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ABSTRACT

Database Development: Best Practices Case Study

Jeffrey D. Campbell
Center for Urban Environmental Research and Education, UMBC
EnvironmentalInformatics@comcast.net

Abstract
This presentation will use stream monitoring case studies to illustrate best practices in database design. Starting from the underlying system requirements, the quality of various design alternatives will be evaluated. This evaluation will include both technical aspects and those that will improve ease of use by the people ultimately using the system. Key technical aspects include reducing redundant information to minimize potential inconsistencies, ensuring that related data is easily retrievable, and reducing the risk of unintentionally losing data. Ease-of-use factors include reducing data entry effort, simplifying data entry validation, and enhancing productivity in retrieving data with queries. The best practices are not specific to the database software (e.g. Microsoft Access, MySQL, etc) being used.

Attendees with some prior database experience will be best able to apply the concepts illustrated to their own data. Although the focus is on developing database designs, the concepts will also help attendees create spreadsheets that can be imported into a database more easily at a future time.

Dr. Campbell has over 25 years experience in database design and implementation. Recent databases include fish monitoring, amphibian survey, physical stream conditions and a data warehouse integrating a wide range of environmental data. He has taught graduate and undergraduate database courses at four universities, most recently as an Assistant Professor at UMBC. He is currently a research scientist at the Center for Urban Environmental Research and Education at UMBC where his research focuses on employing state of the art information technology in environmental and ecological applications. He has a Ph.D. in Information Science from the University of Pittsburgh, an MBA from Carnegie Mellon University and a BA in Geology from the University of Rochester.