UNIVERSITY OF WOLLONGONG AUSTRALIA

SIM Global Education

CSIT321 – Final Year Project
Final User Manual

Group: FYP-25-S2-31

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Distribution List

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Record of Revision

Revision Date	Description	Section Affected	Changes Made by	Version after Revision
20 June 2025	Initial document creation	All	Jeffrey	v1.0
21 June 2025	Manual for Mobile Application	Mobile Application	NanNan	v1.1
21 June 2025	Manual for Desktop Application	Desktop Application	Malvin	v1.2
21 June 2025	Manual for QR Pairing	QR Pairing	Alvin	v1.3
15 Aug 2025	Manual for Mobile Application	Mobile Application	NanNan	v2.0

Content Page

Mobile Application

System Requirements

Operating System: Android 6.0 ‘Marshmallow’ (API level 23) or later
Architecture: ARM64
Internet: A network to which both mobile and PC can connect (Required for pairing)
Camera: Rear-facing camera with autofocus (Required for QR scanning)
Storage: 1GB free space recommended, 500MB minimum

Setup Guide

Installation

1. Download the installation package (.apk) from the website

   https://mxtrify.github.io/FYP-25-S2-31/download.html

2. Install the app using the APK on a device with at least Android 6.0

Connection

1. Connect the mobile device to the same WiFi that the desktop device is connected to
2. Open ‘Settings’ within the app
3. Connection through scanning QR code
   3.1. Choose “Connect to PC - Scan QR Code”
   3.2. Allow permission to use device camera when prompted
   3.3. Press the “Scan” button to start scanning for QR
4. Connection through manual input
   4.1. Choose “Connect to PC - Manual Input”
   4.2. Input the IP address, port number and token as shown on the desktop app
5. Wait for textual feedback on top right corner to indicate status of connection (Eg. WebSocket Connected.)

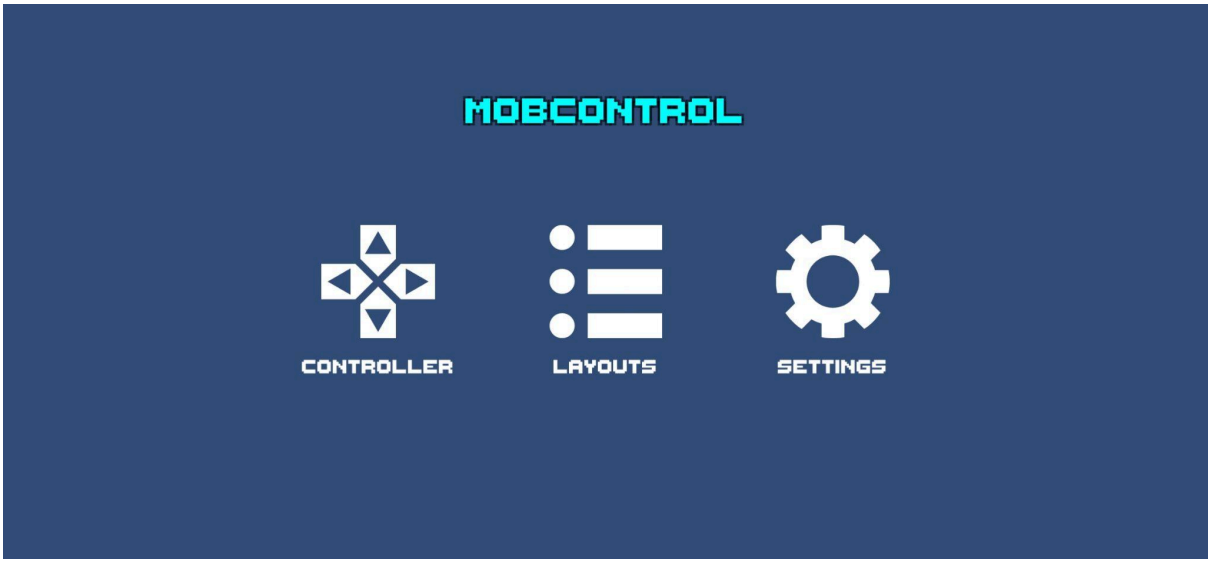
Page Descriptions

Home page

The Home page consists of an overview of the app, which contains three main icons, each representing a different component of the app:

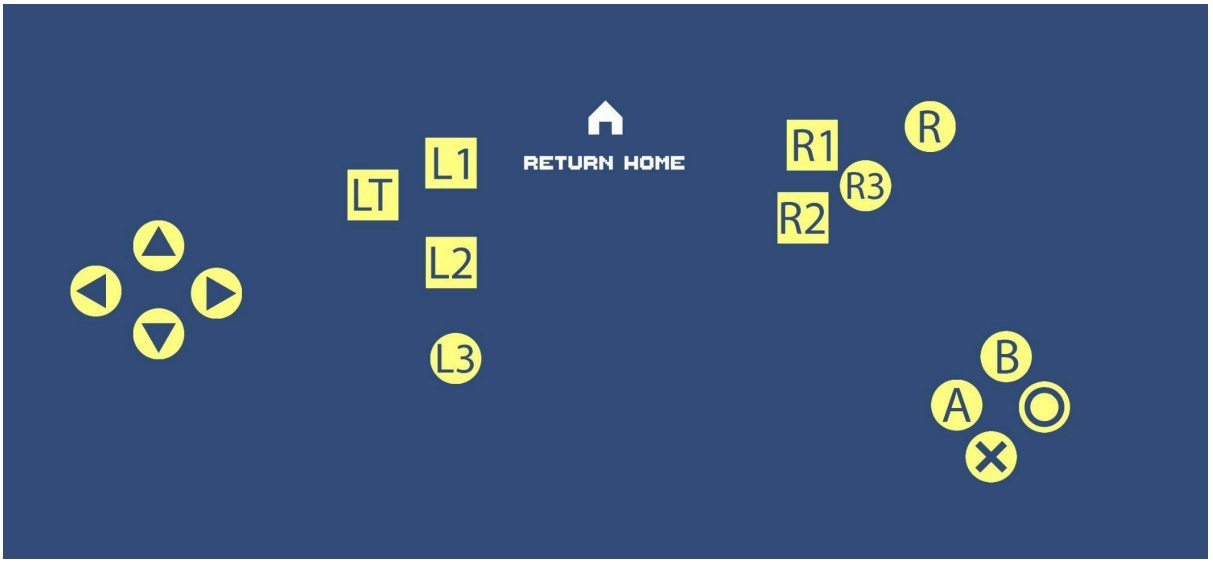
- Controller
- Layouts
- Settings

From here, the user can navigate to the other pages of the app.

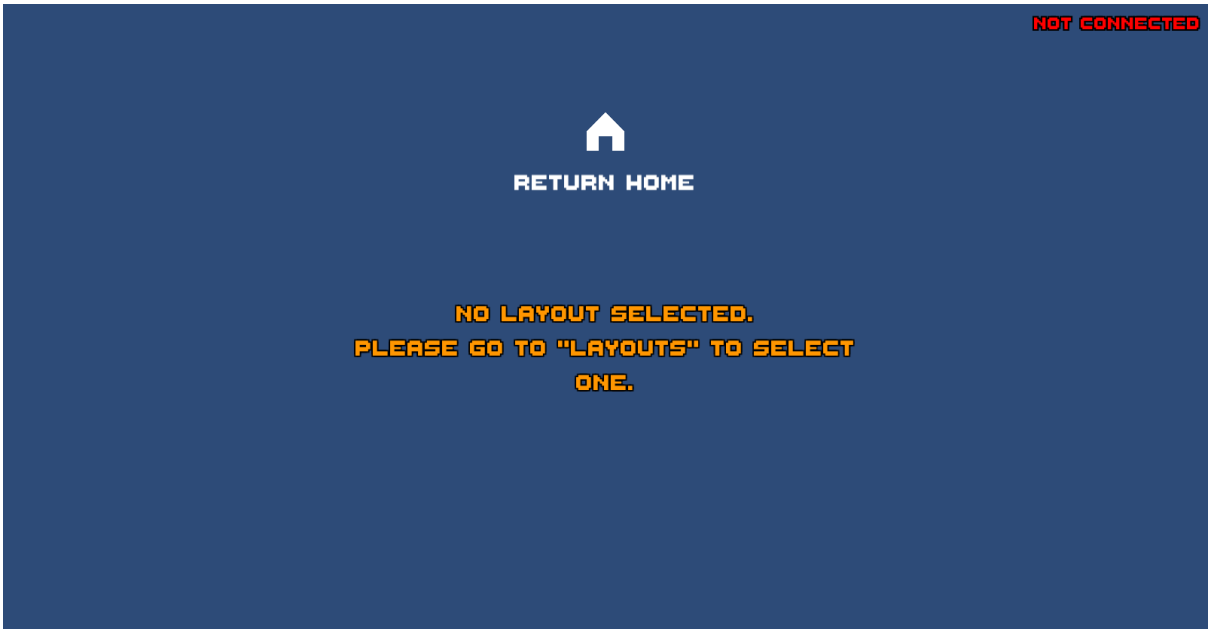


Controller page

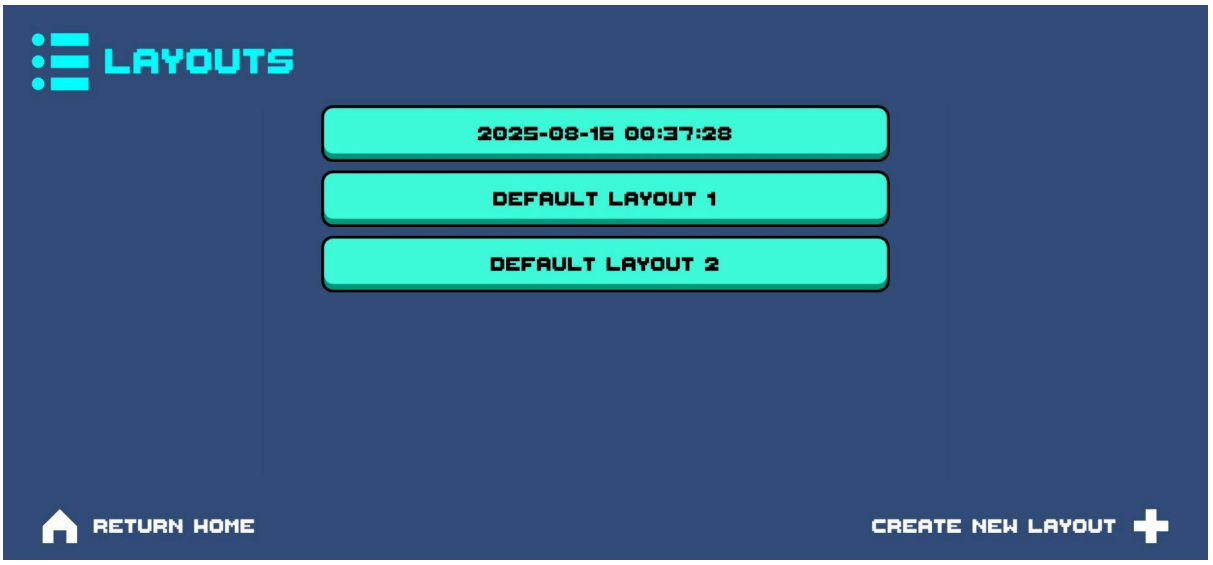
The controller page is where the user can activate the controller to use to play games.



If there was no valid controller layout selected prior, it will show a message to tell user to select a layout from “Layouts”.

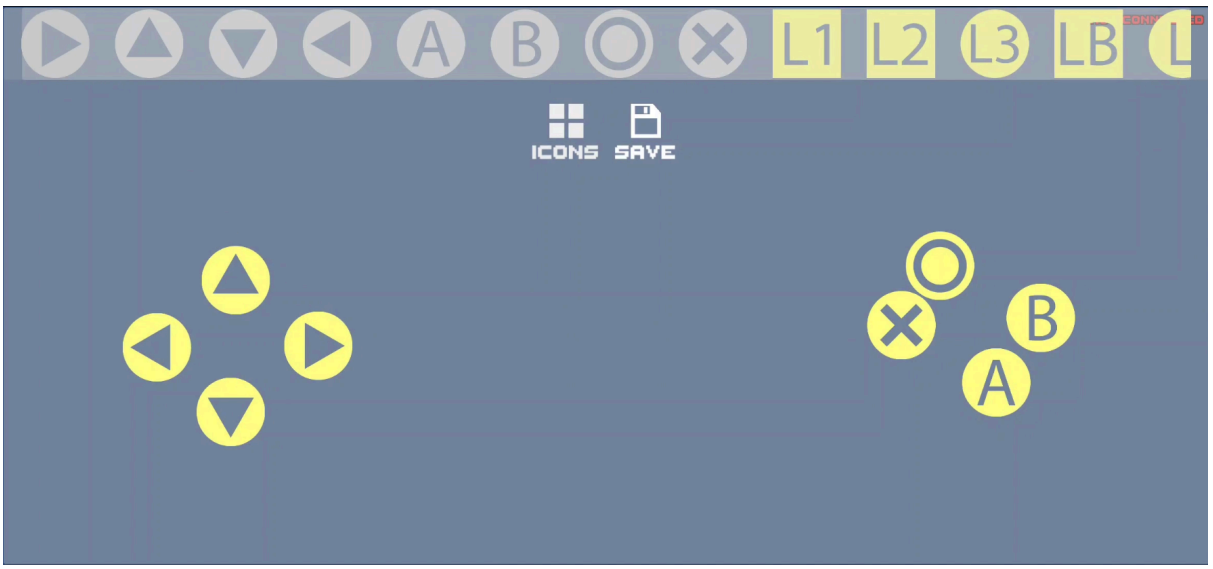


Layouts listing page



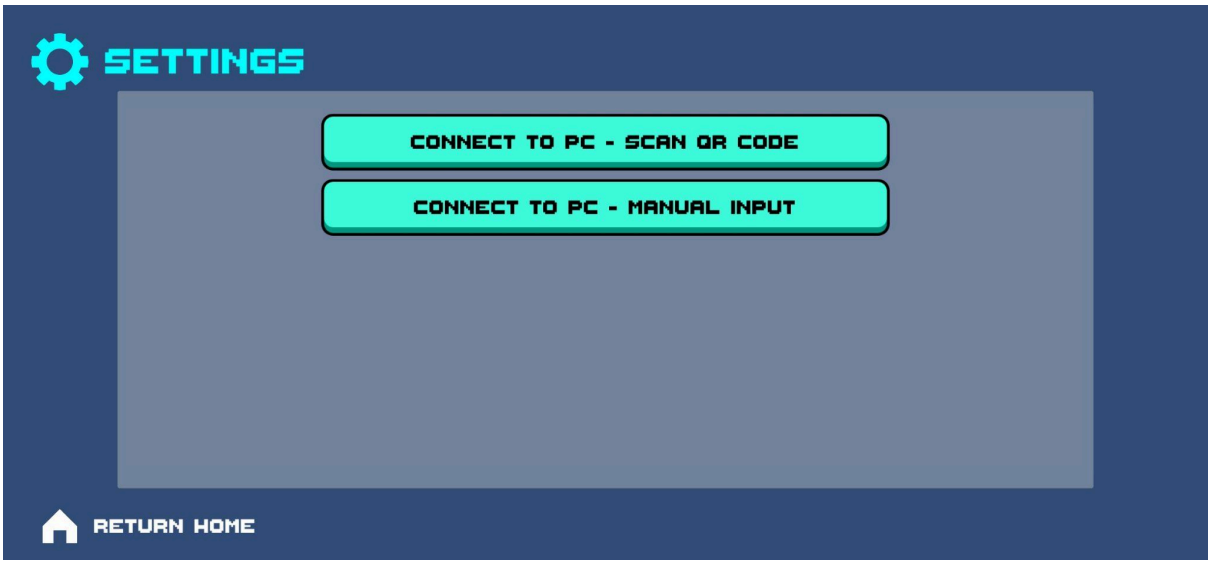
Layout viewing page

Layout editor page



Settings page

In the Settings page, the user can find the option to connect to the PC by scanning a QR code or manual input



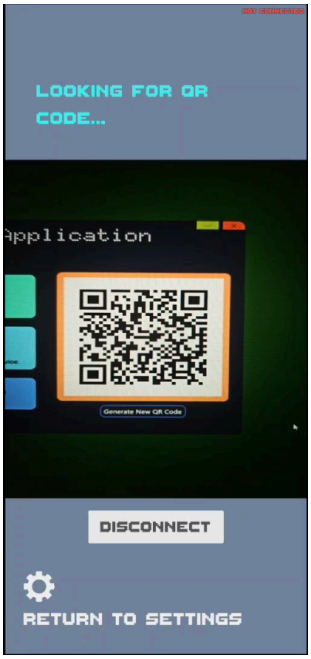
QR Code Scanner page

The user can use the camera function here to scan the QR code that will be generated on the desktop app to make the connection.

Features

- QR Code Scanner integrated with the device's camera
- Visual feedback during the connection process

If the scan was valid, the IP address will be stored, and a connection will be made. The user can press the "scan" button to try to scan again.

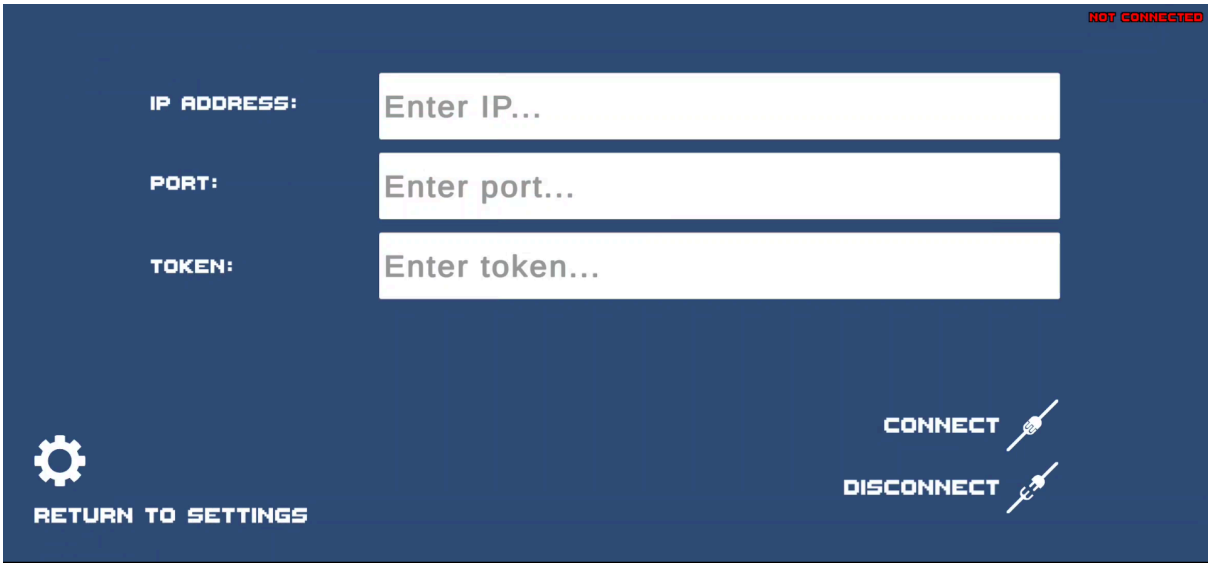


Possible troubleshooting methods for problems faced

- Camera Not Working: Check permissions and restart the application
- Pairing Failed: Ensure both devices are on the same network
- QR Code Not Recognised: Clean the camera lens and ensure good lighting
- Connection Timeout: Check the internet connection and try again

Manual Input

Input the IP address, port and token shown on the desktop app



Desktop Application

System Requirements

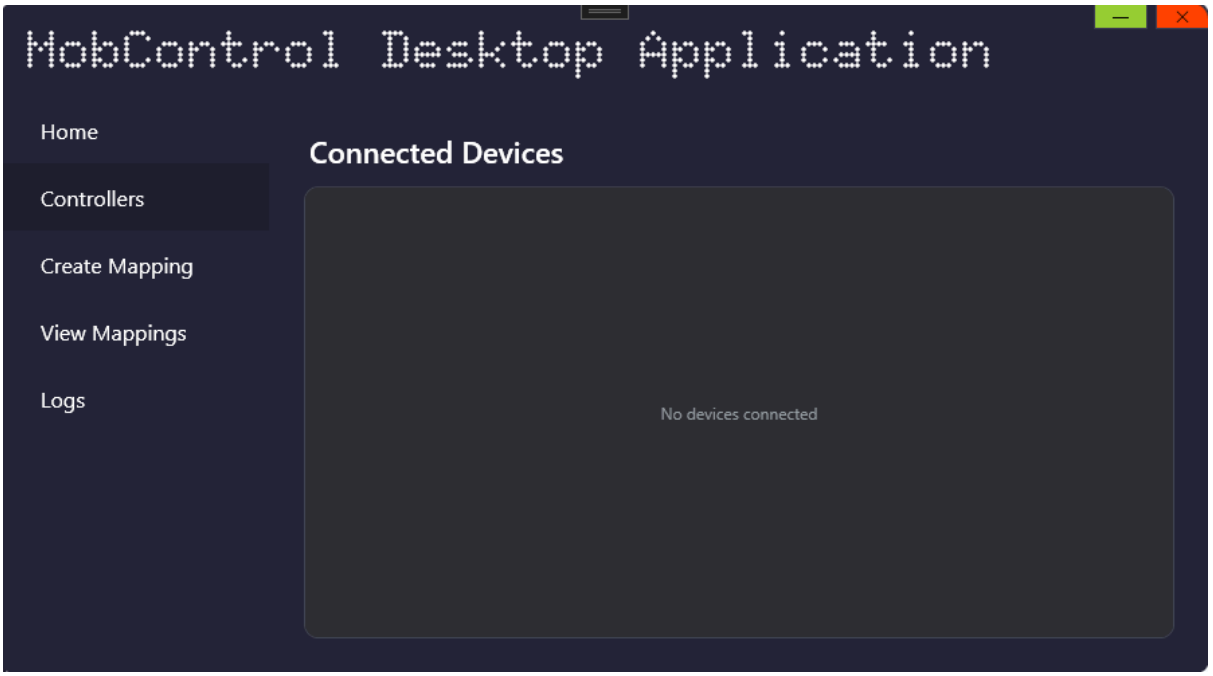
- OS: Windows 11 x64 (fully updated)
- RAM: 16 GB (for smooth multi-project builds)
- CPU: Quad-core Intel i5/i7 or AMD Ryzen 5+
- Disk: SSD with at least 50 GB free space
- .NET SDK: .NET 8 SDK

Setup Guide

Desktop Installation

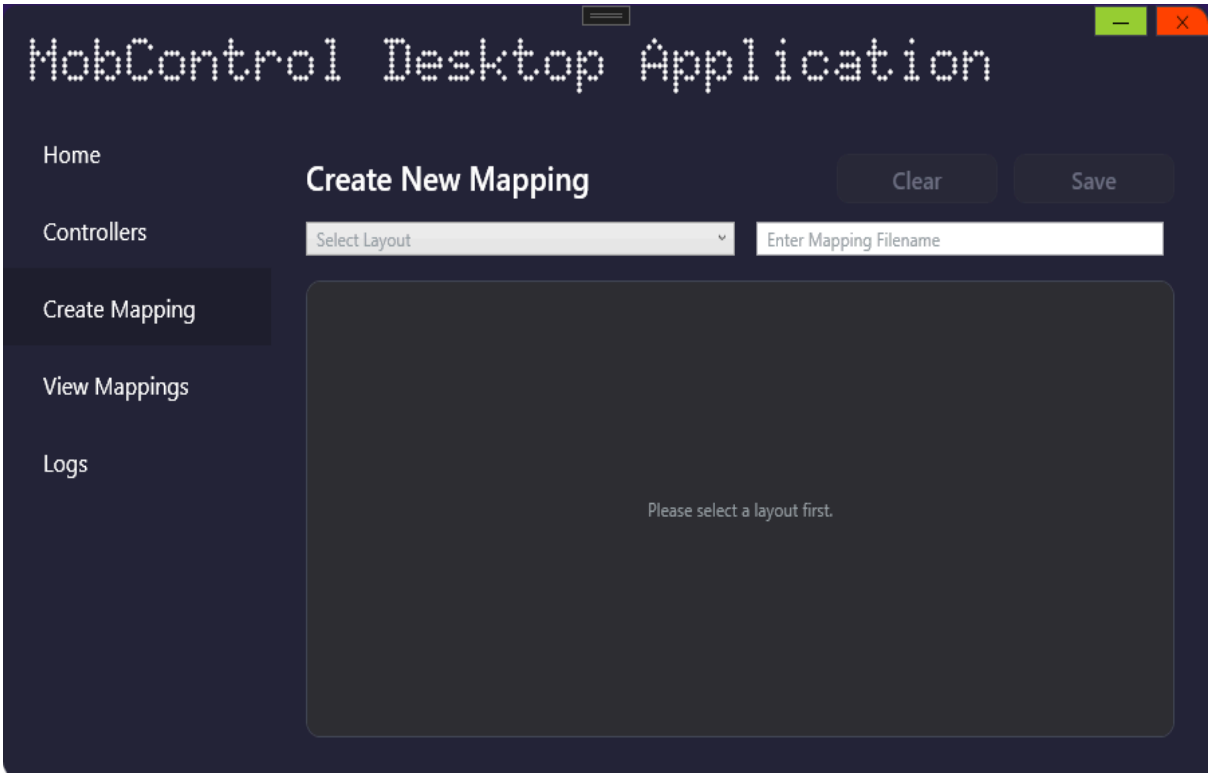
1. Download the ZIP file on the website
    - https://mxtrify.github.io/FYP-25-S2-31/download.html
2. Unzip the file
    - If there is trouble unzipping with the default Windows unzipper/extract, try unzipping with 7-Zip
3. Run setup.exe
4. Install the Program
    - Follow the installation wizard prompts
    - Accept the license agreement
    - Choose installation directory (default recommended)
    - Click "Install" and wait for completion
5. Permissions
    - Disable the Windows Defender Firewall
6. Initial Setup
    - Launch the application from the desktop shortcut or the start menu
    - Connect the Desktop Application and Mobile Application by scanning the QR code

Page Descriptions



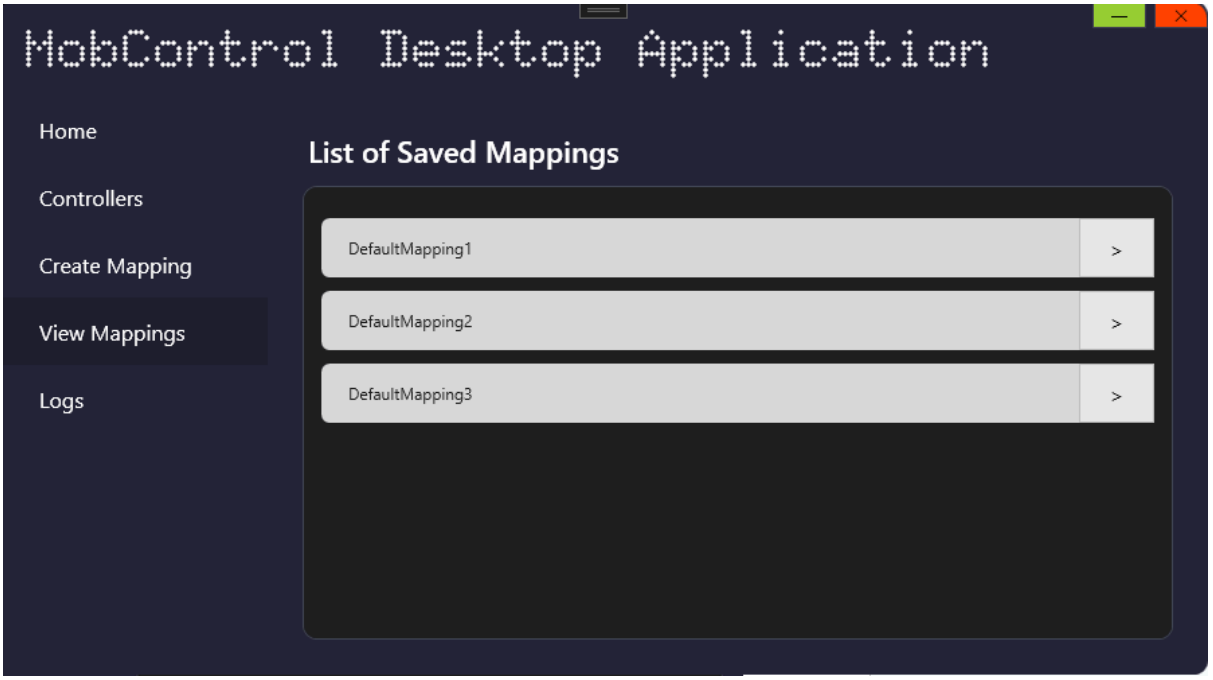
Controller page

The Controller page is a desktop application's interface where multiple devices are listed with their device names, input profiles, and options to choose which players 1 or 2 or etc to run what game mapping, indicating a system for managing connected devices and their configurations.



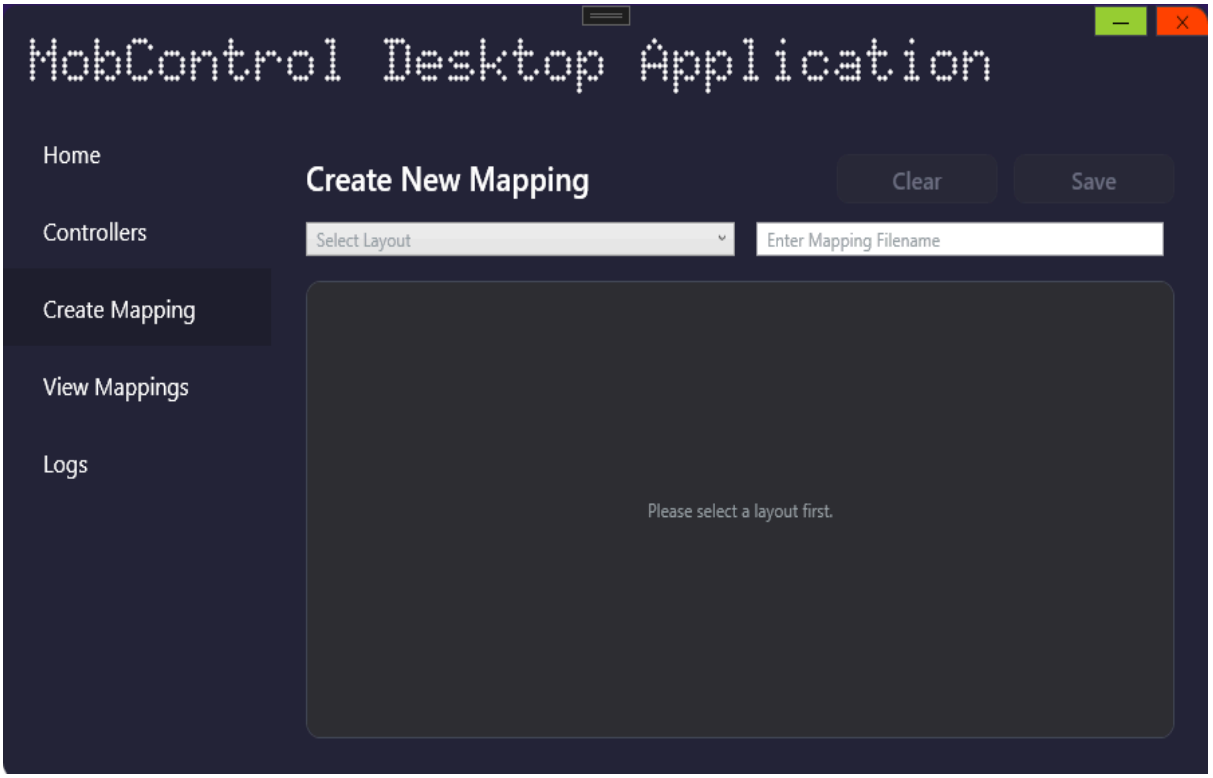
Create Mapping page

The Create Mapping page is a predefined configuration that maps input devices, defines how a connected device translates input into standard PC inputs based on the layouts.



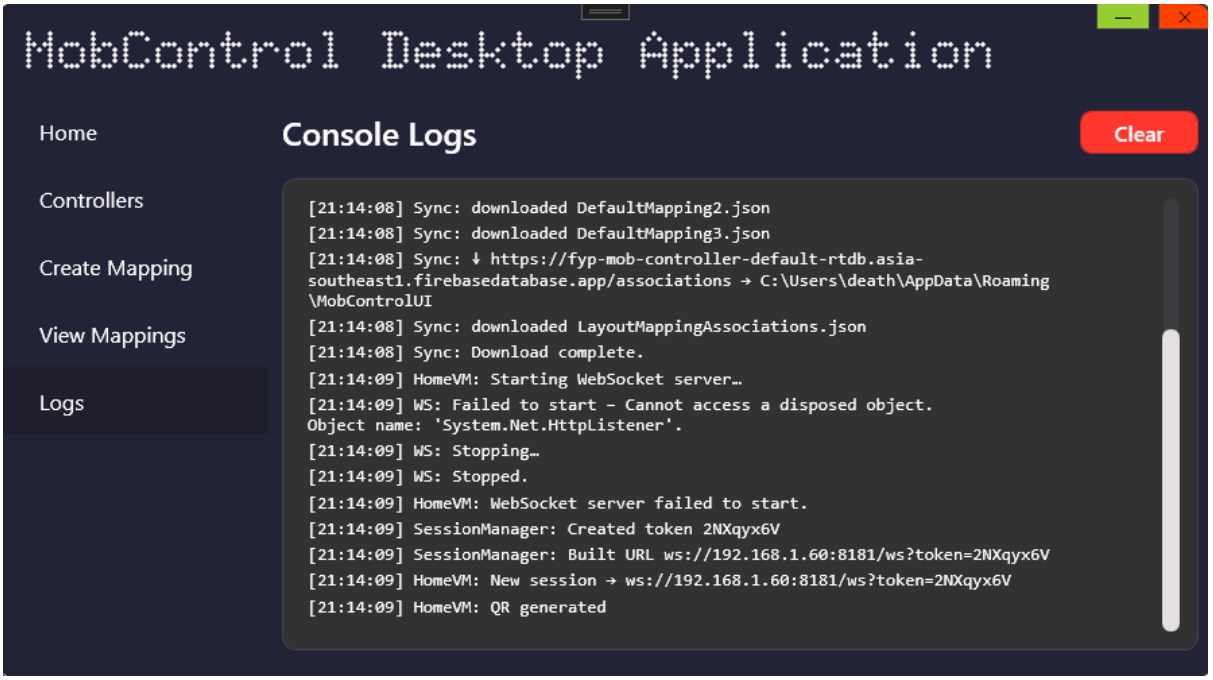
View Mapping page

The View Mapping page is a list of predefined configuration of mapping that you have created and you could also update and delete the mapping when you select the mapping and inside you could make changes to the mapping by updating or delete the mapping that you have created.



Create an Input Mapping page

The Create Input Mapping page is a section in the application where users can select their layout and name their mapping file for connected devices to use. It is essential for tailoring how input controls for the types of games from a mobile device are translated into traditional PC/game actions.



Logs page

The Logs page is a section in the application where users can view the backend of selection you have done in the app devices like create mapping, view mapping, qr generated and such.

Home page

Home page is used to quickly connect devices by scanning a QR code that contains connection information (like IP address, pairing key, or profile ID) and also whether the websocket is running and how many connected devices are connected.

Device Pairing

Step By Step

<u>QR Code</u>

1. The user needs to use the camera function on the app to scan the QR code that will be generated on the desktop app to make the connection.

2. The Mobile will proceed to connect to the Desktop while the mobile app sends a secure request to the desktop/server, which includes the session ID.

<u>Manual Input</u>

1. Refer to the string under Session Information; the details are presented in the format
   ws://{IP address}:{port}/ws?token={token}

2. Input the corresponding parts into the mobile app

3. The desktop confirms the Pairing request and, if valid, displays the corresponding number of connected devices.

Ways to troubleshoot if you cannot connect:

1. Ensure both mobile and desktop devices are connected to the same Local Area Network (LAN)
2. Both devices register the network as private (so that they are discoverable within the network)
3. The desktop relies on port 8181 to listen to connections; it may be closed by default, so manual opening is needed.
    a. Open Windows PowerShell

    b. Type in :

    ```
    New-NetFirewallRule -DisplayName "MobControl port"
    -Direction Inbound -LocalPort 8181 - Protocol TCP
    -Action Allow -Profile Private
    ```

    c. Press Enter, and the socket will be opened. Connection should be possible now.

    d. To close the port after use :

    ```
    Remove-NetFirewallRule -DisplayName "MobControl
    port"
    ```