User Manual

How to Play Boardwalk Online

To play Boardwalk in your web browser, go to https://boardmesh.app and allow the game to load. Once the game has loaded, you can click "Start" and then upload an image to use as a level. For the best results, images that are used as levels should have distinctly black, red, green, or blue colored enclosed shapes and/or thick lines to represent elements of the level.
To control your character, use the following keys:

- Move Left - A or Left Arrow Key
- Move Right - D or Right Arrow Key
- Jump - Space
- Dash - Left Shift

If you are playing on mobile, these actions will be represented by on-screen buttons. Have fun!

How to use the Boardmesh API

To use the Boardmesh API, make a POST request to https://boardmesh.app/api/build-level (or the `/api/build-level` route of any other Boardmesh server) using the `multipart/form-data` format, containing a field with the key "image" that holds an image in the `application/png` or `application/jpeg` format. The response will be a JSON encoded array containing region data objects with the following properties:

- **`regionNumber`** - Contains a unique numerical identifier for the region.
- **`regionColor`** - Contains an object with the properties `R`, `G`, `B`, and `A`, representing the red, green, blue, and alpha (opacity) values of the region respectively, on a scale from 0-255.
- **`cornerX`** - The X coordinate of the top left of the region.
- **`cornerY`** - The Y coordinate of the top left of the region.
- **`regionImage`** - A Base64-encoded png image of the region.

- **`mesh`** - An array of vertex objects, each with an `x` and `y` property representing its coordinates relative to the top left of the region. Represents the region as a polygonal mesh.

If you would like to see a preview of how your image is being interpreted by Boardmesh, you can send the image to `/api/simplify` instead in the same way. The response will be a png image of your image in “simplified” form.

Go Installation

For Windows

To install Go for Windows, you must download the installer from Go's official website: https://go.dev/dl/. Open the MSI file and follow the prompts to install go. The installer will by default install Go to Program Files. To verify installation in Windows, click the start menu, type `cmd` or `powershell` then press the Enter key. In the command prompt or powershell terminal window that appears, type the following command:

```
go version
```

```
PS C:\cmps_401\go> go version
go version go1.23.0 windows/amd64
```

Confirm that the command prints the installed version of Go.

For MacOS

To install for MacOS, download the package file from Go's official website: https://go.dev/dl/. Open the package file you downloaded and follow the prompts to install Go. The package installs the Go distribution to /usr/local/go. Verify your installation by opening a command prompt and typing the following command:

```
go version
```

Confirm that the command prints the installed version of Go.

For Linux/Ubuntu

1. To install for Linux, you can use your package manager to install the `golang-go` package. For Ubuntu, you can run this command in the terminal to install it:

   ```
   sudo apt-get install golang-go
   ```

2. To install for Linux without a package manager, download the appropriate tar file from https://go.dev/dl/. Then, in order to remove any previous Go installation and extract your new Go tar file, run the following command (one line):

```
rm -rf /usr/local/go && tar -C /usr/local -xzf
go1.23.1.linux-amd64.tar.gz
```

To add it to your PATH in order to use it anywhere, run this command:

```
export PATH=$PATH:/usr/local/go/bin
```

To verify that you have installed Go and added it to your PATH, run the following command:

```
go version
```

Confirm that the command prints the installed version of Go.

Local Boardmesh Server Setup

To run a Boardmesh server locally, make sure you have installed Go (shown above) and the project cloned or downloaded from https://github.com/codeJester27/cmps401fa2024. Open up a terminal and navigate to the WebApp directory of the project. Once you are there, simply enter the command `go run .` and wait for the project to compile and run. The server will be hosted on port 8080 by default, but you can change this with the `PORT` environment variable. Your server will be accessible on the same machine from http://localhost:8080.

Local Boardwalk Setup

To run Boardwalk locally through Godot, firstly make sure you have the Godot Engine v4.3 executable downloaded from https://godotengine.org/download and the project cloned or downloaded from https://github.com/codeJester27/cmps401fa2024. Upon opening Godot, you will press the “Import” Button. You will then open the Game folder and select the `project.godot` file within the folder. Upon entering the project, the next step is entering “Project Settings” on the top taskbar. Once selected, stay in the “General” Section. Toggle the “Advanced Settings” switch on the top right corner to “On”. Then go to the “Boardwalk” section of the settings. Next, in the “Web Server URL” selection, type in “http://localhost:8080” if you are running a local Boardmesh server with the default port 8080, or any other address that is hosting a Boardmesh server. After this, all that is required to do is to simply press the sideways triangle or “Run” button in the top right corner.