# GARAGE DOOR PROJECT

USER MANUAL

INTRODUCTION

Garage doors are heavy and hard to open, is one of the reasons why we have automatic garage door opening and closing system, which made the process easy and handy. We have many applications available for this concept. Each application provides different features and uses different parts of hardware to implement the application.

In this project we are focusing on developing a mobile application which acts as the user-interface and sends signals or data to the server. We also have a backend server which receives the data from the user-interface and performs the task as commanded. The goal of our project is to send data from one @atsign to another @atsign using @atkeys.

HARDWARE COMPONENTS

Raspberry Pi Pico W	:	1
Pico Headers	:	2
Solderless Breadboard	:	1
PCs Jumper Wires	:	10
Resistors	:	3
Hall Magnetic Sensor	:	1
Rotary Encoder	:	1

Raspberry Pi Pico W:
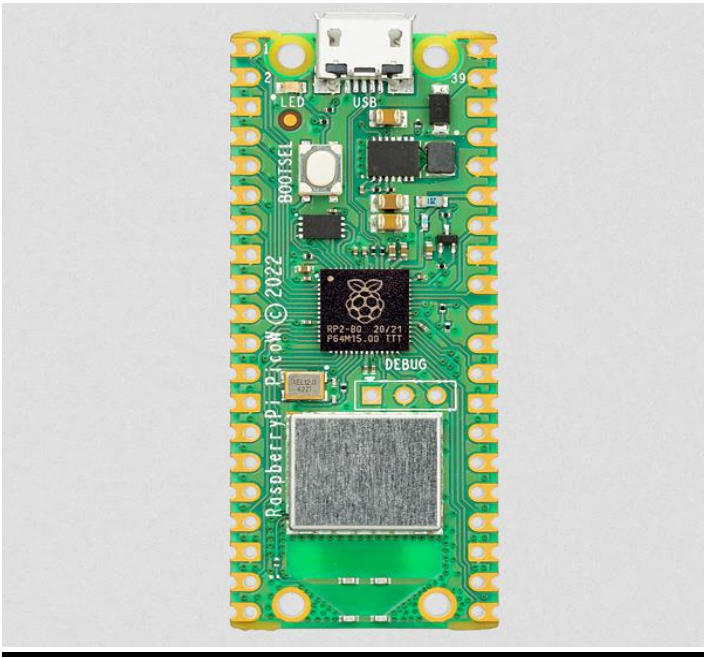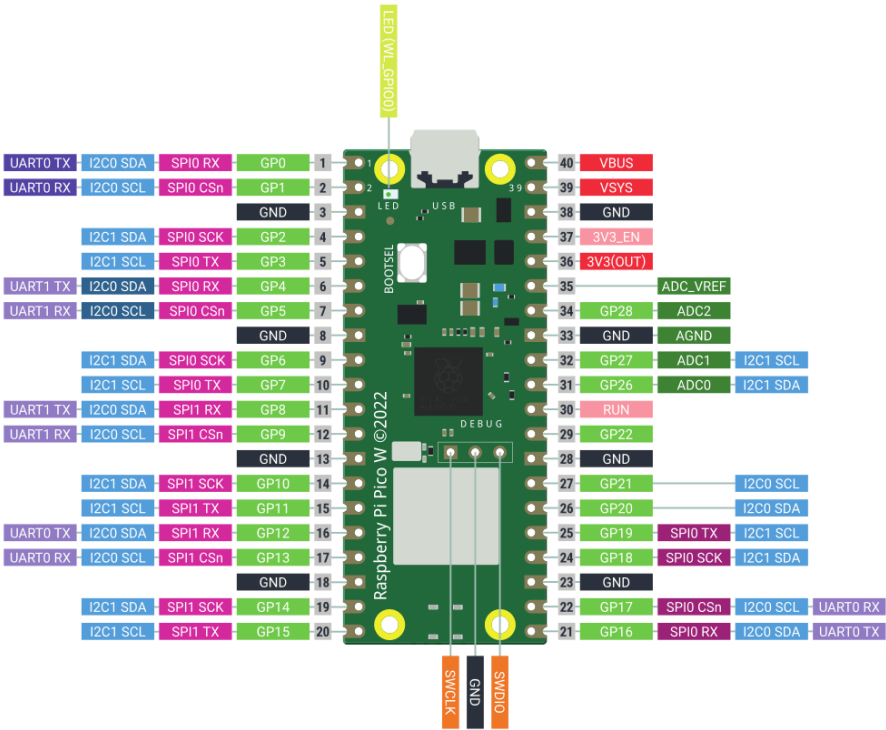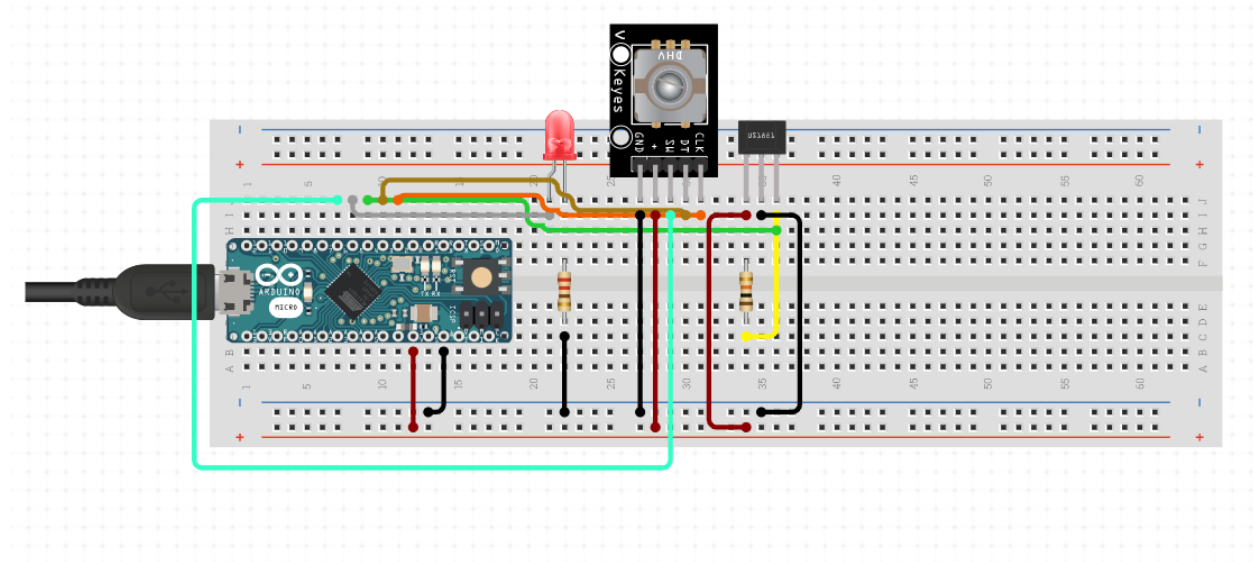
CIRCUIT

- We connected rotatory encoder, hall effect sensors, and raspberry pi Pico w with the help of solderless breadboard and jumper wires.
- The output is shown with through the LED which is connected to one of the Pico's output pins.

USER-INTERFACE

The user-interface is a mobile application which uses wireless communication system to send commands to @atsign server. The operating of the application is a few steps process, which is both easy and simple.

- As soon as we open the app we are greeted with the @atsign login page, where the user needs to login through the app using @keys.
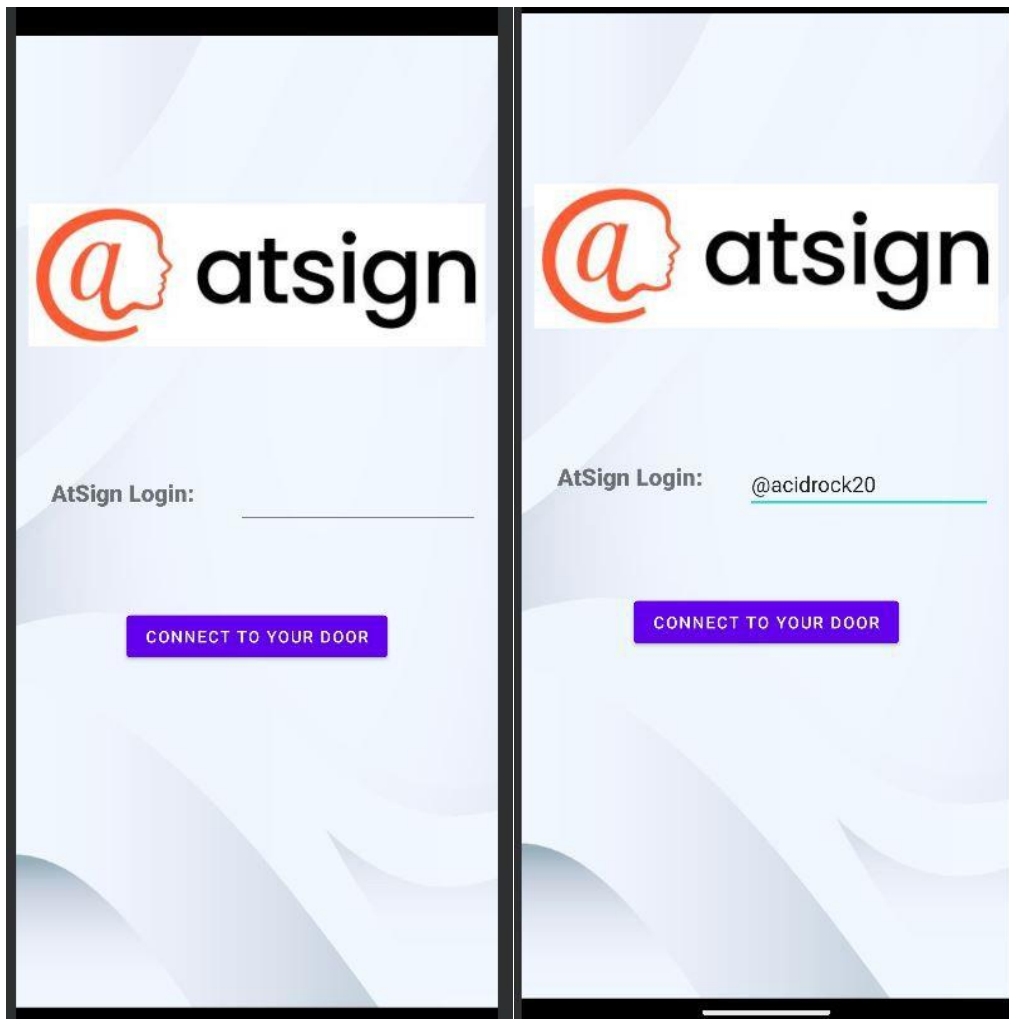
> ➤ After successfully logged in into you are application, we have an interface which basically shows the operations (like door close, door open) that can be performed using the application.
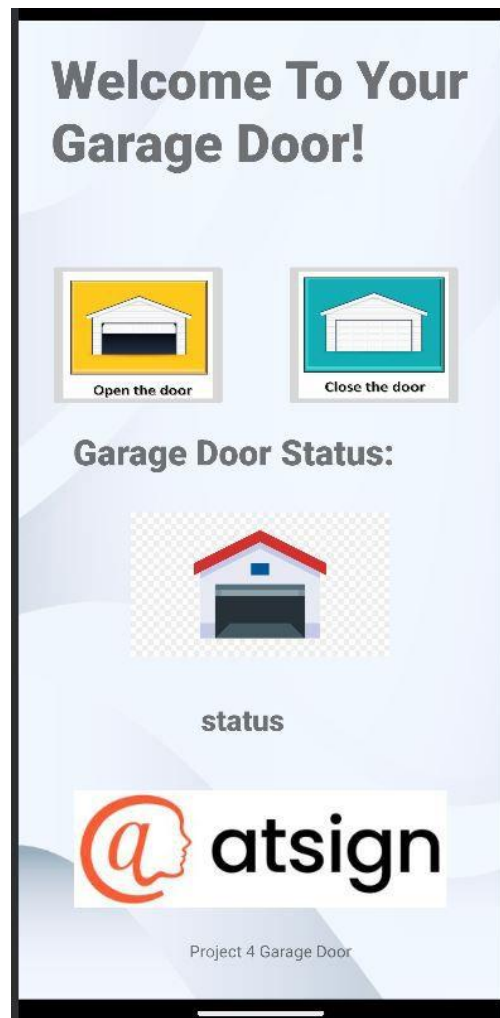
➢ If the user wants to open the garage door, they just need to select the "Open the door" option displayed on the screen. Similarly, it goes same for closing garage door function.

➢ Status is the feature which tells the users whether the garage door is open or close.
OR
In other words, status returns the current state of the garage door (close, open).
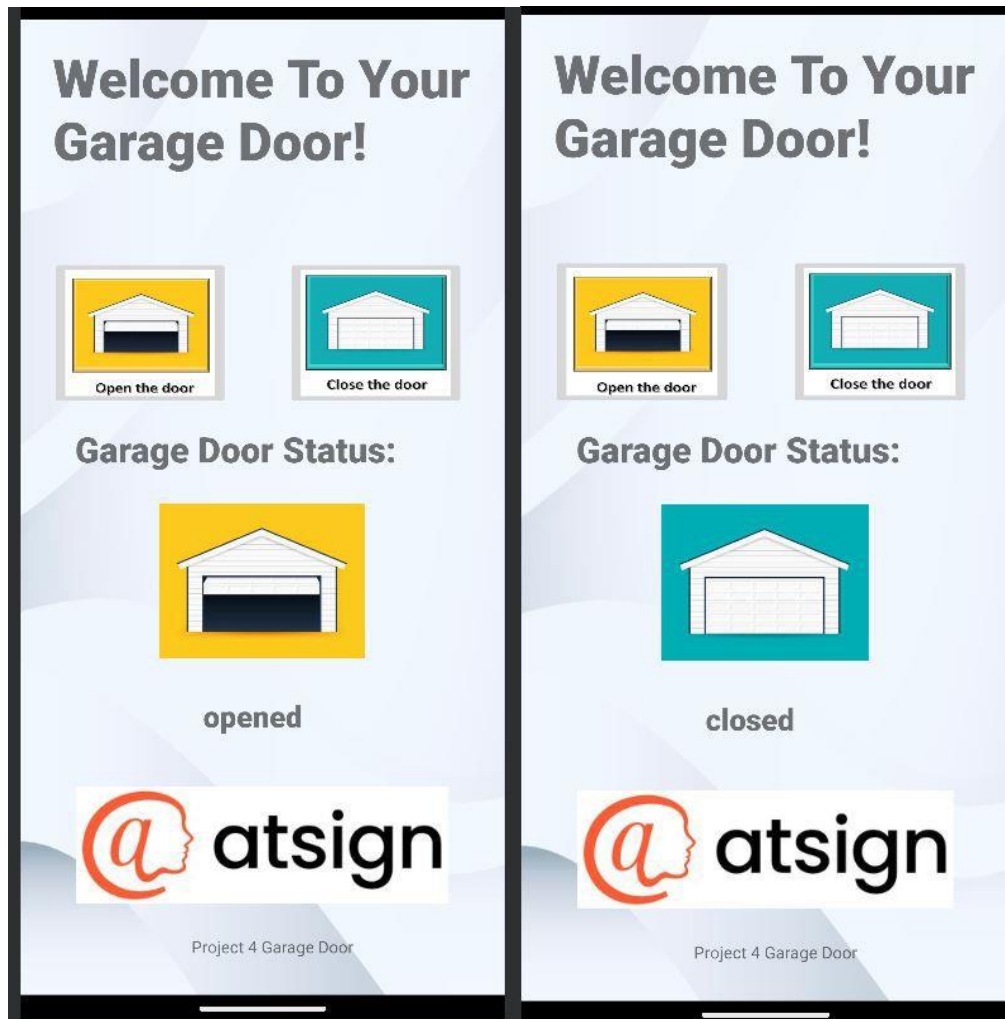
BACK-END SETTING

➢ First the server needs to get connected to the local Wi-fi.

➢ Connect the @atsign app with the @atsign server. After the connection has established, now the data or signals send from the app are received by the server.

➢ As the data is send from the app the server will receive it and control the garage door according to the command received from the @atsign app. For

example, if the data sent from the app is "Open the door" then that message is received by the server and executes the command "Door = UP". And it's vice versa for "Close the door" function.

➢ For server-side activities we also added one more operation that is "Door = Stop", this function depends on Sensors which detect the objects. This operation is executed to stop the door while performing "Close the door" operation, if there is any object detected near the fixed radius the door temporarily stops for few seconds and executes "DOOR = UP" command.

This is how we can implement and access this garage door project.

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