

The background of the entire page is a pixelated representation of the Frogger game. It features a blue sky with white clouds at the top, a green grassy area with small yellow flowers below it, a grey brick wall, and a grey road with white dashed lines. At the bottom, there is a brown ground area with a green frog and some grey rocks.

INSTRUCTION BOOKLET

**FROGGER**

**GAME TEAM 7**

# TABLE OF CONTENTS

STORY .....

YOUR GO-BOARD .....

CONTROLLER OPERATION .....

PLAYING THE GAME .....

GET HELP .....

SAFETY AND HANDLING .....

# STORY

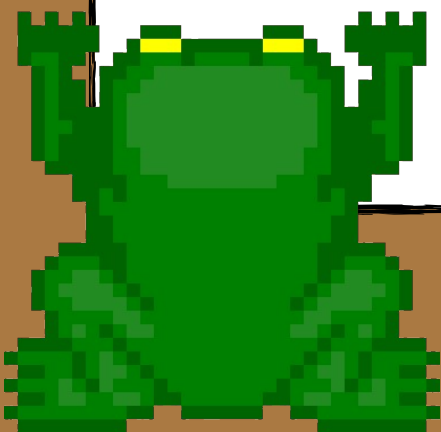
Meet Froggy, a brave little frog with a big heart and a simple mission: to reunite with his family in their cozy home by the lake. The lake is where Froggy's family waits, surrounded by lush greenery and gentle waters, a place where they spend their days together. But for Froggy, the journey back is far from easy.

One stormy night, strong winds swept Froggy far from his home, carrying him across rivers, forests, and busy roads filled with speeding cars and bustling traffic. Now, Froggy finds himself on the other side of a dangerous highway, with only one goal in mind: to cross all the obstacles and make it back to the safety of the lake.

Your goal is to help Froggy navigate through these perilous roads and reach the lake, where his family eagerly awaits. But be careful! The journey is filled with challenges!

Froggy's family is counting on you! With your help, Froggy can overcome the challenges and hop his way back home, where his loved ones await with open arms (and webbed feet). But remember, time is of the essence, and you'll need quick reflexes and sharp thinking to guide Froggy safely through each level. Will you be the

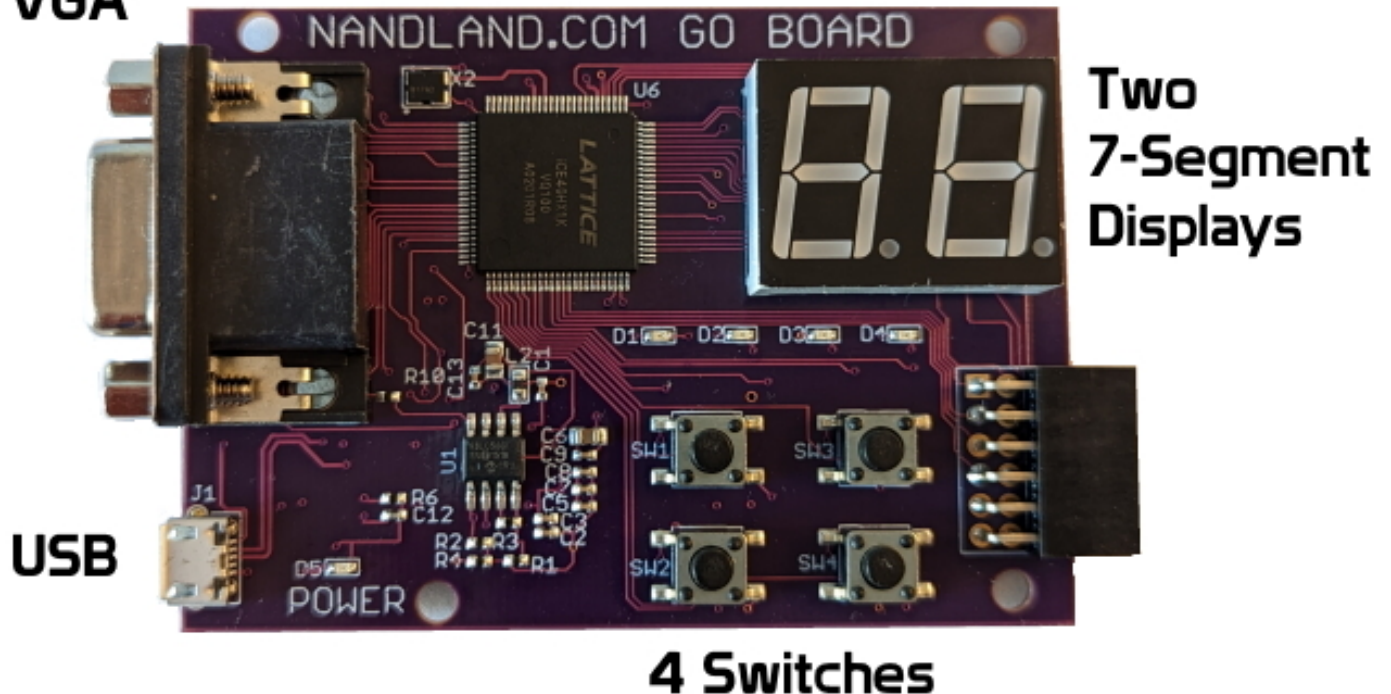
one to guide Froggy back to the warmth and safety of his family by the lake? The adventure starts now—help Froggy find his way home!



# YOUR GO-BOARD

This section is dedicated to helping you set up your Go-Board. Make sure that your Go-Board matches the model shown below, as this guide is specifically designed for this board. If your board differs from the one described, please obtain the correct model before proceeding.


**VGA**



**Two  
7-Segment  
Displays**

**4 Switches**

# SET UP AND GET STARTED

 **WARNING:** *To play, you will need to perform some manual operations with the board. Be mindful that Go-Board can generate significant heat, especially during extended periods of use. Always allow the board to cool down before handling it directly to avoid burns.*

## First steps with Go-Board

It takes just a few minutes to get up and running with Go-board.

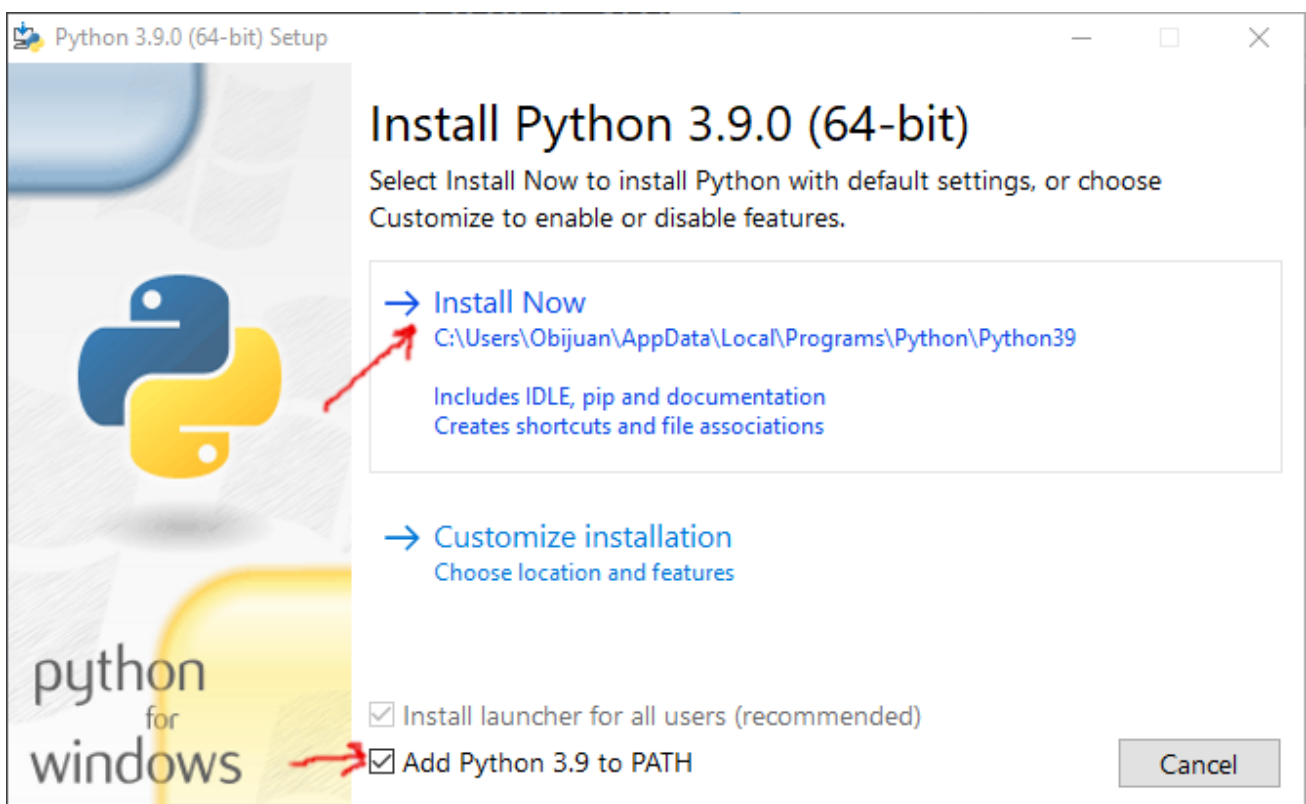
## Flashing the board

To start playing, you need to flash your Go-Board. Follow these instructions carefully:

## Step 1: Prepare Your Computer

### 1. **Download Python** (if you don't already have it):

- Ensure you download Python version **3.9 or higher**.
- Run the downloaded file.
- During the installation, **make sure that “Add Python 3.X to PATH” is checked**.
- Click **Install Now** as shown in the image below.



## 2. **Open Command Prompt as an Administrator:**

- On **Windows**, right-click the Command Prompt and select **Run as Administrator**.
- On **macOS**, use **Terminal**.

## **Step 2: Install Required Software**

### 3. **Install Apio:**

- In the Command Prompt/Terminal, run the following command:

```
python -m pip install apio
```

- **Install all packages** required by Apio:

```
apio install -a
```

## Step 3: Connect the Go-Board

4. **Plug the Go-Board** into your computer using a USB cable.

5. **Enable Drivers:**

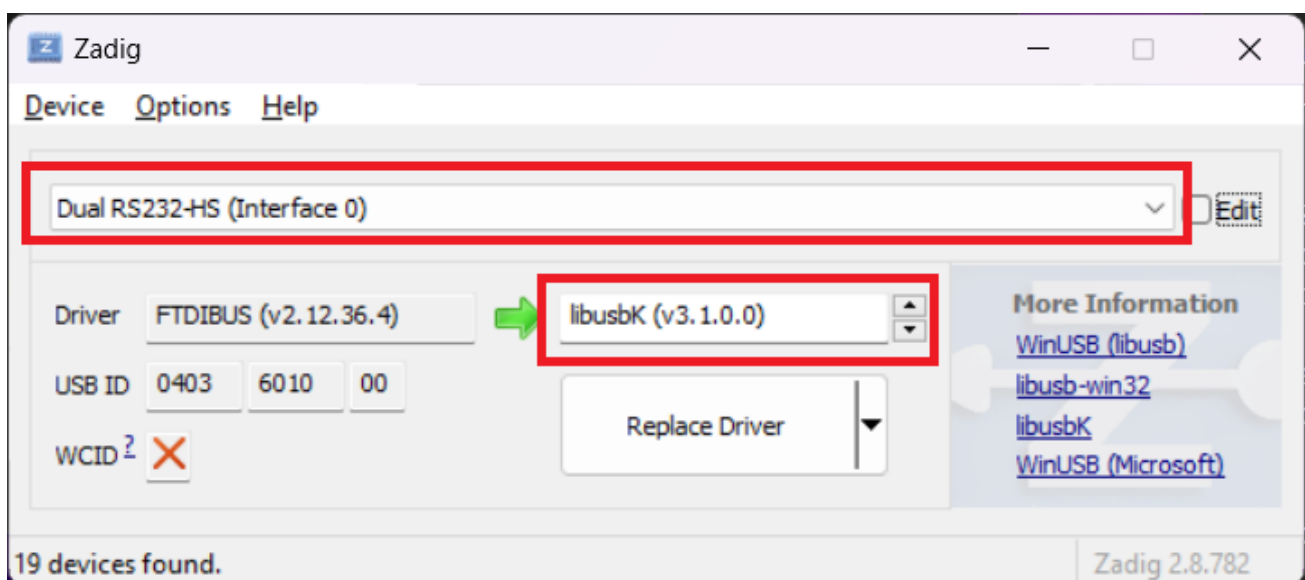
- Run the following command:

```
apio drivers --ftdi-enable
```

## Step 4: Driver Setup (Windows Only)

6. **WINDOWS ONLY:** Configure Drivers with Zadig:

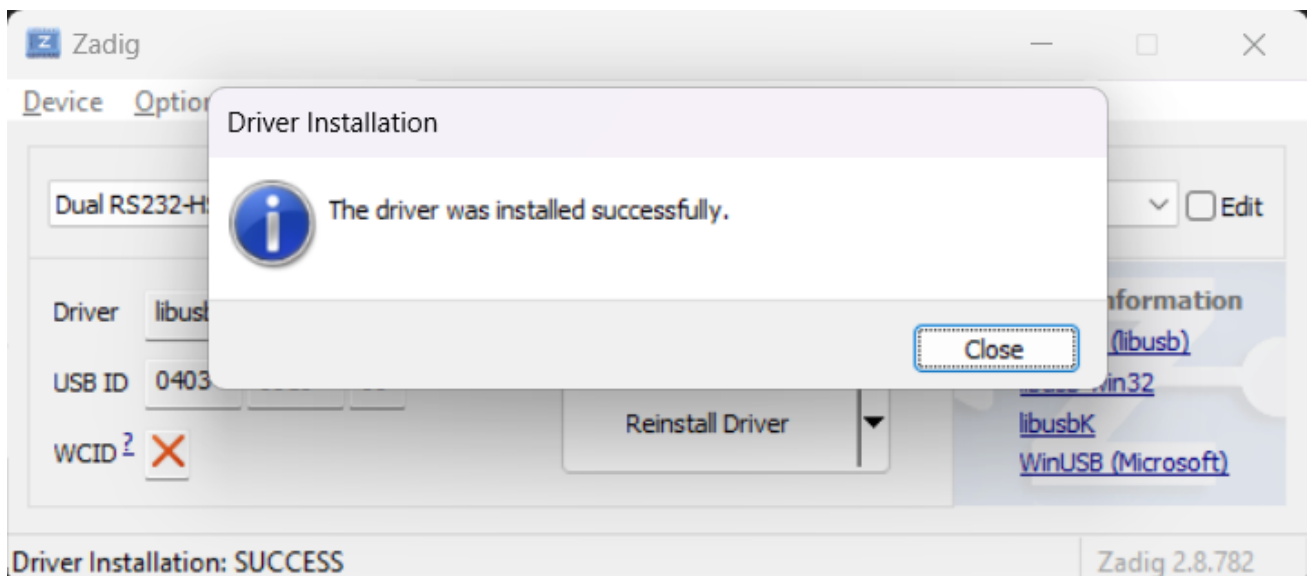
- On this screen, **select “Dual RS232-HS (Interface 0)”** from the





- Select “**libusbK**” from the Driver dropdown.
- If the option does not appear, go to **Options -> List All Devices**.

7. **WINDOWS ONLY:** Click **Replace Driver**.
8. **WINDOWS ONLY:** Wait for a few minutes for the driver installation to complete. When done, you’ll see “**The driver was installed successfully.**”

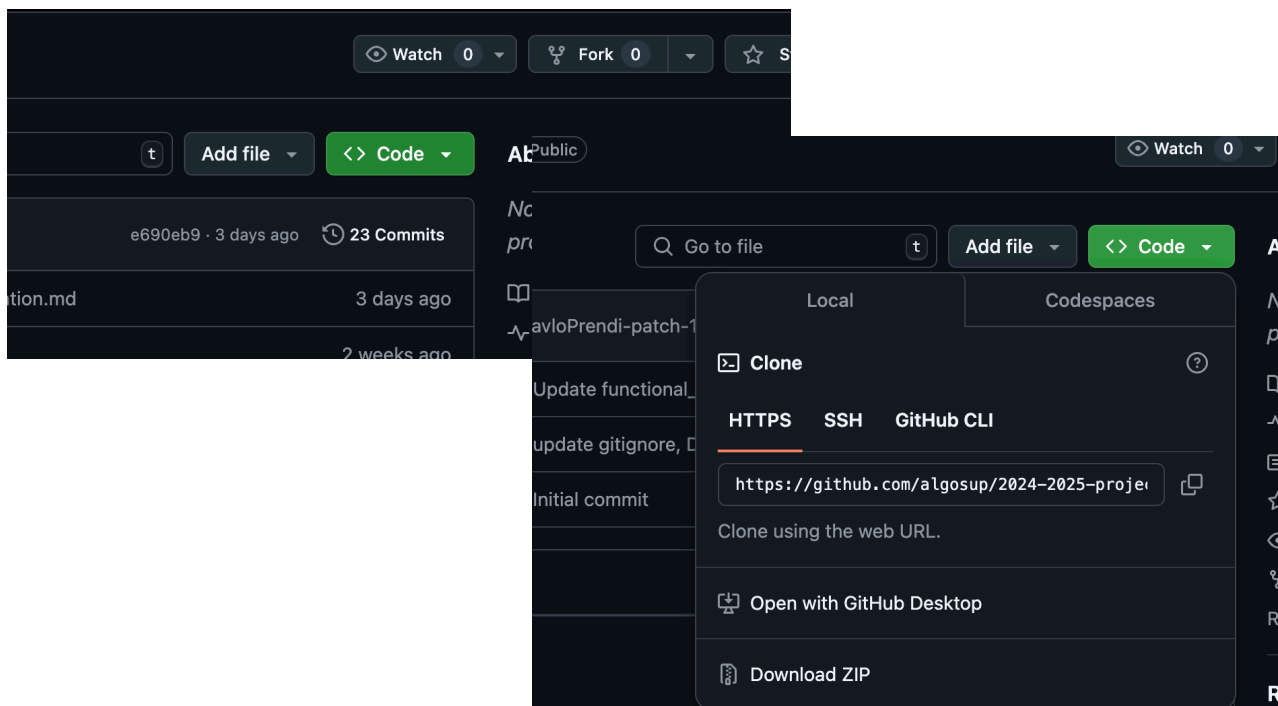


9. **WINDOWS ONLY:** Close the **Zadig** application.
10. **Unplug** and then **re-plug** the Go-Board into your computer.

## Step 5: Flash the Game onto Your Board

### 11. Download the Game:

- Go to the GitHub repository (<https://github.com/algosup/2024-2025-project-1-fpga-team-7>) and click the **Code** button and then **Download**



## 12. **Unzip the Downloaded File:**

- Extract the contents of the downloaded zip file.

## 13. **Navigate to the Game Directory:**

- Open a terminal and use the `cd` command to navigate to the extracted game directory:

```
cd path/to/your/downloaded/game
```

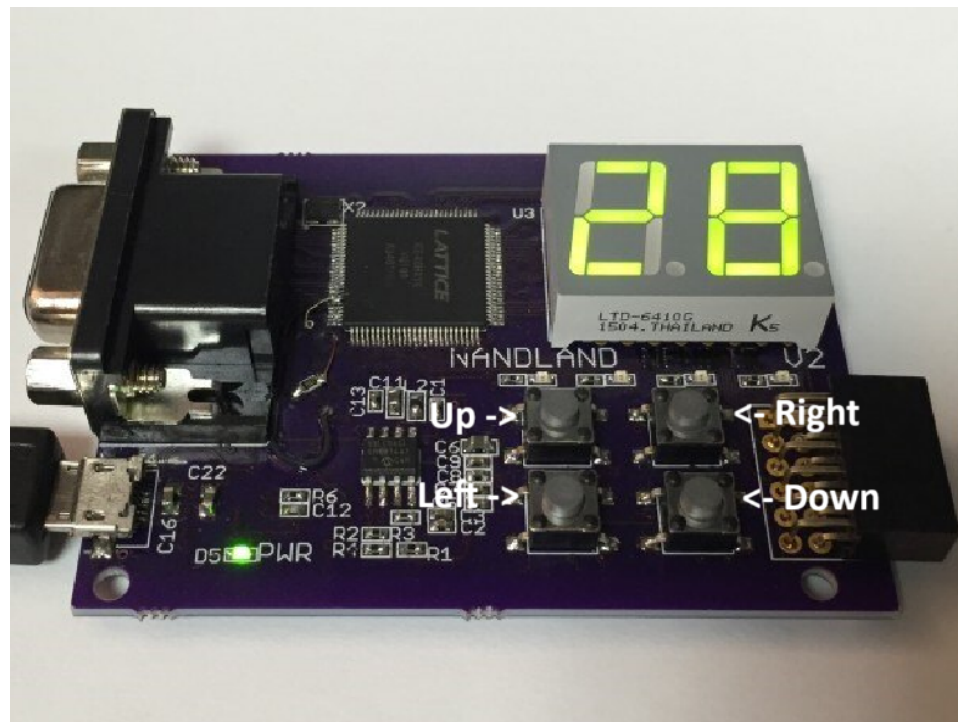
## 14. **Upload the Game to the Go-Board:**

- Ensure that your board is still connected to your computer.
- Run the following command:

```
apio upload
```

## 15. **Unplug the Go-Board** after the upload process is complete.

# CONTROLLER OPERATION

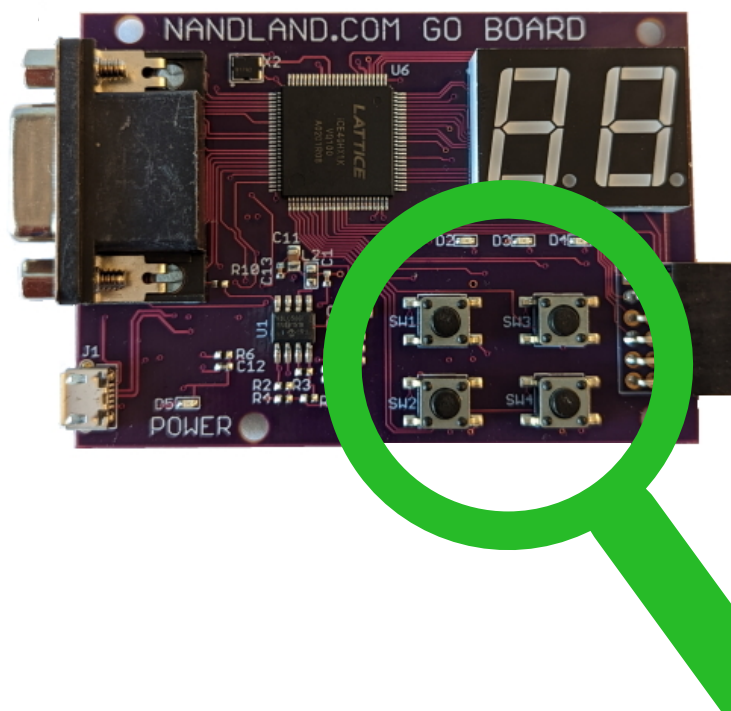
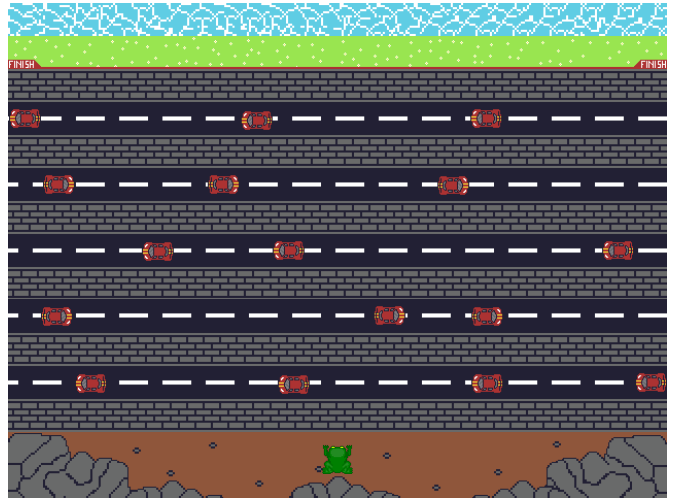


## Frog Movement:

- Each time you press a button, Froggy moves **one space** in the chosen direction.
- To move Froggy several spaces in a row, you must press the directional button **multiple times**.
- Holding down a button will not cause Froggy to move continuously. Instead, each press results in a single step, requiring precise input for every movement across the roads and safe places.

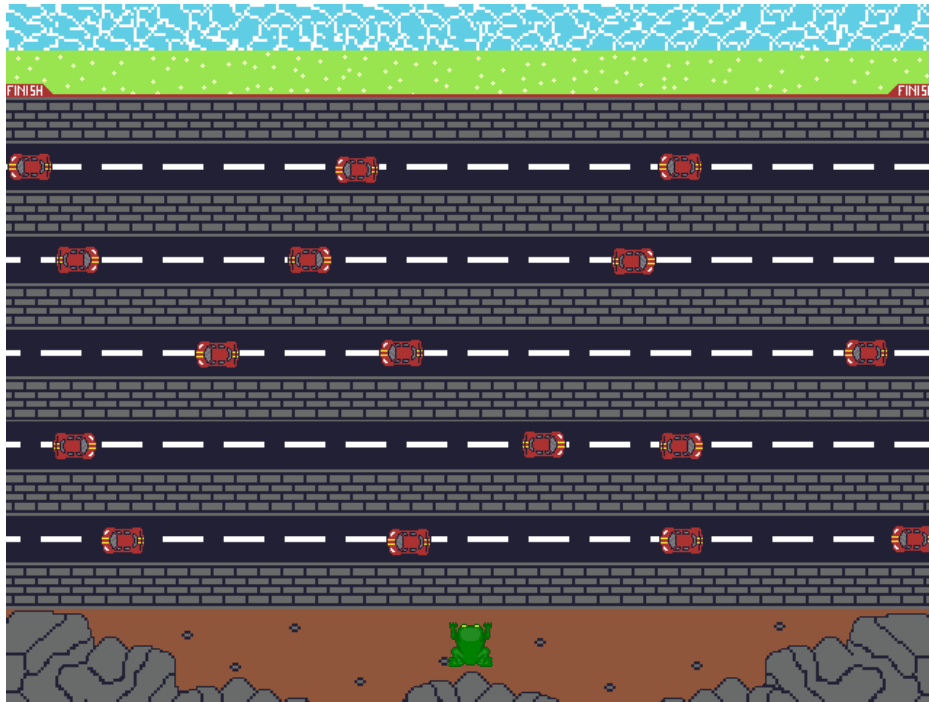
# PLAYING THE GAME

Use a VGA cable to connect the Go-Board to a screen that supports VGA input. Make sure the cable is plugged in securely to avoid any display issues. Your screen should automatically detect the VGA connection and switch to the appropriate source. If the screen does not switch automatically, use the input/source button on your monitor or TV to manually select the **VGA** source. Once the connection is established, the screen at the right will appear on your monitor. Press the four buttons on the Go-Board to start the game and begin controlling **Froggy**.



4 Buttons

# MAP SCREEN



The map consists of several roads and safe places. Froggy starts the game positioned at the bottom center of the screen, and the objective is to reach the top. The entire top edge of the screen acts as the finish line—you do not have to aim for the center of the top, any part of the top edge will allow you to complete the level. Between each road, there are safe places where Froggy can pause and plan the next move. These safe zones allow you to wait safely until you find the right moment to cross the next road without getting hit by a vehicle.

Each road is populated with cars moving at different speeds. You'll need to time your movements carefully to avoid being hit. Every time Froggy successfully reaches the top of the screen, he is teleported back to the starting point at the bottom. With each new attempt, the speed of cars increase.

