University of Science and Technology

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Towards SCORM-Conformant Integrated Learning Management System

Admin Module: registers new student and instructor

Integrated learning Management System

Student Module

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Abstract:

learning management system(LMS) are used in e- learning a system that includes a private services of educational content gives students and instructour and administrator the possibility of access to the system.Of these services authority access according to the level granted to the user, control the content and the modification which, it supports all of the instructor , the student, the system manager. This research focuses on the system administrator tasks in giving him the powers of both teacher and student.

 This research focuses on integrating LMSs and systematically developing an integrated learning management system (LID system) using an advanced software development methodology (Agile), which is intended to improve software quality and responsiveness to changing customer requirements,

 This research contain overview of (ADL) initiative to develop common specifications and standards for technology-based learning deployed over the internet.

الخلاصة:

انظمة ال LMS هى انظمه تضم خدمات خاصة بالمحتوى التعليمي الإلكتروني تمنح الطلاب و المعلمين و المشرفين امكانية الدخول للنظام . من هذه الخدمات صلاحيات الدخول طبقا للمستوى الممنوح للمستخدم، التحكم بالمحتوى و التعديل فيه ، فهي تدعم كل من الأستاذ ، الطالب ، مدير النظام . هذا البحث يركز على مهام مدير النظام فى إعطائه صلاحيات لكل من الأستاذ والطالب .

هذا البحث يركز على إستخدام منهجيه (XP) التي تهدف الى تحسين جودة البرامج وسرعة الإستجابة لإحتياجات العملاء المتغيرة.

هذا البحث يعطى لمحه عامه عن مبادرة التعليم الموزع المتقدم (ADL) لتطوير وتوصيل المواد التعليميه عالية المستوى الى كل من يحتاجها في أي زمان ومكان .

Introduction

The chapter presents the motivations of, the objectives, the methodology, the expected outcomes and overview research.

1-1 Motivations

In order to enhance and facilitate learning environments, E-learning systems have been used widely in educational domains.

The research has been motivated by problems afflicting learning management systems. This section illuminates the problems, and arguments put forward as to why such that research is required. As further instances behind this research, the final subsection lists a number of relevant researches.

1.1.1 Needed for integration; functions (Register new student and instructor, Edit student and instructor profile) admin module.

1.1.2 Needed for standardized e-learning; sharable contents.

1.1.3 In Lms Related Work in many lms supporting scorn like Tiny Lms .

1-2 Objectives

The objective is to develop the following SCORM-conformant Admin module's functions

- Register new student.
- Register new instructor.

1-3 Methodology

The project uses Extreme Programming (XP) methodology, XP is the most widely used approach to agile software development which is intended to improve software quality and responsiveness to changing customer requirements, it advocates frequent releases in short development cycles, which are intended to improve productivity and introduce checkpoints at which new customer requirements can be adopted (Roger,2010).

1-3-1 Extreme Programming values

Extreme Programming is based on values of simplicity, communication, feedback, courage, and respect, which was newly added. It works by bringing the whole team together in the presence of simple practices, with enough feedback to enable the team to see where they are and to tune the practices to their unique situation.

1-3-2 Activities of XP

Extreme Programming uses an object oriented approach as its preferred development paradigm and encompasses a set of rules and practices that occur within the context of four framework activities: planning, design, coding, and testing (Roger, 2010).

1-3-2-1 Planning

The planning activity (also called the planning game) begins with listening- a requirements gathering activity that enables the technical members of the XP team to understand the business context for the software and to set a broad feel for required output and major features and functionality. Listening leads to the creation of a set of "stories" that

describe required output, features, and functionality for software to be built.

1-3-2-2 Design

XP design rigorously follows the KIS (keep It Simple) principle. A simple design is always preferred over a more complex representation, in addition, the design provides implementation guidance for a story as it is written nothing less, nothing more. XP encourages the use of CRC (Class-Responsibility-Collaborator) cards as an effective mechanism for thinking about the software in an object-oriented context. The CRT cards are the only design work product produced as part of the XP process.

If a difficult design problem is encountered as part of the design of a story, XP recommends the immediate creation of an operational prototype of that portion of the design called a spike solution, the design prototype is implemented and evaluated. The intent is to lower risk when true implementation starts and to validate the original estimates for the story containing the design problem.

XP encourages Refactoring, which is the process of changing a software system in such a way that it does not alter the external behavior of the code yet improves the internal structure. It is a disciplined way to clean up code [and modify, simplify the internal design] that minimizes

the chances of introducing bugs, in essence, when you refactor you are improving the design of the code after it has been written.

Because XP design uses virtually no notation and produces few, if any, work products other than CRC cards and spike solutions, design is viewed as a transient artifact that can and should be continually modified as construction proceeds. The intent of refactoring is to control these modifications by suggesting small design change that can radically improve the design. It should be noted, however, that the effort required for refactoring can grow dramatically as the size of an application grows.

1-3-2-3 Coding

After stories are developed and preliminary design work is done, the team does not move to code, but rather develops a series of unit tests that will exercise. Once the unit test has been created, the developer is better able to focus on what must be implemented to pass the test. Nothing extraneous is added (KIS).Once the code is complete, it can be unit-tested immediately, thereby providing instantaneous feedback to the developers.

A key concept during the coding activity (and one of the most talked about aspects of XP) is pair programming. XP recommends that two people work together at one computer workstation to create code for a

story, this provides mechanism for real-time problem solving (two heads are often better than one) and real-time quality assurance (the code is reviewed as it is created). As pair programmers complete their work, the code they develop is integrated with the work of others.

1-3-2-4 Testing

We have already noted that the creation of unit tests before coding commences is a key element of the XP approach. The unit tests that are created should be implemented using a framework that enables them to be automated, hence, they can be executed easily and repeatedly. This encourages a regression testing strategy whenever code is modified (which is often, given the XP refactoring philosophy).

As the individual unit tests are organized into a universal testing suite integration and validation testing of the system can occur on a daily basis. This provides the XP team with a continual indication of progress and also can raise warning flags early if things go awry. Fixing small problems every few hours takes less time than fixing huge problems just before the deadline, this is known as XP Acceptance Tests.

1.5 The Thesis expected outcomes

Development of the following Admin module's functions within the integrated learning management systems (LID).

- Register new student.
- Register new instructor.

1.6 The Thesis Organization

Chapter2 contains definitions of learning management system, learning content management system, and integrated learning management system, definitions of Scorm and some related works.

Chapter3 presents the use cases, domain model, sequence diagram, operation contract, and the class diagram for the specified functions. It also shows the sequential development of these functions.

Chapter4 is Conclusion that presents result summary and research recommendations.