Abstract

A wireless sensor network (WSN) deployed to sense an environment should be able to send information as per the requirements of the sink. For this, the sink needs a query language to formulate its needs and fire queries to the network. The queried nodes must be able to process the multiple queries in their limited memory and computational capacity in a time bound manner. In this paper, an XQuery based query processing architecture that satisfies the unique needs of WSN has been proposed and evaluated. Traditional SQL does not satisfy the time limitations, source specificity and node constraints required by a WSN. X-query architecture allows spatial aware queries that can be processed by resource constrained nodes. TOSSIM based simulation of X-query processing is energy efficient and the nodes are able to process multiple queries within a small time period.

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Index Terms
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