

# **GENERATING TEST CASES FOR LEARNINGZONE**

**A project report submitted to College of Arts and Sciences in partial**

**fulfillment of the requirement for Master Degree in**

**Information Technology (IT)**

**Universiti Utara Malaysia**

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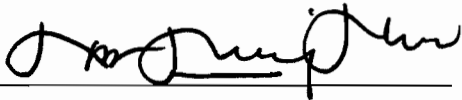
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## Abstract

The increment of web-based applications in all over the internet increase the concern about quality of these web-applications, which requires testing the designs (both black and white boxes) of these systems and generating new methodologies and tools for testing. This research is concern about the applications that are related to Learning Management Systems (LMS) and precisely Modular Objected Oriented Dynamic/Distributed/Development Learning Environment (Moodle), an open source software. Universiti Utara Malaysia (UUM) has named its Moodle as LearningZone which still lacks of testing. Therefore, a suitable testing approach for deriving test cases to evaluate this open source application has been identified. This application represents the case study of this research which focuses mainly on student functionalities of LearningZone. Such an objective can be achieved through identifying the suitable UML diagram for the research's case study. Later on, applying the generation of the test cases from the chosen UML diagram. Finally, the generated test cases have to be evaluated in terms of accuracy and system's errors. This will ensure the suitability of the usage of that diagram for LearningZone as a result of this research.

## ACKNOWLEDGEMENT

By the name of Allah, the Most Compassionate Most Merciful

I would like to express my gratitude to **Allah** for providing me the blessing to complete this work. Hence, I deeply gratefulness to my supportive and helpful supervisor, **Dr. Nor Laily Hashim** for assisting and guiding me in the completion of this research. With all truthfulness, without Allah then her support, the project would not have been a complete one. She has always been my source of motivation and guidance. For that, I am truly grateful for her continual support and cooperation in assisting me all the way through the semester. In addition, I am grateful to **Md Darus** for her help to make my project successful.

I would like to present my thanks and appreciations to my mother Fatima Ibrahim, my father Ali Sari, my wife, my son Abdullah, my daughter Leen, and all my family members who have always been there for me. Finally, I would like to express my appreciations to my friends, colleagues, other staff, and everyone who have helped me in this journey.

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## LIST OF ABBREVIATIONS

UUM	Universiti Utara Malaysia
UML	Unified Modeling Language
LMS	Learning Management System
Moodle	Modular Object Oriented Dynamic Language Environment
IS	Information System
V&V	Validation and Verification
CRM	Customer Relationship Management
BPR	Business Process Reengineering
CMS	Course Management System
VLE	Virtual Learning Environment
PHP	Preprocessor Hypertext Preprocessor
SQL	structured Query Language
Mac	Macintosh
SQA	Software Quality Assurance
HTML	Hyper Text Markup Language
E2E	End to End

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Introduction

Nowadays, there are many open source applications available for organisation to choose from to be used as applications in their organization. In the education context, one of the commonly used information systems (IS) is Learning Management System (LMS). This application is important as a means of sharing of resources among students and lecturers, for facilitating active learning and important for distance and virtual learning.

Many of these open source applications have undergone certain degree of testing. However, when they are adapted and applied in a new environment, where some of them might not be tested adequately or not tested at all. Taking an example of Moodle, one of the leading LMS, at the point this research was conducted, it has been tested only at unit level testing as conducted by the Moodle's contributors (Moodle.org). However, how well this application is tested at the educational institutions that adopt this application is not known.

The purpose of this study is to identify a testing approach that might be suitable to test running applications. One of the important elements in conducting testing is test case generation. Patton (2001, p. 65) as cited in Kaner (2003), has defined that test cases as specific inputs and approach that are followed in software are tested. Moreover, studying a system is the initial point of system construction and test case generation that can be planned at an early stage of the software development life cycle (Kundu & Samanta, 2009).

The contents of  
the thesis is for  
internal user  
only

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