

**THE INVESTIGATION ON THE BEST PRACTICES OF
EXTREME PROGRAMMING (XP) QUALITY
IMPLEMENTATION AT UUM IT**

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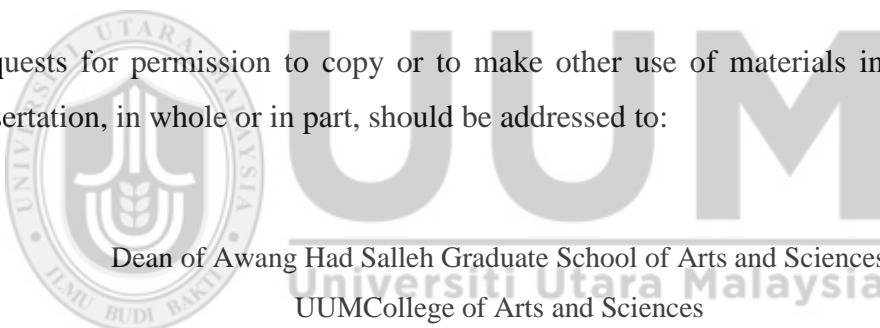


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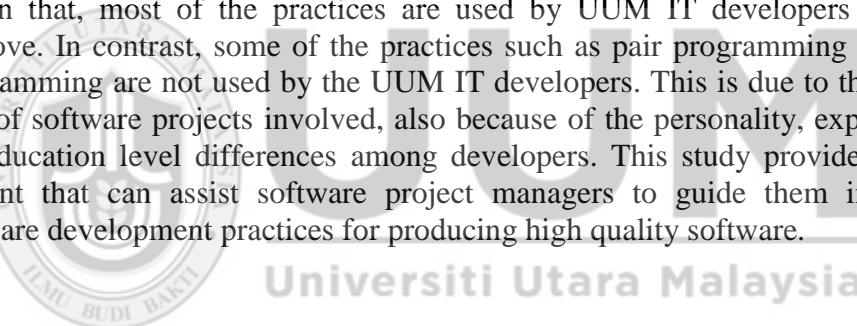
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Abstrak

Kejuruteraan perisian (SE) memainkan peranan yang penting dalam meningkatkan kesejahteraan masyarakat melalui penggunaan perisian yang berkualiti tinggi. Kebanyakan projek perisian gagal disebabkan organisasi perisian tidak mempraktis amalan pembangunan perisian yang sewajarnya. Sehubungan itu, organisasi perisian perlu mempunyai metodologi pembangunan perisian yang baik bagi memenuhi keperluan pihak pemegang taruh. Salah satu metodologi pembangunan perisian dalam SE yang semakin berkembang penggunaannya adalah metodologi *Extreme Programming* (XP). Metodologi ini merupakan pendekatan baru dalam SE yang mampu meningkatkan kualiti perisian dan berupaya mengurangkan masa pembangunan perisian dan kos. Walau bagaimanapun, tahap penggunaan metodologi ini di kalangan pembangun perisian di Pusat UUM IT masih tidak jelas. Oleh yang demikian, kajian ini bertujuan untuk mengkaji penggunaan amalan XP di pusat ini. UUM IT telah dipilih sebagai kajian kes kerana peranan organisasi ini telah berubah bagi memenuhi permintaan yang tinggi di kalangan masyarakat kampus. Oleh itu, penyelidikan yang memfokuskan kepada kepada 12 amalan XP di UUM IT amat diperlukan. Kajian ini dijalankan dengan menemubual secara separa berstruktur dengan lima (5) pakar dari UUM IT bagi mengenal pasti kejayaan pelaksanaan amalan XP. Hasil kajian telah menunjukkan bahawa sebahagian besar daripada amalan XP digunakan oleh pembangun perisian di UUM IT tetapi perlu dipertingkatkan. Sebaliknya, beberapa amalan seperti *pair programming* dan *test first programming* tidak digunakan oleh pembangun perisian di UUM IT. Ini disebabkan jenis dan sifat projek perisian yang terlibat, dan juga disebabkan oleh personaliti, pengalaman dan tahap pendidikan yang berbeza di kalangan pembangun perisian. Kajian ini menyediakan bukti kualitatif yang dapat membantu pengurus projek perisian dalam membimbing mereka meningkatkan amalan pembangunan perisian bagi menghasilkan perisian yang berkualiti tinggi.

Abstract

Software engineering (SE) plays an important role for improving society's well-being through the use of high quality software. There is noted that most of the software projects are failed, due to missing or poor software development practices in software organizations. Due to this reason, having a good and sound software development methodology is crucial for software organization to satisfy stakeholder's requirements. One of the prevalent software development methodologies in SE is Extreme programming (XP) methodology. This methodology is an emerging SE approach, which is able to increase software quality and hence reducing software development time and cost. However, the level of application of this methodology among software developers in UUM IT centre is still unclear. Therefore, this study aims to investigate the application of XP practices in this centre. UUM IT was chosen as a case study because the role of this organization has changed to meet high demand among campus communities. Thus, research that focuses on the 12 XP practices of UUM IT is highly needed. This study was conducted using a semi-structured interview with five (5) experts from the UUM IT, to identify the successful implementation of the XP practices. The findings have shown that, most of the practices are used by UUM IT developers but need to improve. In contrast, some of the practices such as pair programming and test first programming are not used by the UUM IT developers. This is due to the nature and type of software projects involved, also because of the personality, experiences and the education level differences among developers. This study provides qualitative evident that can assist software project managers to guide them in improving software development practices for producing high quality software.



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Table of Contents

Permission to Use	I
Abstrak.....	II
Abstract.....	III
Acknowledgement	IV
CHAPTER ONE INTRODUCTION	1
1.1 Overview	1
1.2 Background of Study	1
1.3 Problem Statement	5
1.4 Research Questions	7
1.5 Research Objectives	7
1.6 Research Scope	8
1.7 Significance of the Study	9
1.8 Organization of the Dissertation	9
1.9 Summary of Chapter One	10
CHAPTER TWO REVIEW OF LITERATURE.....	11
2.1 Introduction	11
2.2 Software Development Practices Methodology	11
2.3 Agile Software Development.....	14
2.4 Extreme Programming Practices (XP)	21
2.5 The Adoption of Agile Practices.....	29
2.5.1 Small-Medium-Large Scale Project.....	31
2.5.2 Strengths and Weaknesses of XP Method	32
2.6 Related Works	34
2.7 Summary of Chapter Two	36
CHAPTER THREE RESEARCH METHODOLOGY.....	37
3.1 Introduction	37
3.2 Research Design.....	37
3.3 Research Approaches	39

3.4 Data Collection.....	42
3.4.1 Sampling	42
3.4.2 Research Instrument.....	42
3.5 Data Analysis and Interpretation.....	48
3.6 Validation of Data Collection	50
3.7 Summary of Chapter Three	51
CHAPTER FOUR DISCUSSION OF RESULTS AND FINDINGS	52
4.1 Introduction	52
4.2 XP Best Practices	52
4.3 Proposed Conceptual Model	57
4.4 Case Study Results at UUM IT with Five Experts	59
4.4.1 Expert 1	60
4.4.2 Expert 2.....	66
4.4.3 Expert 3.....	71
4.4.4 Expert 4.....	74
4.4.5 Expert 5	77
4.5 Discussing of Findings.....	79
4.6 The XP Quality Implementation.....	87
4.7 Summary of Chapter Four.....	93
CHAPTER FIVE CONCLUSION	95
5.1 Introduction	95
5.2 Achievement of Research Objectives	95
5.2.1 Objective One	95
5.2.2 Objective Two.....	96
5.2.3 Objective Three.....	96
5.3 Contributions of the Study	97
5.4 Limitations and Future Work Directions	97

List of Tables

Table 2.1 Principles of the Manifesto for Agile Software Development.....	16
Table 2.2 Agile Practices and Methods	17
Table 2.3 XP practices mapping with respect to quality subjects	29
Table 2.4 Summary of the Common Strengths and Weaknesses of XP.	33
Table 2. 5 Summary of the Application Extreme programming Practices	34
Table 3.1 Overview of research design and methodological processes	39
Table 3.2 Interview Questionnaire.....	44
Table 4.1 XP Best Practices.....	53
Table 4.2 Expert's profile.....	59
Table 4.3 Summaries the final XP practices based on the experts.....	86
Table 4.4 Summary of the XP quality implementation findings based on the Expert's opinion	89



List of Figures

Figure 2.1 Comparison of the Methodologies	20
Figure 2.2 Original XP practices.....	23
Figure 3.1 Research Process of the Study.....	41
Figure 3.2 The qualitative process of data analysis	49
Figure 3.3 Nvivo project	50
Figure 4.1 Conceptual Model of XP Quality implementation	58
Figure 4.2 The interview based on the themes (Nvivo 11)	59
Figure 4.3 Expert 1 with XP practices	61
Figure 4.4 Expert 2 with XP Practices	66
Figure 4.5 Expert 3 with XP practices	72
Figure 4.6 Expert 4 with XP practices	75
Figure 4.7 Expert 5 with XP Practices	77
Figure 4.8 X Links between practices.....	88



List of Appendices

Appendix A INTERVIEW QUESTIONNAIRE	114
Appendix B VALIDITY OF DATA.....	118



CHAPTER ONE

INTRODUCTION

1.1 Overview

This initial chapter introduces the background on the phenomenon under study, problem statement, research questions, and research objectives. The research scope and significance of this research are also discussed. The chapter ends with the outline of the thesis structure and summary of the current chapter.

1.2 Background of Study

Software engineering (SE) is a domain that deals with engineering discipline in software construction. It has been kept formal and has practical methodologies as guidance in software development. It has been manifested by software life cycle that is composed of requirement elicitation and analysis, design specification, implementation, verification and validation, deployment and maintenance (Wu, 2011). Software development processes are an important part of software engineering, which influence the product outcome (Senapathi & Srinivasan, 2012; Päivärinta & Smolander, 2015). Several studies noted that software projects are considered a failure for many reasons. Tan (2011) refers that the research conducted by Gartner where data was collected from 845 project sample has shown that 42.5% did not deliver all the benefits, 44% were delivered over budget and 42% were not delivered on time. Furthermore, Gulla (2011) mentions that missing methodology is one of the reasons for software failure. The reason of software failure has also been discussed by Haughey (2011), who claims that poor or missing methodologies and tools are among the reasons.

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