**Yaşar University**
**Department of Computer Engineering**
**COMP 4920 Graduation Design Project II, Spring 2025**
**Graduation Project Summary Form**

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| **Project Code and Title:** | ACCESSFIT – Enhancing Gym Management with QR Code-Based Access Control |
| **Project Team:** | Aytun Yüksek – 21070001026@stu.yasar.edu.tr<br>Emirhan Kurşun – 21070001038@stu.yasar.edu.tr<br>Fehmi Mert Tezdoğan – 21070001021@stu.yasar.edu.tr |
| **Project Advisors:** | Prof. Dr. Mehmet Ufuk Çağlayan |
| **Project Deliverables:** | • Final Report<br>• Requirements Specifications Document (RSD)<br>• Design Specifications Document (DSD)<br>• Product Manual<br>• Poster<br>• Slide Presentation<br>• Project Summary<br>• Source Code |
| **Project Web Address:** | https://ekur17.github.io/accessfit |

## 1. Introduction

AccessFit is a mobile application developed to simplify gym entry and help users manage their workout routines in a more organized and motivating way. The app combines a QR code-based access system with personal workout plans, progress tracking, and motivational features like achievement badges. It was developed using React Native and Firebase.

## 2. Requirements

The main features of the project include user registration/login, QR code generation and scanning, workout plan creation, progress logging, and achievement tracking. The system was designed to be fast, user-friendly, and secure.

## 3. Design

The application was designed with a three-layer structure:
- Frontend: Built with React Native; this includes all user interface screens and interactions.
- Business Logic Layer: Manages the internal flow and operations based on user actions.
- Data Layer: Firebase is used to store user data and workout records.

The system includes modules for user management, workout planning, data visualization, notifications, and membership tracking.

## 4. Implementation and Testing

All screens and functionalities were developed using React Native. Firebase Firestore was used as the main database, and notifications were handled with Firebase Cloud Messaging.
QR code operations were integrated using existing libraries.
Testing process included:
- Unit testing for each individual feature (e.g., verifying that QR scan correctly triggers access).
- End-to-end testing to ensure the full system works as expected.
- Device testing across different phones.
- User testing to evaluate usability.

## 5. Conclusions

AccessFit is a mobile app that simplifies gym access, offers personalized workout planning, and helps users stay motivated. The core features were successfully implemented. The app is clean, functional, and user-friendly. In the future, additional features like wearable device integration, an advanced badge system, and social elements can be added.

**Notes:**
1. Please read the notes in the Turkish version of this form.