

CS-577 Project Proposal

Project name

Quality Management Information System for CS577 projects

Sponsor

Center for Software Engineering (CSE)

- Monvorath Phongpaibul <phongpai@usc.edu>
- Keun Lee <keunlee@sunset.usc.edu>
- Prof. Winsor Brown <awbrown@sunset.usc.edu>

Background

One main research at CSE is to develop, apply and refine an approach called MBASE (Model-Based [System] Architecting and Software Engineering) (Boehm-Port, 1998). MBASE focuses on ensuring that a project's product models (architecture, requirements, code, etc.), process models (tasks, activities, milestones), property models (cost, schedule, performance, dependability), and success models (stakeholder win-win, IKIWISI - I'll Know It When I See It, business case) are consistent and mutually enforcing.

Problem statement

To ensure quality of the system, Quality Management, an important part of MBASE, is practiced in CS577. The main tasks in Quality Management are quality assessment, quality tracking and quality improvement. Currently, the artifacts specifically from quality assessment which are produced by CS577 students are only raw data. The goal of this project is to design and implement a system which will produce useful quality management data entered into an Experience Management System (EMS).

The infrastructure of an EMS is based on the ideas of the Experience Factory approach, which defines a framework for an EMS and contains its Experience Base (eBASE). The CS577 Archives are an example of an Experience Base, but it is not yet at the level of an EMS. An EMS fosters organizational learning, which means that the organization manages and learns from its own experience. Moreover, the proposed system not only organizes the data for future analysis, but also provides action guidelines for quality assessment techniques and a data tracking system for current projects.

System Recommendations

- The proposed system need not necessarily be a fully automatic system (e.g., scanning of hand-filled artifacts is OK).
- There is not any one COTS tool to support all the function
- The use of COTS tools is not requirement for the proposed system