



Software Requirements Specification (SRS)

Tools Sharing Application

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1. Introduction:

In every house, there are used tools and equipment that are not used. Others in the neighborhood need these tools and equipment for one time, but they have to buy them, and their prices have become expensive.

In this sense, we devised the idea of a mobile application called "Tools Sharing" to exchange these tools and equipment between their owners and those who need them.

1.1. Purpose:

The purpose of the "Tools Sharing" application is to provide for users to exchange their unused tools & equipment with others who need them. This application aims at bringing revenue to the owners of the tools & equipment, saving costs for those who need them by renting the tools & equipment through our application, and fostering a sense of community collaboration.

1.2. Scope:

The "Tools Sharing" application will be developed by Flutter and Firebase technology to support both iOS and Android platforms. The scope of this software includes:

- Enabling users to create profiles.
- Allowing users to list their unused tools and equipment.
- Allowing users to search for available items.
- Allowing users to book the tools and equipment.
- Allowing users to pay using their application wallet.

1.3. Definitions, acronyms, and abbreviations

- Tool Sharing: The act of exchanging unused tools and equipment among homeowners and individuals in the neighborhood through the "Tools Sharing" mobile application.
- User: An individual who creates an account and interacts with the "Tools Sharing" application.
- Book Request: A request initiated by a user to borrow a tool from another user for a specified duration and purpose.
- Tool Owner: The user who owns a specific tool listed in the application.
- Tool Renter: The user who requests to borrow a tool from a tool owner.
- SRS: Software Requirements Specification.
- IOS: iPhone Operating System.
- Android: An open-source mobile operating system developed by Google.
- UI: User Interface.

1.4. Organization

This Software Requirements Specification document is divided into multiple subsections.

The first section includes explanations of the purpose, scope, and organization of the document.

Also, it handles the description of project specific words, acronyms and abbreviations that will be used in the document.

The second section of the document is separated into the following six different sections, each detailing specific details of system uses and their corresponding actions: Product Perspective, Product Functions, User Characteristics, Constraints, Assumptions and Dependencies, and Operating Environment.

The third section is an enumerated listing of all the requirements described for this system.

The fourth section encompasses all the Use-case, Sequence, State and class diagrams that model the system.

In the fifth section, there is a prototype of the system along with a sample scenario that graphically describes the use of the system.

The sixth section contains a listing of all related reference materials used in this document.

The seventh and final subsection is dedicated to providing a point of contact for any viewer in this document.

2. Overall Description

This section includes details about what is and is not expected of the "Tools Sharing" application in addition to which cases are intentionally unsupported and assumptions that will be used in the creation of the "Tools Sharing" application.

2.1. Product Perspective

The "Tools Sharing" application is a mobile application that allows users to exchange their unused tools and equipment with others who need them. The application is designed to provide a convenient and cost-effective way for users to share their tools and equipment, reducing waste and promoting sustainability.

2.2. Product Functions

The "Tools Sharing" application has the following key functions:

- User registration
- User Authentication
- User Profiles
- Tool & Equipment Management
- Tool & Equipment Browse
- Tool & Equipment Search
- Checkout
- Payment:
- Ratings & Reviews
- Admin Panel

2.3. User Characteristics

The typical "Tools Sharing" application user is simply anyone that has access to the Internet smartphone, and the user types are:

- Owners: Registered Users who have tools and equipment that they want to exchange for a rental fee.
- Renters: Registered Users who need tools and equipment and are willing to pay a rental fee to use them.
- Administrators: Users who manage the application and ensure its smooth operation.

2.4. Constraints

- The software shall be developed for use in Arabic, English, and Germany language only.

- The registered user will not be able to update his registered email.
- The software supports the dark mode.

2.5. Assumptions and Dependencies

- Users will have access to mobile devices with an internet connection.
- Users will be willing to exchange their unused tools and equipment with other users.
- Users will be willing to pay a rental fee for the tools and equipment they need.
- Owners shall be responsible for the maintenance and repair of their tools and equipment.
- Renters shall be responsible for any damages or loss of the rented tools and equipment.

2.6. Operating Environment

The software is a mobile application that is usable on Android and iOS. The backend of the system is Firebase, which would handle all requests through the system.

3. Specific Requirements

3.1. User Interface Requirements

The user interface of the system should be user friendly, responsive, and easy to navigate.

3.2. Functional Requirements

3.2.1. User registration

- The application will allow the user to register, the application will have a single sign on, this means that the user will have to register once to use all the services features on the application.
- The registration process shall require users to provide personal information, including the following:
 - o Name (M), (Updatable), (String)
 - o E-Mail (M), (Updatable), (String)
 - o Password (M), (Updatable), (String)

3.2.2. User Authentication

- Once the user is registered, the backend will send an email to the user's mail with a link to verify the registration.
- Users shall be able to log in to the application using their mail and password.
- The application shall verify the user's credentials before granting access to the system.

3.2.3. Log In

- The user will be able to log in to the application using their mail and password.
- The user will be able to log in to the application using Google.

3.2.4. User Profile

- The user will be able to manage his profile.
- The user will be able to link his account with google.

3.2.5. User settings

- The user will be able to review and charge his wallet balance.

- The user will be able to change the application language.
- The user will be able to change the theme mode.

3.2.6. Tool & Equipment Management

- The registered user will be able to add, update, and delete the tools and equipment through the My tools tab.
- The tools and equipment shall be described with the following attributes:
 - o Name (M), (Updatable), (String)
 - o Description (Updatable), (String)
 - o Category (M) (Selectable)
 - o Image (M) (Updatable), (File), (PNG, JPG or PDF) with maximum size 10 MB
 - o Rental price per day (M), (Updatable), (Integer)

3.2.7. Tool & Equipment Search & Browse

- The user will be able to search and browse the available tools & equipment through the Tools tab.
- The search functionality shall allow users to search for tools and equipment using keywords and display search results in a clear and organized way, providing users with relevant information about each tool or equipment, including names, image, descriptions, availability, and rental price per day.
- The Browse functionality shall allow users to browse the tools and equipment by categories, and the result of browsing will be displayed about each tool or equipment, including names, image, descriptions, and rental price per day.

3.2.8. Shopping Cart

- The tool renter will be able to add tools to a shopping cart when browsing available items.
- The tool renter will be able to add the rent duration after adding the tools to the shopping cart.

3.2.9. View Shopping Cart Details

- The application shall provide a checkout process for users to review their selected tools and confirm.
- Users shall be able to view and modify the contents of their shopping cart before completing the checkout process.

3.2.10. Checkout

- The checkout process shall include a summary of the selected tools, estimated tool rent duration, and the value of the rent.
- Upon successful checkout, the application shall provide the renter with the location and mobile number of the tool's owner.

3.2.11. Orders

- The user will be able to check his orders for tools, whether he is an owner or a renter.
- The user will be able to check his orders details.

3.2.12. Payment:

- The application will be support a wallet feature where users will be able to deposit and manage funds for tool exchanges and related transactions.
- Users shall have the ability to deposit funds into their wallets through secure payment gateways.
- Upon successful checkout, the value of the rent will deduct from renter's wallet then adding to owner's wallet.

3.2.13. Admin Panel

- The software should have an Admin Panel to manage all the aspects of the software, such as
 - o Managing users.
 - o Categorizing the tool and equipment.
 - o Reviewing the rent requests.

3.3. Non-functional Requirements

3.3.1. Usability:

- The application shall have a user-friendly interface that is easy to navigate and understand.

3.3.2. Performance

- The application shall be able to handle a large number of users and tool and equipment listings without compromising performance.

3.3.3. Security

- The application shall incorporate security measures to protect user data and prevent unauthorized access to the application.

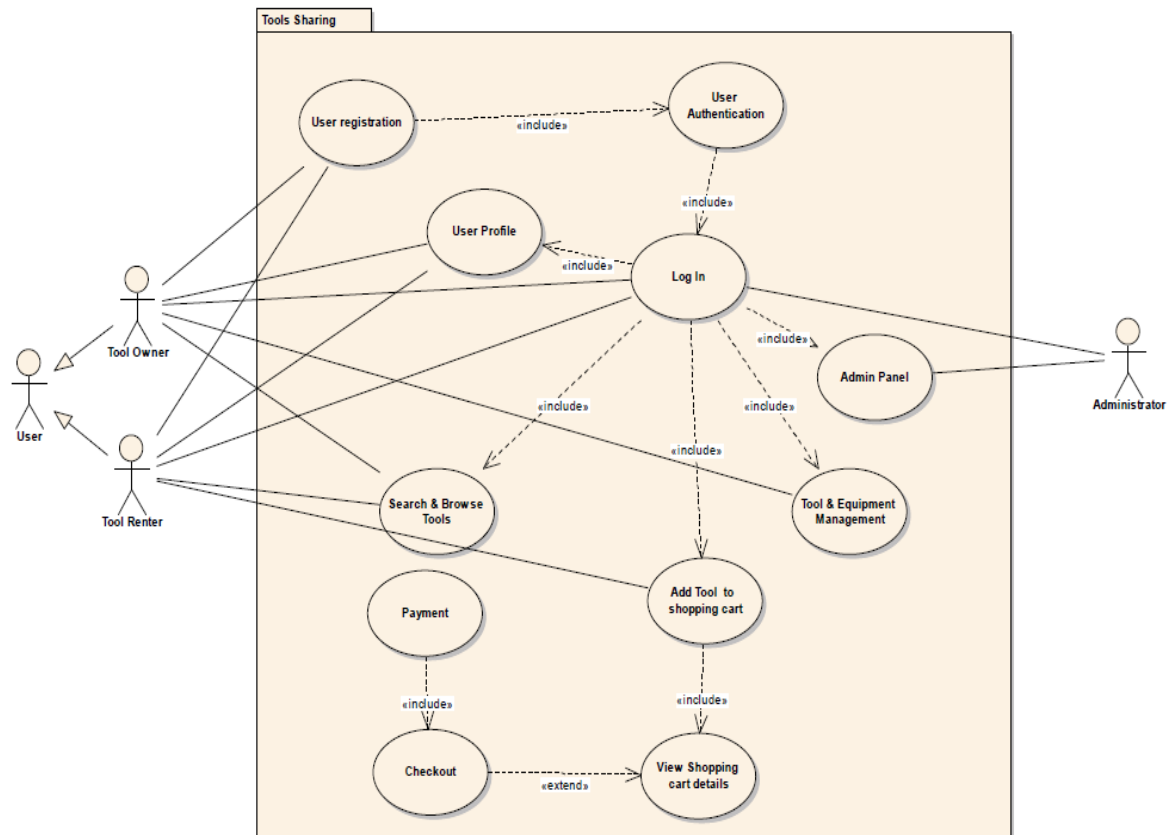
3.3.4. Compatibility

- The application shall be compatible with the latest web browsers such as Chrome, Firefox, and Edge for desktop and mobile devices.



4. Modeling Requirements

4.1. Use Case Diagram

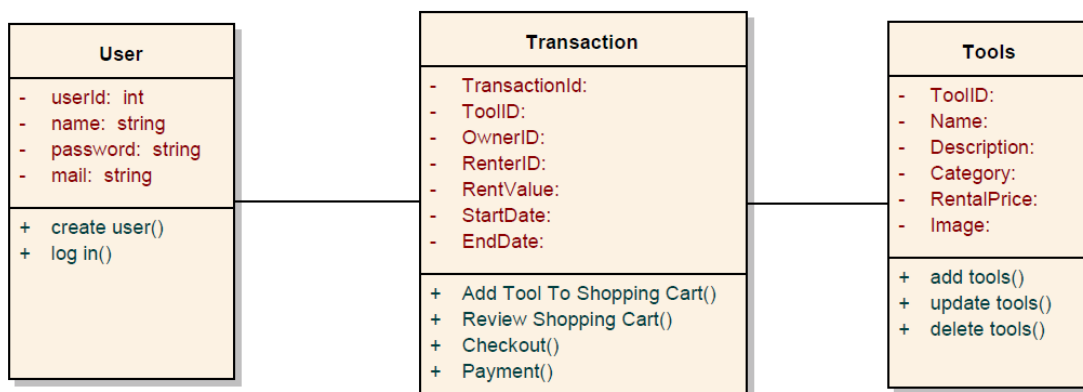


- Use case: User registration.
- Actors: Tool Owner, Tool Renter
- Description: The user creates an account in the application.
-
- Use case: User Authentication.
- Actors: Tool Owner, Tool Renter, System.
- Description: The system validates the users' credentials.
-
- Use case: Login.
- Actors: Tool Owner, Tool Renter, Administrator.
- Description: The user enters their credentials to log in to the application.
-
- Use case: User Profile.
- Actors: Tool Owner, Tool Renter
- Description: The user manages his profile.
-
- Use case: User registration.
- Actors: Tool Owner, Tool Renter
- Description: The user creates an account in the application.



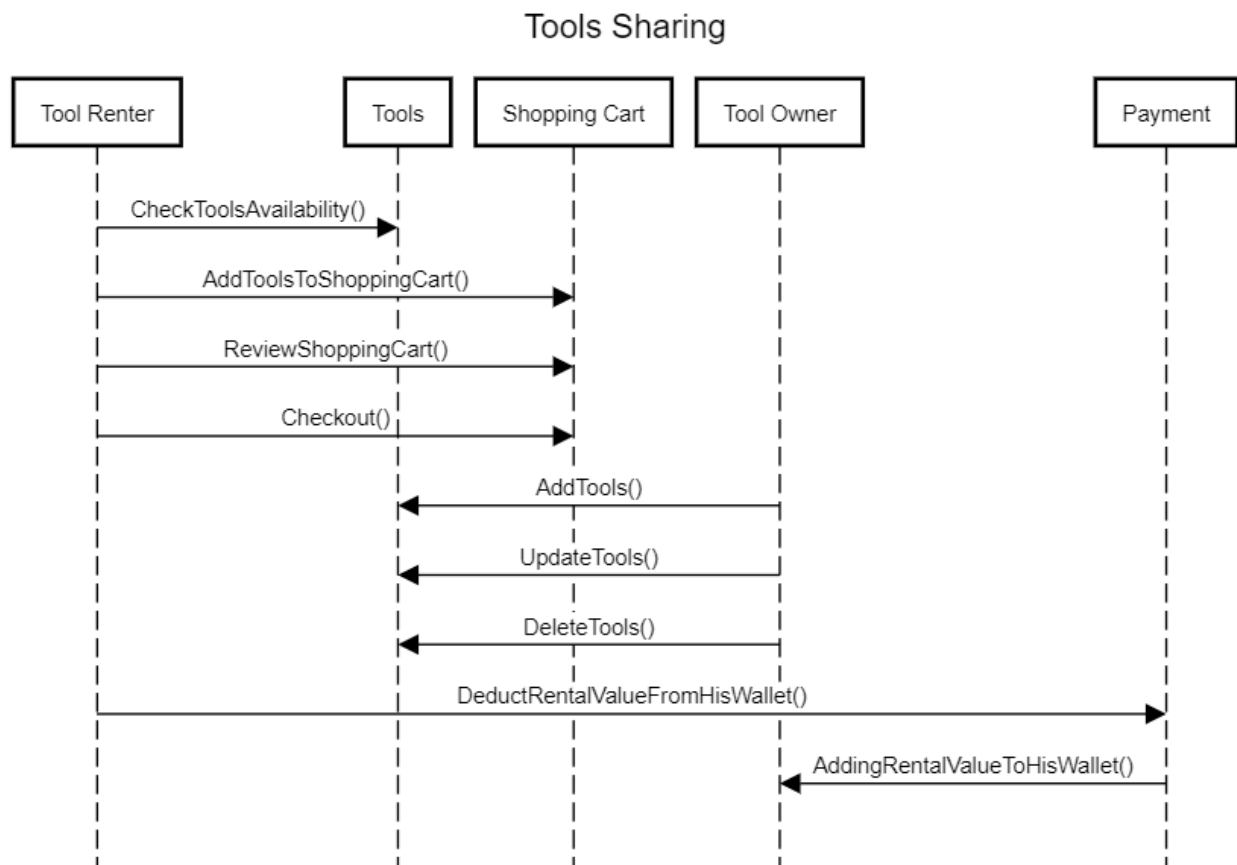
- Use case: Search and browse Tools.
- Actors: Tool Owner, Tool Renter
- Description: The user browses and searches for available tools and equipment.
-
- Use case: Tool & Equipment Management.
- Actors: Tool Owner.
- Description: The user manages his tools.
-
- Use case: Add tools to shopping cart.
- Actors: Tool Renter.
- Description: The user adds the tool to shopping cart.

4.2. Class Diagram



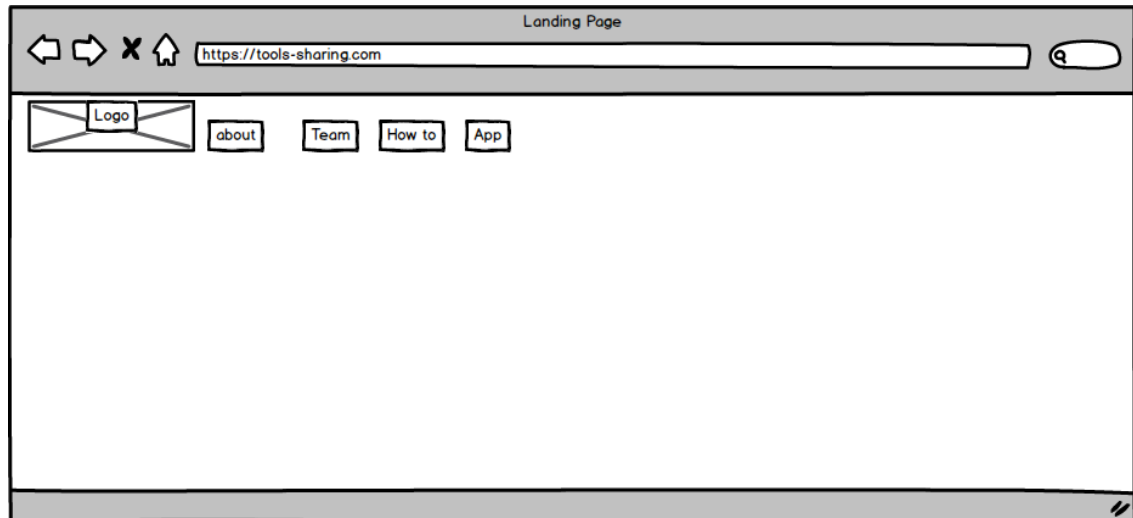


4.3. Sequence Diagrams

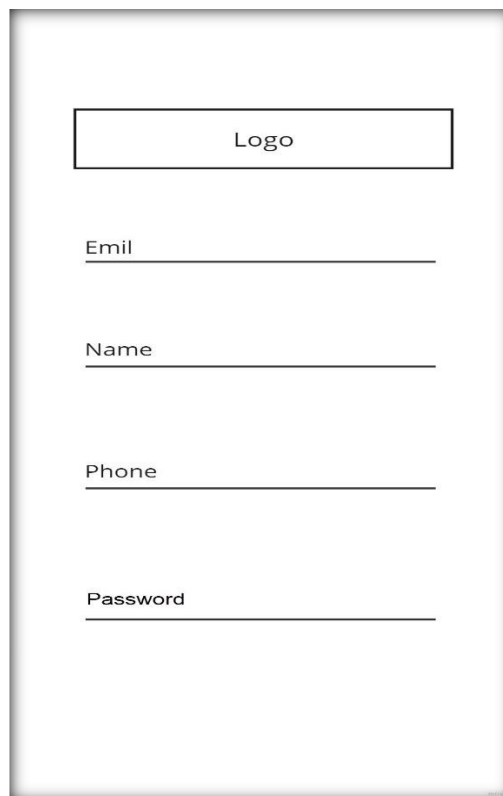


5. Prototype

5.1. Landing Page figure



5.2. Registration figure



The image shows a hand-drawn prototype of a registration form. It is a vertical rectangle with a light gray background. At the top is a rectangular box labeled 'Logo'. Below it are four text input fields, each with a label to its left: 'Email', 'Name', 'Phone', and 'Password'. The labels are aligned to the left of the input fields.

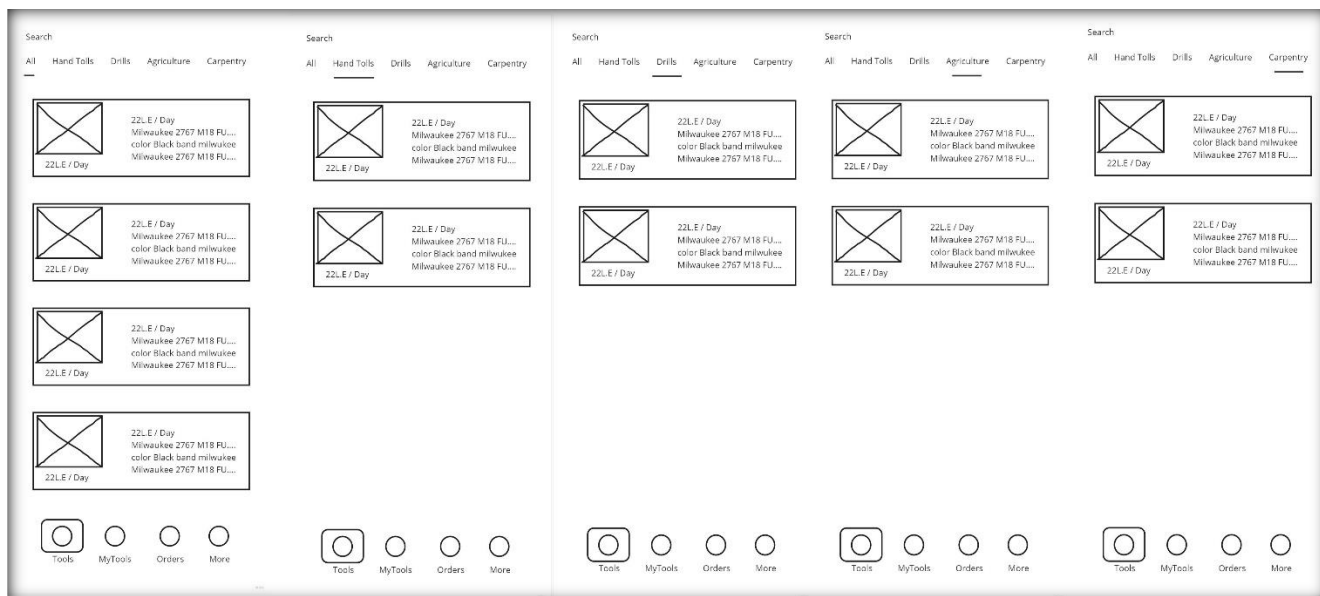
5.3. Login figure

Logo

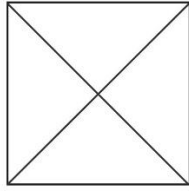
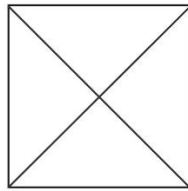
Email

Password


5.4. Tools tab figure



5.5. Product availability figure


					
<p>Day Price The Price for each 24 hour 10 L.E</p>	<p>Day Price The Price for each 24 hour 10 L.E</p>				
<p>description</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>description</p> <p>.....</p> <p>.....</p> <p>.....</p>				
<p>This tool is rented will be available on Tus, may 2023</p>	<table border="1"> <thead> <tr> <th>Days of rent</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>+ 0 -</td> <td></td> </tr> </tbody> </table> <p>you will bear the cost of any losse that occurs to the equipment its rent period</p>	Days of rent	Price	+ 0 -	
Days of rent	Price				
+ 0 -					

5.6. My Tools tab figure




Logo


No Tools found




Tools



MyTools

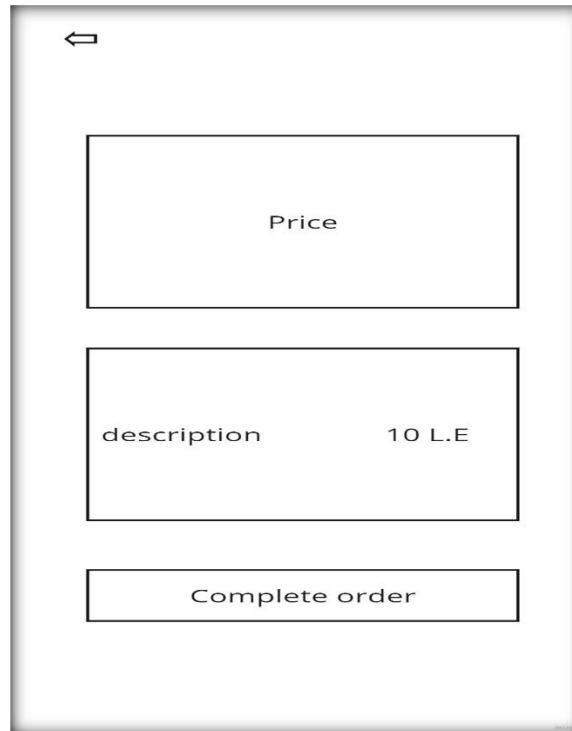


Orders

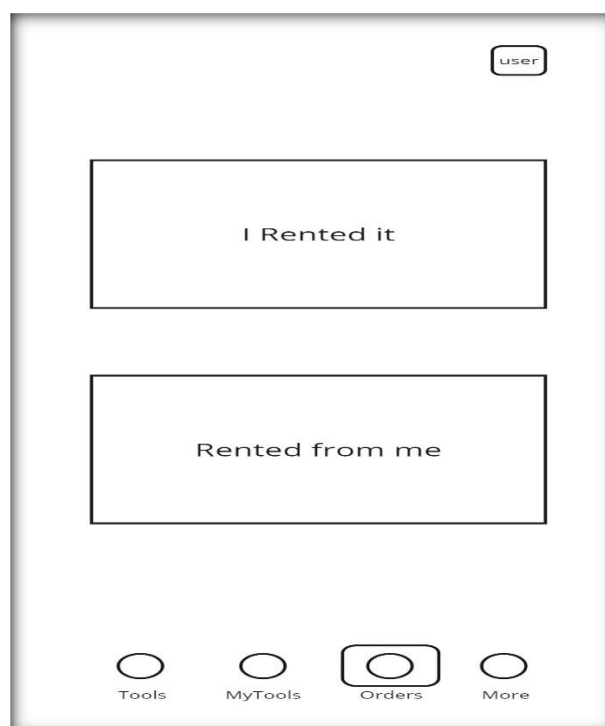


More

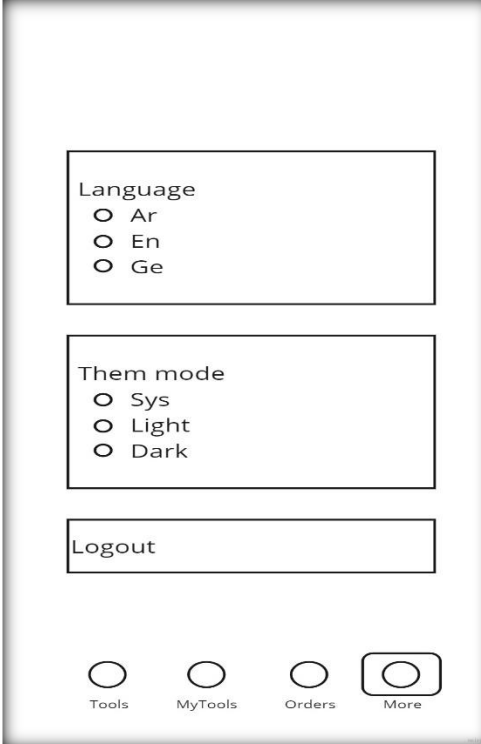
5.7. Shopping Cart figure



5.8. Order tab figure



5.9. Settings (more) tab figure



The screenshot shows a mobile application interface for the 'Settings (more)' tab. It features three main sections: 'Language' with radio buttons for 'Ar', 'En', and 'Ge'; 'Them mode' with radio buttons for 'Sys', 'Light', and 'Dark'; and a 'Logout' button. At the bottom, there is a navigation bar with four icons: 'Tools', 'MyTools', 'Orders', and 'More' (which is highlighted with a square border).

Language

- ☐ Ar
- ☐ En
- ☐ Ge

Them mode

- ☐ Sys
- ☐ Light
- ☐ Dark

Logout

Tools MyTools Orders More