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Diploma Thesis Abstract

Information System Design in UML

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Summary

Most organization takes a step forward to design and model their information system using a standard modeling language, commonly known as Unified Modeling Language (UML). This document defines the basic terminologies, the methodologies for using UML, and the implementation procedures. The current released version of UML used to elaborate the detailed structure and workflow of an information system. The theoretical part covers a wide range of spectrum to the key concepts of an information system, design, and UML. Adventure Camping Management System used as a case study to see the clear picture and visibility of the theoretical aspects. The primary business of Adventure Camping is selling camping holiday packages to the general public. The three analysis models which are the class model, the interaction model and the state model used with their respective UML diagrams to design the system. A prototype web application implemented to show clearly the effect of modeling in the development process.

Keywords: Unified Modeling Language, Web-based Application, Adventure Camping Management System, Object-Oriented Design, Cloud Computing

Extended Abstract

Information system design is often viewed as a stage in the system development life-cycle, concerned with the detailed "laying out" of system software. The current version of UML which is 2.5 and Visual Paradigm 15.0 used in this document to model a particular real-world enterprise information system. Adventure Camping Management System is a web-based application implemented to support the ongoing day-to-day activities and information flow of adventure camping host company. Functional and non-functional requirements are considering for the development process. All the three type of analysis models discussed and implemented for the particular case study. This document is about modeling Information system using UML. The document investigating the role of UML in the software modeling and maintenance, investigate the reported research and provide different aspects of UML models. A prototype application implemented using ASP.NET [C#] in Visual Studio 2015.

Objectives

The aim is to design a particular Information System application using UML and to develop a prototype web application using C#. In order to ascertain this, there are two phases that should be followed. The first phase contains a definition of an Information System with its component, scaled research on different UML modeling standards and defining various system design concepts. The second phase is building UML model for adventure camping management system which will be used as a typical application area of an Information System. A web-based prototype application will be implemented using C# programming language. Finally, a general analysis will be carried out on the advantages and limitations of the UML designs.

Methodology

In achieving the objectives of the study, a literature review on the UML modeling will be carried out and which also include the current development of such modeling procedures. Design maintainable and understandable UML model for adventure camping management system by formulating the necessary requirements. A prototype application will be Implemented for the given application area using an object-oriented programming language called C#. Finally, discussions, comparisons, and new creative ideas will be noted for future research purposes.

Conclusion

This thesis document has covered a major concept that plays a vital role in the current technological world, this is Information System Design in UML. An information system has been covered before going into UML and its features. An information system is the core part of any particular organization. All organization activities depend on the data and information flows within the intranet or outside to the public. Users and vendors want UML to be more expressive, simple, not difficult to integrate with other modeling and programming languages, and more significant to today's technologies. To address these needs, the OMG and UML vendors are working together towards making UML smarter and more agile.

One of the biggest complaints about UML is that it is too large and too complex. Typically, a project that uses UML only uses 20% of the specification to help build 80% of the code and other deliverables. To address this complaint, UML should be described differently for different user groups. There are ordinary users such as analysts, designers, website builders, database designers, developers, operators, architects, and testers, each bringing a different but valid perspective that uses different but overlapping subsets of UML.

Key UML diagrams explained and used to model a case study that has been selected for this thesis. Adventure camping management system is a web-based application that supports the ongoing day-to-day activities of the adventure camping host company. The UML model has been used for coding and implementation using ASP.NET [C#]. The document has focused on designing and implementing how a customer makes inquiries for the forthcoming holiday packages.

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