UNIVERSITI TEKNOLOGI MARA

E-BOOKING MANAGEMENT SYSTEM FOR DEWAN BADMINTON SRI NILAM USING GAMIFICATION AND FEEDBACK-RATING MODULE

MUHAMMAD FARHAN BIN AZRIN

BACHELOR OF INFORMATION SYSTEMS (HONS.) BUSINESS COMPUTING

JULY 2026

TABLE OF CONTENTS

CONTENT			PAGE
SUPERVISOR APPROVAL			**i**
STUDENT DECLARATION			**ii**
ACKNOWLEDGEMENT			**iii**
ABSTRACT			**iv**
TABLE OF CONTENTS			**v**
LIST OF FIGURES			**ix**
LIST OF TABLES			**xi**
LIST OF ABBREVIATIONS			**xiii**
CHAPTER ONE: INTRODUCTION			
1.1	Background of Study		1
1.2	Current Business Process		3
1.3	Problem Statement		5
1.4	Objectives		6
1.5	Scope		6
	1.5.1	User	6
	1.5.2	Admin	7
	1.5.3	Staff	7
1.6	Significance		8
1.7	Project Framework		9
	1.7.1	Phase 1: Planning	9
	1.7.2	Phase 2: Analysis	9
	1.7.3	Phase 3: Design	10
	1.7.4	Phase 4: Implementation	10
	1.7.5	Phase 5: Testing	11
	1.7.6	Phase 6: Documentation	11
1.8	Gantt Chart		14
1.9	Conclusion		15
2.1	Management Information System (MIS)		16

CHAPTER TWO: LITURATURE REVIEWS

2.1.1	History and Evolution of MIS	17
2.1.2	Concept and Purposes of MIS	17
2.1.3	Advantages of MIS	18
2.2	E-Booking Management System (EBMS)	20
2.2.1	History and Concept of E-Booking Management System	21
2.2.2	Advantages of E-Booking Management System	22
2.2.3	E-booking Management System in Sport Industry	23
2.2.4	Core Features of an E-Booking Management System	25
2.3	Gamification in MIS	26
2.3.1	PBL Element in Gamification	27
2.3.2	Advantages of Gamification in MIS	28
2.3.3	Evaluation and Testing in Using Gamification	29
2.3.4	Gamification Model Applied in This Study	30
2.4	Feedback-Rating Module in MIS	32
2.4.1	Foundation of Feedback-Rating Module	33
2.4.2	Advantages of Using Feedback-Rating Module	34
2.4.3	Feedback-Rating Model Applied in This Study	35
2.4.4	User Satisfaction Metrics	37
2.5	System Development Life Cycle (SDLC)	38
2.5.1	Adapted Waterfall Model	39
2.6	Similar Existing Systems	46
2.6.1	Courtsite	46
2.6.2	Metahub	47
2.6.3	MBA 101 Badminton Online Court Booking	49
2.6.4	Comparison of Similar Existing System	50
2.6.5	Comparison Features Presence Between Existing System	53
2.7	Implication of Literature Review	55
2.8	Conclusion	57

CHAPTER THREE: METHODOLOGY

3.1	Project Methodology	58
3.2	Phase 1: Planning	62
3.3	Phase 2: Analysis	62
3.4	Phase 3: Design	66

ACKNOWLEDGEMENT

Above all else, I extend my deepest gratitude to Allah, the Most Merciful, the Most Compassionate, for being my guiding light during this effort, providing me with the fortitude, tenacity, and mental clarity required to conquer every challenge and reach this milestone.

I am immensely thankful to my esteemed supervisor, whose exceptional mentorship, constant support, and insightful direction have been vital in the successful completion of this project. Her extensive expertise and critical suggestions have enhanced my work and motivated me to strive for perfection. Furthermore, I am grateful to my renowned lecturer for CSP600 and CSP650, whose extensive knowledge and encouragement have considerably contributed to the success of this endeavour.

I extend deepest appreciation to my family and close friends for their unwavering support, infinite tolerance, and persistent belief in my skills. Their unwavering support and deep belief in me have served as the cornerstones of my perseverance and determination. Since the completion of this endeavour would not have been possible without their affection and support, this accomplishment is equally ours as it is mine.

ABSTRACT

The manual booking process at Dewan Badminton Sri Nilam creates several operational problems, including difficulty checking court availability, double bookings, disorganized booking and payment records, and the absence of a structured method for collecting user feedback. This project aimed to identify the current booking process and its challenges, design and develop an E-Booking Management System integrated with the Points, Badges, and Leaderboards (PBL) gamification model and a feedback-rating module and evaluate the functionality and usability of the developed system. The system was developed as a web-based application using the Adapted Waterfall Model, which consists of planning, analysis, design, implementation, testing, and documentation phases. It supports three roles: User, Staff, and Admin. The main functions include user registration and login, court-availability checking, online court booking, Pay Now and Pay Later options, payment-proof uploading and verification, booking-status management, points, badges, leaderboards, missions, reward redemption, feedback and star ratings, and report generation. Functionality testing recorded a 100% pass rate, indicating that all tested functions produced the expected results. The user evaluation involving 30 respondents recorded an overall mean score of 4.55 out of 5.00. The payment process obtained the highest mean score of 4.70, while the overall satisfaction item recorded a mean score of 4.60. Furthermore, 96.7% of respondents gave positive ratings to the booking and payment processes, 93.3% gave positive ratings to the feedback-rating feature, and 90.0% gave positive ratings to the motivational effect of the PBL gamification model. Overall, the developed system improves booking efficiency, payment tracking, user engagement, and service evaluation at Dewan Badminton Sri Nilam. Future enhancements may include FPX payment integration, automated booking notifications, QR code check-in, predictive reporting, improved security, and a mobile-friendly application.