

Tallinn University of Technology

Gym Equipment Rental Marketplace

Web Applications with C#

Aleksandr Kaidalov

223348IADB

Tallinn 2024

Author's declaration of originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

Author: Aleksandr Kaidalov

26.02.2024

Table of Contents

<i>Author's declaration of originality</i>	<i>2</i>
<i>Table of Contents</i>	<i>3</i>
<i>Introduction.....</i>	<i>4</i>
<i>ERD.....</i>	<i>5</i>
<i>Analysis</i>	<i>6</i>
<i>UI Path.....</i>	<i>8</i>

Introduction

In a world where fitness enthusiasts seek convenient and affordable ways to access quality gym equipment, the gym equipment rental platform emerges as the solution. With a surge in interest towards health and wellness, coupled with the desire for flexibility and cost-effectiveness, the platform bridges the gap between individuals seeking access to premium gym equipment and those looking to monetize their unused or underutilized fitness gear. This platform fosters a community-driven space where fitness aficionados can connect, rent, and rent out high-quality gym equipment.

This idea arose during the pandemic when all public spaces began to temporarily close to prevent the spread of the virus among people. This restriction extended to gyms, significantly complicating participation in certain types of sports that require specialized equipment. For someone accustomed to lifting heavy weights in a gym, switching to bodyweight exercises isn't very practical, as these are entirely different workouts. Like the author of this work, people were looking for options to rent dumbbells, barbells, and other equipment for home workouts. Fortunately, some were able to find equipment through local gym owners or private individuals. However, this often-required connections, and the prices were not always justified.

This platform will allow users to select the optimal equipment for themselves based on weight, size, shape, material, and other parameters for conducting full-fledged home workouts. Renters won't have to spend hundreds or thousands on purchasing equipment that will also need to be stored somewhere permanently. They can rent it for a suitable period after agreeing with the equipment owner. All they need to do is visit the equipment rental platform, find the right product, follow the link, and, if the product is available, pay for the rental or contact the equipment owner. If a client wishes to list their own item for rent, they can press a button that allows them to add a listing and place their offer on this platform.

Thus, this app will help move the usual gym visits to a convenient place for the client, saving time, eliminating the need for additional travel, and making the client's workouts more independent.

ERD

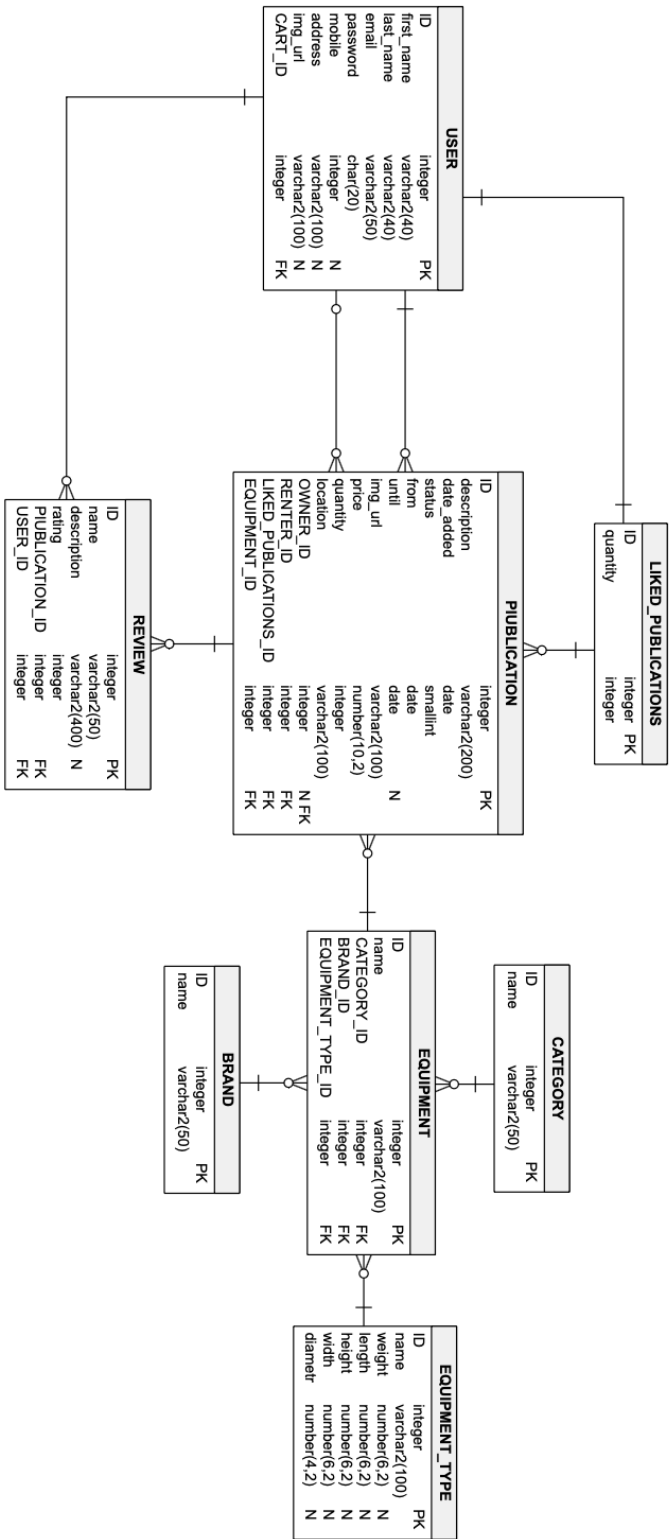


Figure 1. Entity Relationship Diagram.

Analysis

Upon arriving at the platform, the client first identifies themselves. Upon entering their profile, they can both rent out and lease their own equipment. Their information will be saved in the USER table. This table is central to the user management aspect of the system. It stores essential user data such as identification (ID), contact information (email, mobile number, address), and authentication details (password). Each user has an associated image URL for profile picturing in case the client decides to upload a profile picture.

The client can both view and add publications. Publications are the primary entities through which equipment is offered for rent. The table includes comprehensive details like a unique ID, a textual description, dates defining the period of availability, and multimedia support through an image URL. It also features pricing information, quantity, and location. The table holds foreign keys to several other tables, linking each publication to its owner (OWNER_ID), renter (RENTER_ID), likes (LIKED_PUBLICATIONS_ID), and the specific equipment on offer (EQUIPMENT_ID).

Since all offers come from different users and with different rates, there is no shopping cart in the application, but there is the possibility to add items to the list of liked goods (LIKED_PUBLICATIONS), from where one can later rent equipment individually.

Categories in the CATEGORY table are used to organize equipment into various classifications, making it easier for users to browse and find what they need. It contains just two fields: an ID and a name for each category.

The EQUIPMENT table stores information specific to the items being rented or sold. It includes a name and links to its category (CATEGORY_ID), brand (BRAND_ID), and type (EQUIPMENT_TYPE_ID).

The EQUIPMENT_TYPE table defines the physical and functional characteristics of different types of equipment. It covers dimensions (weight, length, height, width, diameter) and a general name for each type.

Brands are cataloged in the BRAND table, providing a means to associate equipment with manufacturers or brand identities. It consists of a simple ID and name structure.

Users can leave reviews on publications, which are captured in the REVIEW table. Each review has an ID, a textual name that might serve as a title or subject, a descriptive component, and a rating. Reviews are tied back to publications and users via PUBLICATION_ID and USER_ID respectively.

UI Path

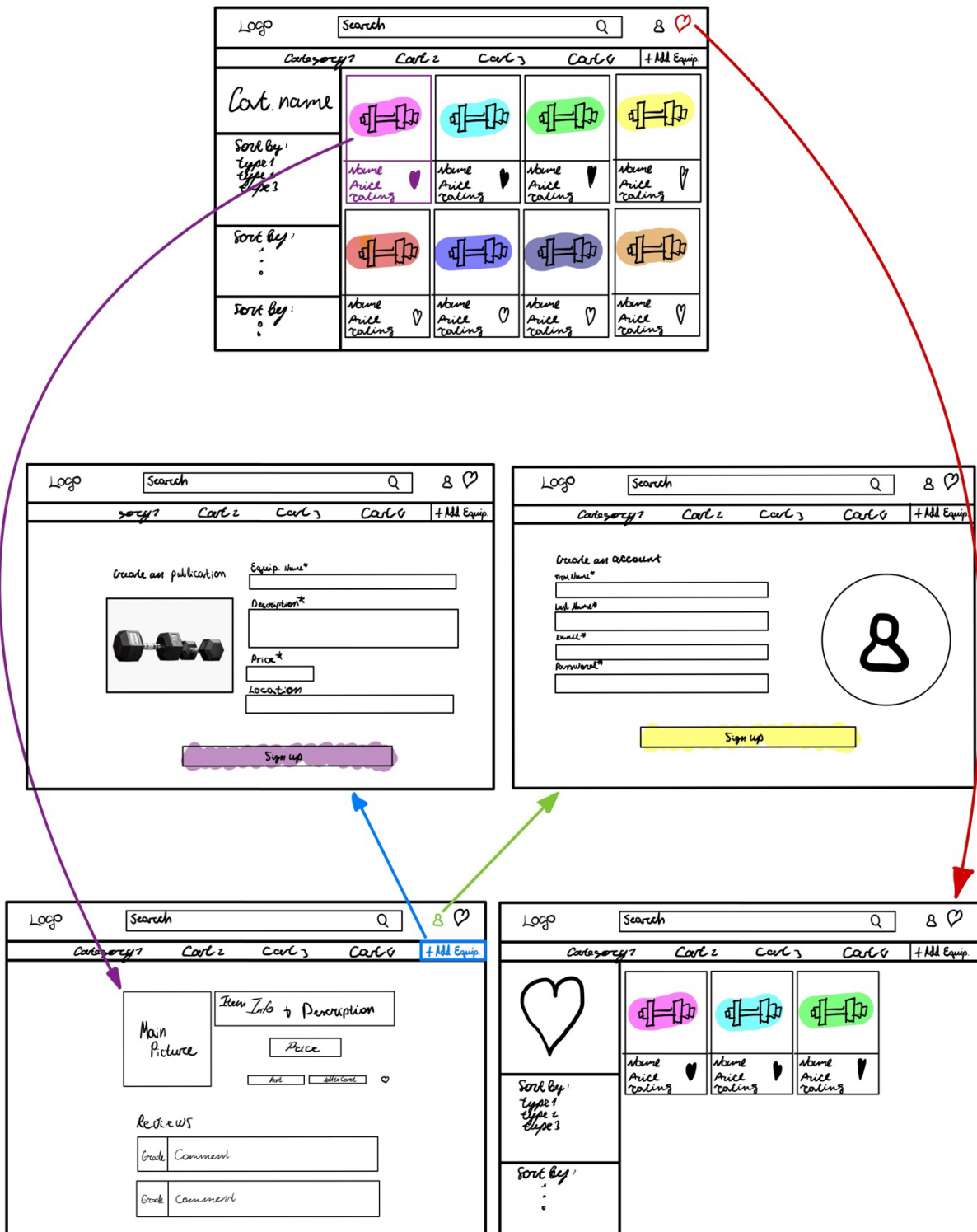


Figure 2. Happy path UI sketches