

Review of Spatial Databases and Geographic Information Systems*

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An introduction is provided to the spatial database issues involved in the design of geographic information systems (GIS) from the perspective of a computer scientist [1–6]. Discussed topics include the nature of a GIS and the functionalities that are desired in such systems. Representation issues are also reviewed. The emphasis is on indexing methods [7–9] as well as the integration of spatial and nonspatial data [10–14]. The ultimate goal is to have the functionality of a spatial spreadsheet [15]. Demos are shown of the SAND Spatial Browser (<http://www.cs.umd.edu/~brabec/sandjava>) [16–18] as well as the VASCO JAVA applet (<http://www.cs.umd.edu/~hjs/quadtree/index.html>) [19, 20], which illustrate these ideas where one of the central themes is the ability to perform ranking using both Euclidean distance [21, 22] and distance along a spatial network [23–26].

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