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A REQUIREMENT MODEL OF AN ADAPTIVE EMERGENCY EVACUATION CENTER MANAGEMENT

SCHOOL OF COMPUTING
UUM COLLEGE OF ARTS AND SCIENCES
UNIVERSITI UTARA MALAYSIA
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Abstract (English version)

One of natural disasters that pose a rising danger and has highest percentage of occurrences is flood. Previous studies on flood disaster have provided solutions to deal with this situation. However, they do not consider a scenario where evacuation centers are drowned due to heavy flood and these studies do not provide any requirement models which can be used as reference guides to build similar systems. This study proposes a requirement model for a decision aid model for evacuation center management which is capable of providing smart solutions for relocation of victims to other evacuation centers when they were almost drowned. The methodology used in this study consists of five phases: requirement gathering, conceptual design, development, verification, and preparing thesis & articles for publication. This study has produced a requirement model of the proposed system that consists of a use case diagram, use case specifications, class diagrams, and sequence diagrams, which has been reviewed by the experts by using inspection method. The prototype has been evaluated through a functional testing. The proposed requirement model can be used as a reference model for developers in producing similar evacuation center management system.

Keywords: requirement model, smart evacuation center management, flood, relocation.
Abstrak (Malay version)


Keywords: model keperluan, pusat pengurusan pemindahan pintar, banjir, penempatan semula.
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CHAPTER ONE
INTRODUCTION

1.1 Background of Study

Natural disasters have become worldwide issues. 94 countries have been affected by 317 natural disasters in 2014, causing 8,186 deaths worldwide [1]. There were 6,768 natural disasters occurred between 1995-2015 [2], [3]. This consists of flood disaster, storm disaster, earthquake disaster, extreme temperature disaster, landslide disaster, drought disaster, wildfire disaster, and volcanic activity. The Figure 1.1 shows the percentage of occurrences of natural disasters by disaster types [3], where occurrences of flood disaster are higher than other disasters.

2.3 billion people were affected by floods between 1995 and 2015 [2], [3]. The number of affected people by floods is the highest when compared to affected people of other natural disasters. This information is depicted in the Figure 1.2.

*Figure 1.1: Occurrences of Natural Disasters by Disaster Type (1995-2015)*
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