Abstract

Medical warehouses are architectural construct of an information system that provides users with current and historical decision support information. But medical warehouse projects suffers from overestimation of resources because of improper estimation approaches which do not suit well on poorly defined architecture of medical warehouses. In this paper, we have first proposed a framework for an integrated medical warehouse that covers the different aspects of health care management. Then we proposed an effort estimation approach based on this framework which is designed to be used at the very early stage of requirement analysis. The data from the three different set of data warehousing projects are studied and the linear regression approach is used to finalize the model. Final effort is estimated using the project size and the different adjustment factors. For analytical estimation of project size and its complexity, extended function point analysis is used and identified object are categorized and their complexity weight age is determined. The proposed approach is validated by studying three different set of projects having different level of complexity. First set contains eight business data warehousing projects completed in different domains. Second set contains medical OLAP projects and third set has clinical data marts. A set of questionnaire is used to
estimate the complexity of the project, which has to be filled by the developers after completing the initial requirement analysis. The proposed effort estimation model shows a great improvement as compared to the earlier models used in effort estimation of medical warehousing projects.

References

- Szirbik, N. B., Pelletier, C. and Chausalet, T., "Integration of Data on Long Term Care from Heterogeneous Sources For Research Purposes." Medicin&apos;04, Ischia, Italy, 2004.
Banek, Marko, A Min Tjoa, Nevena Stolba, "Integrating different grain levels in medical data warehouse federation", Lecture Notes in computer science, Springer, 2006, ISSN: 0302-9743, 185-194


Song, I. Y., Rowen, W., Medseker, C., and Ewen E. F., "An analysis of many to many relationships between the fact and dimensions tables in dimensions modelling.


Brown, P. J., Bovey J. D., and Chen X. "Context-Aware Applications From Laboratory To Market Place.


Szirbik, N. B., Pelletier, C. and Chausalet, T., "Six Methodological Steps To Build Medical Warehouse For Research.


Huff, S. M., "Clinical Data Exchange Standards And Vocabularies For Messages.


Beverly Collins, Mary Wagner, "Early experiences in using computerized patient record data for monitoring charting compliance, supporting quality initiatives and assisting with accurate charging at Allina Hospitals & Clinics.

International Journal of Medical
Effort Estimation Approach for Integrated Medical Warehouses


Index Terms

Computer Science Information Systems

Keywords

Medical Warehouses Effort Estimation Data Warehousing Medical Support Systems

Electronic Medical Records