ABSTRACT

The rapid growth and diffusion of the Web are nurturing a novel generation of applications which grow in size and complexity. It challenges the existing tools and approaches for software production. According to literature review, currently most of the existing appointment management systems were developed using ad-hoc approach with consideration on functionality only. There is little emphasis on the design and development process. Only few appointment management systems adopted UML, which is a widely recognized modeling standard to design system. However, because UML adapted to web environment from other sector like software engineering and due to its complexity; UML can not perfectly achieve the goals of web application development.

Besides it, most of the systems adopted three-tier architecture that is the prevailing architecture for web based system during past few years. As modern Web applications become more sophisticated and complex, that require advanced features like multi-device access and one-to-one personalization, three-tier approach falls short in several key areas, for example lack of flexibility and scalability.

In response to that, this thesis is to apply Web Modeling Language (WebML) which specifically designed for web application and .Net four-tier architecture to the appointment management handling in the university environment. A web based appointment management system called WBAMS is designed and implemented so that students and lecturers can arrange meetings in an effective and efficient way.

Evaluation is conducted by adopting testing strategies, software metrics and Microsoft Web Application Stress (WAS) Tool. The evaluation results revealed that WBAMS does not only fulfill these functional requirements, but also satisfy the non-functional requirements like usability, performance, and maintainability. By using WebML and .Net four-tier architecture can complement current Web technology in a more effective way.
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