS Tools . Furthermore, we intend to add other functions including a geographical information filter, outside tools connecter and so on. HGIS Tools is also able to manage multilingual spatio-temporal information because the geographical information and its metadata are able to be described in Unicode. We consider that researchers all over the world can efficiently exchange and reuse geographical information using HGIS Tools.

Keyword: HGIS Tools, Project Management, Annotation Editor, Multilingual spatio-temporal information

¹ TimeMapTM used under license from the University of Sydney