UNIVERSITI TEKNOLOGI MARA

# DEVELOPMENT OF TOURNAMENT BRACKET SYSTEM USING ELO RATING METHOD

ADI ASHRAF BIN ZEFFROUL

# BACHELOR OF INFORMATION TECHNOLOGY (Hons.) INFORMATION SYSTEMS ENGINEERING

JANUARY 2017

# STUDENT'S DECLARATION

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

.....

ADI ASHRAF B. ZEFFROUL 2014947475

JANUARY, 2017

#### ABSTRACT

Sport Planet Sdn Bhd is a sport centre that provides court services for people who want to rent for sport purposes. The company supply courts renting services for indoor sports such as futsal and badminton. Other than that, they also organize all sorts of tournament to encourage youth to get into sport while increasing their goodwill. Up until now, the company still uses old manual method to organize their tournament matches. That is the reason why they are having difficulties to organize their daily task. The project focused on managing their tournament which involves processes such as registration, storing player's data and generate tournament bracket. Web-based system is needed by the company to manage the tournament held there. Authorize and authentication also needed by the company to secure the data stored. This project aims to develop a web-based Tournament Bracket system with the implementation of three tier architecture and SDLC to ease tournament management for SportPlanet Ampang. SDLC for this project involves three phases: Requirement gathering analysis, design and implementation. As a result, a prototype of Tournament Bracket System is produced together with documentation of Software Requirement Specification (SRS) and Software Design Document(SDD).

# **TABLE OF CONTENTS**

CONTENTS	PAGE
SUPERVISOR'S APPROVAL	ii
STUDENT'S DECLARATION	iii
ACKNOWLEDGEMENT	iv
ABSTRACT	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	ix
LIST OF TABLES	xi
LIST OF ABBREVIATIONS	xii

# **CHAPTER ONE: INTRODUCTION**

1.1 Background Study	1
1.2 Problem Statement	3
1.3 Research Aim	3
1.4 Research Objective	4
1.5 Research Scope	4
1.6 Research Significance	4
1.6.1 Stakeholders	4
1.6.2 Academicians	5
1.7 Research Expected outcome	5

### CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction to Tournament	6
2.1.1 Single-Elimination Tournament	8
2.1.2 Double-Elimination Tournament	8
2.1.3 Multilevel	9
2.1.4 Round Robin	11
2.2 Balance Tournament	12

2.3 Rating System	12
2.3.1 Elo Rating System	13
2.4 Existing System	15
2.4.1 Challonge	15
2.4.2 PrintYourBracket	16
2.4.3 Bracket Ninja	17
2.4.4 Comparison of Existing System	18
2.5 System Development Life Cycle (SDLC)	18
2.5.1 Waterfall	20
2.5.2 PRINCE2	22
2.5.3 Rapid Application Development (RAD)	24
2.6 Discussion	25
2.7 Chapter Summary	26

#### **CHAPTER THREE: METHODOLOGY**

3.1 Methodology Introduction	27
3.2 Description Research Approach and Methodology	28
3.2.1 Requirement Gathering Analysis	29
3.2.2 Design Phase	30
3.2.3 Implementation Phase	32
3.3 Hardware & Software Specification	32
3.3.1 Hardware	32
3.2.2 Software	32
3.4 Chapter Summary	34

# **CHAPTER FOUR: RESULT AND FINDINGS**

4.1 Requirement Gathering and Analysis	35
4.1.1 Interview Results	36
4.1.2 Analysis Requirement	38
4.1.3 Use Case Diagram (UCD)	39
4.1.4 Domain Class Diagram (DCD)	41
4.2 Design	42