Design Project II Report, CSE 3200 ,Section 3

Turf Management System

Submitted by:

Member 1: Jahid Ahmed Jihad	ID:231014017
Member 2: Hasan Uddin Chowdhury	ID:231014151
Member 3: Taowrin Rahman Sakib	ID:231014051
Member 4: Atika Naznin Tasmia	ID:222014007
Member 5: Nadia Akter	ID:231014102

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1. Introduction

1. 1purpose

This SRS describes the functional and non-functional requirements for the Turf Booking & Management System (TBMS). The system digitizes the booking of sports turfs (football, badminton) and enables customers, managers, and administrators to manage bookings efficiently.

1.2 Document Conventions

TERM	MEANING
SHALL	Mandatory requirement
SHOULD	Recommended but not mandatory
MAY	Optional / future enhancement
TBD	To be determined later

Requirement Labels

- FR-XX → Functional Requirement
- NFR-XX → Non-functional Requirement
- SR-XX → Security Requirement
- IR-XX → Interface Requirement

1.3 Intended Audience

- **Developers:** Implement system features
- **Project supervisors :** Review technical scope
- **Testers:** Validate system behavior
- **Stakeholders:** Understand system workflow

1.4 project scope

TBMS provides:

- Turf listing and real-time slot visibility
- Online customer booking flow

- Manager approval workflow
- Admin control and reporting
- Prevents double-bookings
- Centralized booking history tracking

2.Overall Description

2.1 Product Perspective

The Turf Booking & Management System is a standalone web-based application designed to replace the current manual turf reservation process, which relies on phone calls and informal communication. The system provides real-time slot availability, online booking, and role-based management for customers, managers, and administrators.

TBMS is a standalone web system built with

- PHP
- MySQL/MariaDB
- HTML, CSS, JavaScript, Bootstrap
- XAMPP environment

2.2 Product Functions

1. User registration/login
2. Turf listing & availability
3. Booking creation/cancellation
4. Booking approval
5. Payment status tracking
6. Reports & dashboards

2.3 User classes

- Customer-Booking
- Manager-Booking approval
- Admin -Total System Control

2.4 Operating Environment

- PHP, MySQL/MariaDB, Apache (XAMPP), HTML, CSS, JavaScript, Bootstrap.
- 4 GB RAM, 10 GB storage,
- modern web browser.
- Localhost using XAMPP with phpMyAdmin for database

2.5 Constrains

- Must prevent overlapping bookings
- Must run on low-cost hosting / localhost

2.6 Documentation

- User Manual
- Admin Guide
- Manager Guide

3.System Features & Functional Requirements

3.1 User Management & Authentication

This section details the functional requirements of the TBMS, organized by major system features. Each requirement is identified with a unique ID (FR) for traceability and reference.

FR-01	System SHALL allow registration/login
FR-02	Password SHALL be securely hashed
FR-03	Admin SHALL manage user roles
FR-04	Manager SHALL access dedicated dashboards

3.2 Turf Management

FR-05	Admin SHALL add/edit/remove turf
FR-06	Turf includes name, type, price, location, hours

3.3 Booking Management

FR-07	Customer SHALL view available slots
FR-08	Customer SHALL book free slots
FR-09	Customer SHALL cancel pending
FR-10	Manager SHALL approve/reject bookings
FR-11	Manager SHALL mark completed bookings
FR-12	System SHALL prevent double-bookings

3.4 Payment Tracking

FR-13	System SHALL store payment status
FR-14	Admin **SHOULD** adjust payment manually

4. External Interface Requirements

Wireframe

- Rough wireframe design

5. NON-FUNCTIONAL REQUIREMENTS

5.1 Performance

NFR-01: Pages load <3 seconds
NFR-02: Supports 100+ concurrent users

5.2 Security

NFR-03: Passwords hashed
NFR-04: Role-based
NFR-05: Authorization enforced

5.3 Reliability

NFR-06: 24/7 availability possible
NFR-07: Database consistency

6 . External Interfaces

- **User Interface:**
Web-based responsive interface for Customer, Manager, and Admin with separate dashboards.
- **Hardware Interface:**
Works on standard devices (PC, laptop, mobile) with internet and web browser.
- **Software Interface:**
PHP backend, MySQL database, HTML/CSS/Bootstrap frontend.
Email/SMS API used for **Forgot Password (OTP)**.
- **Communication Interface:**
HTTP/HTTPS for web access and API communication.

7. Future Scope

- Integration of real payment gateways (bKash, Nagad)
- Mobile app development (Android/iOS)
- Advanced reports and analytics
- Multi-location turf management
- Automated refund system
- Enhanced security (2FA, activity logs)

8. Appendices

- Er diagram
- Class diagram
- Activity diagram
- Dfd diagram
- Architechtural diagram
- Sample UI figma design
- Example booking schedule