Project Report: Sports Complex Booking System

Introduction:

The Sports Complex Booking System is a database management project designed to manage the booking process of a sports complex. The complex has various facilities, including tennis courts, badminton courts, multi-purpose fields, and an archery range. The system allows registered users to make bookings, cancel bookings, and update their information.

Database Design:

The database consists of four tables:

1. **members**: stores member information (id, password, email, member_since, payment_due)
2. **pending_terminations**: stores member information pending termination (id, email, request_date, payment_due)
3. **rooms**: stores room information (id, room_type, price)
4. **bookings**: stores booking information (id, room_id, booked_date, booked_time, member_id, datetime_of_booking, payment_status)

Views:

1. **member_bookings**: displays member booking information

Stored Procedures:

1. **insert_new_member**: inserts new member information
2. **delete_member**: deletes member information
3. **update_member_password**: updates member password
4. **update_member_email**: updates member email
5. **make_booking**: creates a new booking
6. **update_payment**: updates payment information
7. **view_bookings**: displays booking information
8. **search_room**: searches for available rooms
9. **cancel_booking**: cancels a booking

Triggers:

1. **payment_check**: checks payment status before canceling a booking

Stored Functions:

1. **check_cancellation**: checks consecutive cancellations and imposes fines

System Requirements:

1. MySQL database management system
2. MySQL Workbench (optional)

Project Implementation:

1. Create database and tables
2. Insert sample data
3. Create views, stored procedures, triggers, and stored functions
4. Test system functionality

Conclusion:

The Sports Complex Booking System demonstrates a comprehensive database management system for managing bookings, member information, and payment processes. The project showcases various MySQL features, including tables, views, stored procedures, triggers, and stored functions.

Future Enhancements:

1. Implement user authentication and authorization
2. Integrate payment gateway
3. Develop user interface (web or mobile application)
4. Add reporting and analytics features

Summary of the Project

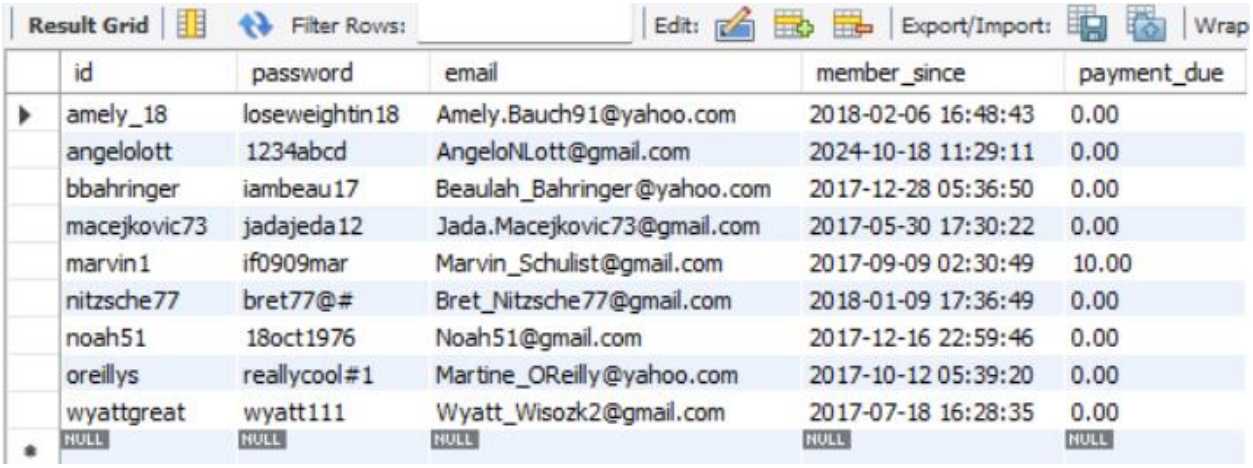
- The project involves building a simple database to manage bookings at a sports complex.
- Facilities include 2 tennis courts, 2 badminton courts, 2 multi-purpose fields, and 1 archery range.
- Only registered users can make bookings, which can be canceled up to the day before the booking date.
- A $10 fine is imposed for the third or more consecutive cancellations.
- The database includes tables: members, pending_terminations, rooms, and bookings.

- Views and stored procedures are used for various operations like inserting new members and making bookings.
- A trigger named payment_check and a stored function check_cancellation are part of the database structure.
- The first step is creating a database named sports_booking using MySQL Workbench.
- SQL tasks must be executed using the 'Execute Statement' button to ensure correctness.
- A separate SQL file, drop.sql, can be used to drop objects if mistakes occur in the code.
- The members table includes columns for id, password, email, member_since, and payment_due.
- The pending_terminations table mirrors some columns from the members table with an additional request_date column.
- The rooms table includes columns for id, room_type, and price.
- The bookings table has columns for id, room_id, booked_date, booked_time, member_id, datetime_of_booking, and payment_status.
- A UNIQUE constraint ensures no duplicate room_id, booked_date, and booked_time combinations in the bookings table.
- Foreign keys link member_id in bookings to id in members and room_id in bookings to id in rooms.
- Data insertion into tables is necessary for project functionality; sample data is provided in a downloadable PDF.
- Users are encouraged to refer to Appendix C for suggested code if issues arise during table creation.
- The project emphasizes learning through error correction by comparing personal code with provided solutions.
- Creating tables involves selecting appropriate data types and constraints like NOT NULL where necessary.
- The project aims to reinforce MySQL concepts covered throughout the course through practical application.
- Users are advised to review Chapter 2 for guidance on using databases within MySQL Workbench.
- Appendix B provides easy reference for data insertion into tables during the project setup phase.

- Completion of this project marks the end of the course material.

Appendix B: Tables for sportsDB

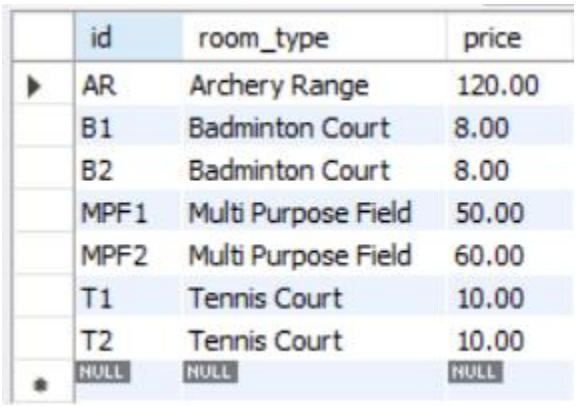
1.members



Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap

id	password	email	member_since	payment_due
amely_18	loseweightin18	Amely.Bauch91@yahoo.com	2018-02-06 16:48:43	0.00
angelolott	1234abcd	AngeloNLott@gmail.com	2024-10-18 11:29:11	0.00
bbahringer	iambeau17	Beaulah_Bahringer@yahoo.com	2017-12-28 05:36:50	0.00
macejkovic73	jadajeda12	Jada.Macejkovic73@gmail.com	2017-05-30 17:30:22	0.00
marvin1	if0909mar	Marvin_Schulist@gmail.com	2017-09-09 02:30:49	10.00
nitzsche77	bret77@#	Bret_Nitzsche77@gmail.com	2018-01-09 17:36:49	0.00
noah51	18oct1976	Noah51@gmail.com	2017-12-16 22:59:46	0.00
oreillys	reallycool#1	Martine_OReilly@yahoo.com	2017-10-12 05:39:20	0.00
wyattgreat	wyatt111	Wyatt_Wisozk2@gmail.com	2017-07-18 16:28:35	0.00
NULL	NULL	NULL	NULL	NULL

2.rooms



id	room_type	price
AR	Archery Range	120.00
B1	Badminton Court	8.00
B2	Badminton Court	8.00
MPF1	Multi Purpose Field	50.00
MPF2	Multi Purpose Field	60.00
T1	Tennis Court	10.00
T2	Tennis Court	10.00
NULL	NULL	NULL

3.bookings

id	room_id	booked_date	booked_time	member_id	datetime_of_booking	payment_status
1	AR	2017-12-26	13:00:00	oreillys	2017-12-20 20:31:27	Paid
2	MPF1	2017-12-30	17:00:00	noah51	2017-12-22 05:22:10	Paid
3	T2	2017-12-31	16:00:00	macejkovic73	2017-12-28 18:14:23	Paid
5	MPF2	2018-03-02	11:00:00	marvin1	2018-03-01 16:13:45	Paid
6	B1	2018-03-28	16:00:00	marvin1	2018-03-23 22:46:36	Paid
7	B1	2018-04-15	14:00:00	macejkovic73	2018-04-12 22:23:20	Cancelled
8	T2	2018-04-23	13:00:00	macejkovic73	2018-04-19 10:49:00	Cancelled
9	T1	2018-05-25	10:00:00	marvin1	2018-05-21 11:20:46	Paid
10	B2	2018-06-12	15:00:00	bbahringer	2018-05-30 14:40:23	Paid
NULL	NULL	NULL	NULL	NULL	NULL	NULL

4.pending_terminations

id	email	request_date	payment_due
little31	Anthony_Little31@gmail.com	2024-10-18 11:34:26	10.00
NULL	NULL	NULL	NULL