

Taiwan Historical Demography GIS

Scenario

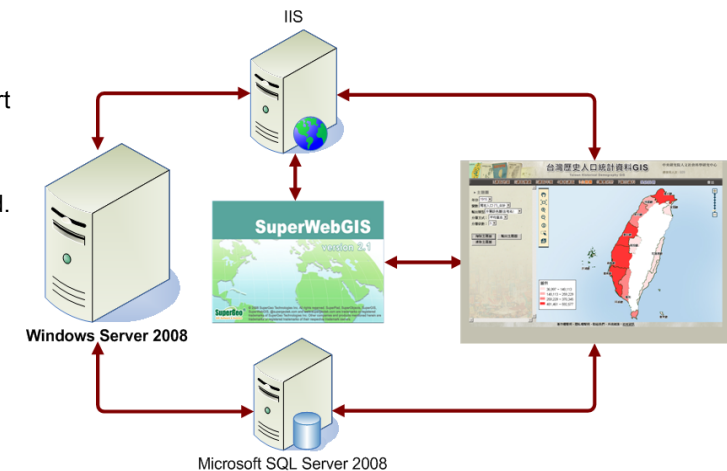
In the Japanese colonial period, the Japanese government carried out a household registration census in Taiwan for the first time in year 1905, aiming to strengthen the ruling power over the colonial economy by exactly understanding the population of Taiwan and controlling Taiwan's overall economic status. After that, the periodical household registration census was taken by each five years since 1905, expecting to establish the complete household registration system. Those precious historical papers are preserved till today. Given that the historical demographic data is the crucial base for understanding the population structure in the past time, the Research Center for Humanities and Social Sciences, Academia Sinica started to establish the Taiwan Colonial Household Registration Census Database in 2005, aiming to provide the users with the service to view the household registration census of each administration area in the Japanese Colonial Period online and expand the studies of population change and the related social sciences.

In 2010, in order to promote and meet the needs for the studies of historical population, the Taiwan Historical Demography GIS is developed with the architecture of Taiwan Economic and Social Indicator GIS as the foundation to provide the scholars with a tool and methods to explore the historical demography from the aspect of space.

Solutions

Taiwan Historical Demography GIS is a Web-GIS-based system for querying historical demography of Taiwan. This Web-GIS applies SuperWebGIS as the map server platform to publish maps and historical demographic data of Taiwan area provided by Research Center for Humanities and Social Sciences over the Internet. Client users can obtain the needed data via the Internet in a convenient way.

In terms of hardware, this project mainly applies two servers, including database server and application server (AP server). The AP server is set up in the demilitarized zone (DMZ), between intranet and internet, protected by firewall. Consequently, even if it is damaged by outside attack it can be reconstructed in a short time and the important data still can be saved.



Solutions

- Utilize SuperWebGIS software as the map server to build up a WebGIS to delivery map services for the public through the Internet.

Results

The Taiwan Historical Demography GIS integrates the Taiwan Colonial Household Registration Census Database and the GIS layers of the administration area in Japanese colonial period created by the GIS Center. The system based on Web-GIS not only allows users to view the population structure at a specific time in a specific area but also assists the scholars in doing the population comparison between different areas or different times to meet the needs for study on historical population.

In terms of functions, five categories of functions are provided in Taiwan Historical Demography GIS.

1. **Map Display and Basic Manipulation** : Taiwan Historical Demography GIS provides various basic GIS tools, such as pan, zoom to full extent, zoom in, zoom out, query by clicking, select area and layer manager. To fit into the interface of layer manager, users can select to view the different administration borders and the names defined in the Japanese Colonial Period.
2. **Data Search** : Taiwan Historical Demography GIS provides a planned method for data searching. Users sequentially set up the settings of "Area", "Variable" and "Year" and use Check to query the correctness of all conditions. The system would filter out the data to present the result. If the query conditions are mistaken or missed, users can immediately switch to the window and change the settings of area, variable or year to correct conditions.
3. **Draw the Thematic Map** : The function allows users to set up the conditions with the function menu of the "Thematic Map", including year, variable, thematic map type (pie chart /bar chart), stratified way and etc. Therefore, the system can display the spatial distribution status of the variable on the map at a specific time. In respect of the stratified way, the condition provides four ways to stratify for

different mapping purposes, including "Average", "Standard Deviation", "Quartile" and "Limit Value." Besides, cooperating with the "Query" function on the toolbar, users can view the attribute data of the selected area.

4. **Draw Statistics Chart** : The function allows users to convert data to the statistic charts in type of bar chart, line chart, pie chart and scatter diagram based on the year and variables users set up. Users can clearly and easily compare the difference by year or area and analyze the correlativity with the statistic charts.
2. **Export Data and Layer** : The function allows users to export data to Excel file or Shapefile file for the use on study.

The integration of historical statistic data and historical geographic GIS provides the scholars a tool and method to explore the history study from the spatial aspect, which crosses the restrictions of the statistic chart to explore the essence of things in an even profound way. In the future, the system will use the historical demographic data as the foundation and further will be expanded to be used in the fields of land survey, hygiene and medical care as well as the social economic, expecting to develop the depth and width of the local (historical) geography, (historical) sociology, economic (history) and the public hygiene study.



Taiwan Historical Demography GIS can display the spatial distribution status of the variable on the map at a specific time by setting up some conditions.

Results

- Taiwan Historical Demography GIS is an integrated platform providing thematic maps and statistical charts based on WebGIS technology.
- Taiwan Historical Demography GIS provides the scholars a tool and method to explore the history study from the spatial aspect.

Software Used

- SuperWebGIS
- Windows Server 2008
- Microsoft Server SQL 2008