

# **Athlete Tracking Project: Improving Sports Management with Technology**

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## **Abstract**

Athlete tracking is an important part of sports and fitness management. It helps monitor performance, progress, and growth. This project aims to build a simple system for sports schools. By using ASP.NET, MSSQL Server, and .NET Entity Framework, the system tracks athlete progress, sessions, and payments. It has easy-to-use screens and keeps data safe.

## **Introduction**

Tracking athlete performance is very useful for sports schools. It helps manage training, keep payment records, and monitor progress. Many schools do not have a good system to do these tasks easily. This project solves these problems by creating a system using modern web and database technologies. The main goal is to make it simple and helpful for decision-making.

## **Related Works**

Many studies have focused on the use of technology in sports management. For example, systems like "Catapult Sports" and "STATSports" offer advanced solutions for tracking professional athletes' performance through wearable devices. However, these solutions are often expensive and complex, making them unsuitable for smaller sports schools. Other research highlights the use of web applications and databases for managing sports events and athlete data, such as the work by Smith et al. (2022), which discusses a web-based platform for amateur sports clubs. This project builds on these ideas but aims to deliver a more affordable and user-friendly solution for sports schools.

# Athlete Tracking System

The purpose of this project is to provide a simple and efficient system for tracking athlete performance and managing sports school operations. This system is designed for instructors, admins, and students. Instructors can monitor the progress of their students, while administrators can manage session schedules, payment tracking, and user data. For students, the system offers a user-friendly interface to check their training sessions and performance metrics.

The project includes a web application that simplifies sports school management. Users can access this system through a secure login, view their specific dashboards, and interact with their assigned features. The application uses ASP.NET Core for fast performance and secure handling of data. MSSQL Server serves as the database backend, ensuring reliable and structured storage of information.

Smart features such as automated reminders for payments and progress tracking charts allow for a seamless experience. These features reduce manual workloads for the administration and make the entire process efficient and data-driven.

The project has 2 parts. These parts are given below.

## Web Application: Features for Admins, Instructors, and Students

On the website there are three user roles that have different operation. The user can login as admin or student or instructor.

- **Admin:** Manage all sessions that are created in a branch. Follow the payment status of students.
- **Instructors:** Create and cancel a session about their specialization, list the students who are followed and add growth records for them.
- **Students:** Parents' login information is used to login. They can access the list of sessions and can choose a session they want. They can follow their growth records with a graph.

## Database: Storing and Managing All Data

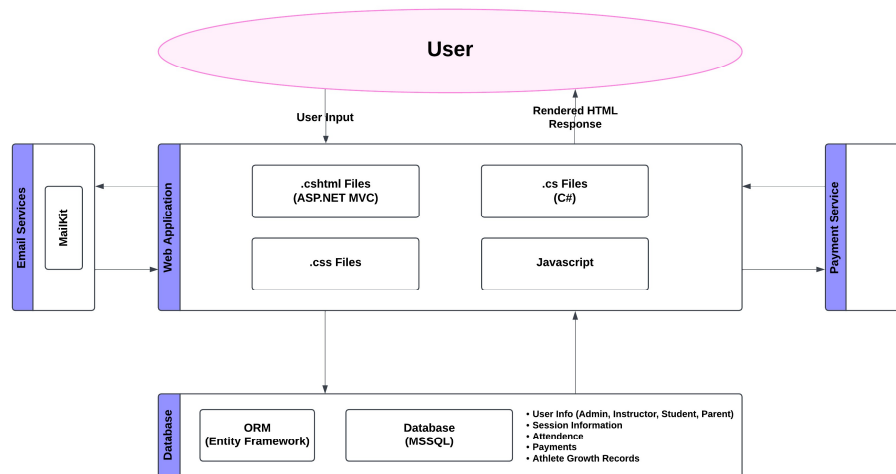
It is the section that all data stored such as user data (admin, instructors, student), information about sessions, development records of students, branch information.

# System Architecture

This section contains information about the architecture of the system.

## High-Level Diagram:

In this part, the high-level diagram of the system represents below. This diagram the visualizes the architecture.



In this part, the database tables, its design and relations between tables are given. Below picture represents the ER model of the system's database.



**SessionsPage(Student):**

TITLE

Sessions

My Sessions

My Records

Instructors

Payment

Swimming

Date : Monday  
Time : 17:00-18:00  
Instructor: H. Yahya Ünal  
Branch : Pendik

Cancel

Fitness

Date : Tuesday  
Time : 15:00-22:00  
Instructor: Ahmet Yılmaz  
Branch : Üsküdar

Cancel

Fitness

Date : Saturday  
Time : 15:00-22:00  
Instructor: Ömer Taş  
Branch : Maltepe

Register

Tennis

Date : Wednesday  
Time : 12:00-13:00  
Instructor: Aslı Öztürk  
Branch : Pendik

Register

Basketball

Date : Thursday  
Time : 14:00-16:00  
Instructor: Zeynep Demir  
Branch : Kadıköy

Register

Basketball

Date : Sunday  
Time : 19:00-20:00  
Instructor: Zeynep Demir  
Branch : Kadıköy

Register

Swimming

Date : Thursday  
Time : 17:00-18:00  
Instructor: H. Yahya Ünal  
Branch : Pendik

Register

Tennis

Date : Friday  
Time : 16:00-17:00  
Instructor: Aslı Öztürk  
Branch : Pendik

Register

MySessionPage(Student):

TITLE

Sessions

My Sessions

My Records

Instructors

Payment

Name

Swimming

Date : Monday

Time : 17:00-18:00

Instructor: H. Yahya Ünal

Branch : Pendik

Cancel

Fitness

Date : Tuesday

Time : 15:00-22:00

Instructor: Ahmet Yılmaz

Branch : Üsküdar

Cancel

MyRecordsPage(Student):

TITLE

Sessions

My Sessions

My Records

Instructors

Payment

Name

Graphic for height

Graphic for weight

Graphic for bmi (body mass index)

## InstructorsPage(Student):

TITLE

Sessions  
My Sessions  
My Records  
Instructors

Payment

Name

H. Yahya Ünal

Specialization : Swimming  
Email : yahyaunal89@gmail.com

Ahmet Yılmaz

Specialization : Fitness  
Email : ahmtlylmz34@gmail.com

Ömer Taş

Specialization : Fitness  
Email : omertas123@gmail.com

Aslı Öztürk

Specialization : Tennis  
Email : asloztrk05@gmail.com

Zeynep Demir

Specialization : Basketball  
Email : zynpdemir57@gmail.com

## PaymentPage(Student):

TITLE

Sessions  
My Sessions  
My Records  
Instructors

Payment

Name

January

Amount: 0,00₺

February

Amount: 0,00₺

March

Amount: 0,00₺

April

Amount: 0,00₺  
Pay

May

Amount: 0,00₺  
Pay

June

Amount: 0,00₺  
Pay

July

Amount: 0,00₺  
Pay

August

Amount: 0,00₺  
Pay

September

Amount: 0,00₺  
Pay

October

Amount: 0,00₺  
Pay

November

Amount: 0,00₺  
Pay

December

Amount: 0,00₺  
Pay

### MySessionsPage(Instructor):

TITLE

My Sessions

My Students

Name

Swimming

Date : Monday

Time : 17:00-18:00

Instructor: H. Yahya Ünal

Branch : Pendik

Cancel

Swimming

Date : Thursday

Time : 17:00-18:00

Instructor: H. Yahya Ünal

Branch : Pendik

Cancel

+

### AddSessionPage(Instructor):

TITLE

My Sessions

My Students

Name

Swimming

Date : Monday

Time : 17:00-18:00

Instructor: H. Yahya Ünal

Branch : Pendik

Cancel

Swimming

Date : Thursday

Time : 17:00-18:00

Instructor: H. Yahya Ünal

Branch : Pendik

Cancel

Swimming

Date : Monday V

Start Time : 12:00 V

End Time : 13:00 V

Branch : Maltepe V

Add Session

+

MyStudentsPage(Instructor):

**TITLE**

My Sessions

My Students

Mehmet Süt

İrem Çalışkan

Merve Sevgi

Cengiz Gül

Name

AddRecordPage(Instructor):

**TITLE**

My Sessions

My Students

Mehmet Süt

İrem Çalışkan

Merve Sevgi

Cengiz Gül

**Mehmet Süt**

Weight (kg)

Height (cm)

Comment(Optional)

Add Record

Name



## SessionsPage(Admin):

# TITLE

Sessions

Students

Instructors

Branchs

Name

Swimming

Date : Monday

Time : 17:00-18:00

Instructor: H. Yahya Ünal

Branch : Pendik

Cancel

Fitness

Date : Tuesday

Time : 15:00-22:00

Instructor: Ahmet Yılmaz

Branch : Üsküdar

Cancel

Fitness

Date : Saturday

Time : 15:00-22:00

Instructor: Ömer Taş

Branch : Maltepe

Cancel

Tennis

Date : Wednesday

Time : 12:00-13:00

Instructor: Aşlı Öztürk

Branch : Pendik

Cancel

Basketball

Date : Thursday

Time : 14:00-16:00

Instructor: Zeynep Demir

Branch : Kadıköy

Cancel

Basketball

Date : Sunday

Time : 19:00-20:00

Instructor: Zeynep Demir

Branch : Kadıköy

Cancel

Swimming

Date : Thursday

Time : 17:00-18:00

Instructor: H. Yahya Ünal

Branch : Pendik

Cancel

Tennis

Date : Friday

Time : 16:00-17:00

Instructor: Aşlı Öztürk

Branch : Pendik

Cancel

+

## StudentsPage(Admin):

# TITLE

Sessions

Students

Instructors

Branchs

Name

Mehmet Süt

İrem Çalışkan

Merve Sevgi

Cengiz Gül

InstructorsPage(Admin):

TITLE

Sessions

Students

Instructors

Branchs

Name

H. Yahya Ünal  
Swimming

Ahmet Yılmaz  
Fitness

Ömer Taş  
Fitness

Aslı Öztürk  
Tennis

Zeynep Demir  
Basketball

BranchsPage(Admin):

TITLE

Sessions

Students

Instructors

Branchs

Name

Pendik  
(551) 958 5674

Kadıköy  
(554) 435 7896

Maltepe  
(534) 768 9551

Üsküdar  
(545) 947 8048

+

#### AddBranchPage(Admin):

**TITLE**

Sessions  
Students  
Instructors  
**Branches**

Name

**Pendik**  
(551) 958 5674

**Kadıköy**  
(554) 435 7896

**Maltepe**  
(534) 768 9...

**Üsküdar**  
(545) 947 8...

District ▼

Phone

**Add Branch**

+

## Conclusion

The project shows how web technologies and databases help in sports management. Using ASP.NET Core and MSSQL Server makes the system fast and safe. Designing separate screens for roles makes it easier to use. Problems like keeping data updated and making the interface simple were solved with testing and feedback.

This project shows how technology can improve sports management. The system is flexible and can grow with the needs of sports schools. Future plans include adding AI for better insights and creating a mobile app.