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Developing a spatial data warehouse in GIS context: Integration a spatial data mining process for analyzing data

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Geographic Information Systems (GIS) current ones stand out as remarkable tools for the processing and analysis of spatially referenced data. However, they are difficult to use as an efficient decision support tools exploiting this spatial dimension. Their limits are established when it comes to aggregating several multidimensional criteria in the analysis process. This is in a context that approaches based on Data mining, Data Warehouse and "On-Line Analytical Processing" (OLAP) all seem appropriate to better characterize information related to the territory. The OLAP technology, which combines both bases multidimensional analysis and the concepts of the data mining, provides powerful tools allowing the highlighting inductions and information not obvious by the traditional tools. However, these OLAP tools become more complex in the presence of the spatial dimension. The integration of OLAP with a GIS is the future solution for geographic and spatial information. A necessity for the Developing of data mining of spatial data requires structuring of a Spatial Data Warehouse (SDW). This SDW must be easily usable by GIS and by tools Offered by an OLAP system. The work aims at the development of methods resulting from Analysis more adapted to problems of multidimensional spatial analysis. We present in this paper an application made for generating a SDW from geodatabase, based in a GIS-dominating solution. This work is a part of a project for developing and implementing a SOLAP solution in a spatial data mining intelligent Process. The implementation of the application, we opted for the creation and update of a Spatial Data Warehouse (SDW) comparable to a layer of information in a GIS system. This approach allows us more readability and more efficiency in the validation and implementation of SDW.

Keywords: SOLAP, GIS, Spatial data warehouse, Spatial data mining.

Biography

Mekranfar Zohra done Engineer studies at space technology center; I got a master's degree specializing in geographic information system. I am mainly interested in data mining and spatial olap. I use different techniques of spatial information system and solap. I have ease with data warehouse, and during my work I took a lot of interest in geomatics. In addition, I have been able to use several tools, through GIS software such as ArcGis and QGIS.

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