

**Software architecture evaluation using Architecture Tradeoff Analysis Method
(ATAM): A case study of UUM learning zone system**

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By

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ABSTRACT

Software architecture evaluation has been employed by many organizations around the world to be the required standard procedure in the development of software system. It has widely gained general acceptance from both company and the research community because of its immense contributions. The UUM learning zone had only been operating for just a semester and has never been evaluated before. This study extends the use of Architecture Tradeoff Analysis Method (ATAM) a scenario-based evaluation method to evaluate the software architecture of learning zone which is the Universiti Utara Malaysia's learning management system used for online education within the university community. The findings relatively showed that they were no risk and tradeoff in the architecture and some sensitivity point were identified.

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CHAPTER ONE

INTRODUCTION

1.1 Background:

Software architecture has become an integral part of research and practice in the field of software engineering over the decade. Software architecture is very important because it tries to explain the early design decisions of a system and also shows how to satisfy the quality attributes of a system, thus defining the entire quality of a system (Merson, P., & Smith, D., 2003).

According to Fielding (2000), he defined software architecture “*as a representation (or model) at a high level abstraction of the elements of a software system*”. The system may contain many levels of construction as well as representing many phases of operation, but each of this has its own software architecture. The architecture of a system contributes effectively to the quality attributes of a system (Kazman, R., & Mark, K., 1998).

While Bass (1998) provides a more detail/definition of software architecture, he defined it as “*the structure or structures of the system, which comprise software components, the externally visible properties of those components, and the relationships among them*”.

The software architecture represents the earliest form of software design decisions. These decisions fully affects quality attribute like reliability, modifiability, security, availability,

security, performance e.t.c.

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