

Lifting Bridge

Group 1

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HUMBER

Functionality and Dependency

Lifting Bridge will connect to EV3

This system will be dependent on the GPS system

GPS will have access to location of ships and trains

Lifting bridge will have access to the GPS

Lifting bridge will connect to spike hubs (audio, lights, motors, sensors)



The LEGO Group. (n.d.). Dagobah™ Jedi™ Training Diorama. Retrieved 2022, from <https://www.lego.com/en-ca/product/dagobah-jedi-training-diorama-75330>.

Dependency

This system will be dependant
GPS system.

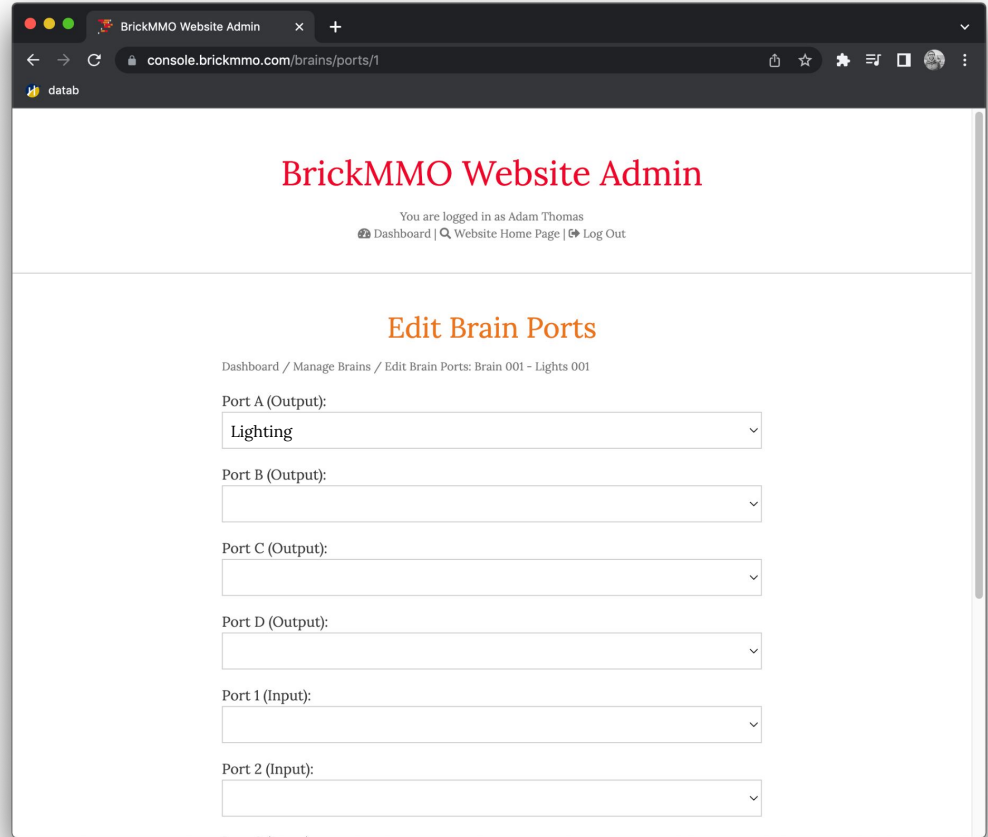


The LEGO Group. (n.d.). Boutique Hotel. Retrieved 2022, from <https://www.lego.com/en-ca/product/boutique-hotel-10297>.

3. Settings and Info

Module: GPS

This module can be connected
to ship distance.

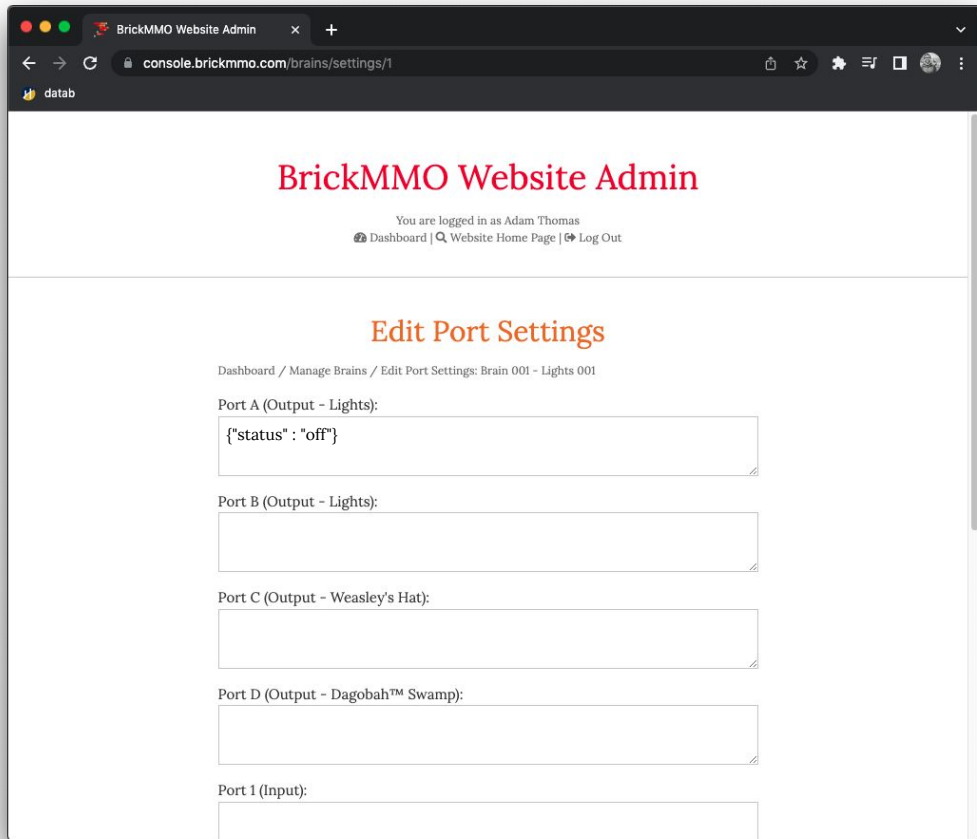


Module Settings

The bridge can be set to on off.

When ships have a certain distance to cross, the bridge have connected to the port and the bridge will be turned on.

The bridge will turn on sound to notify to cars about lifting up.

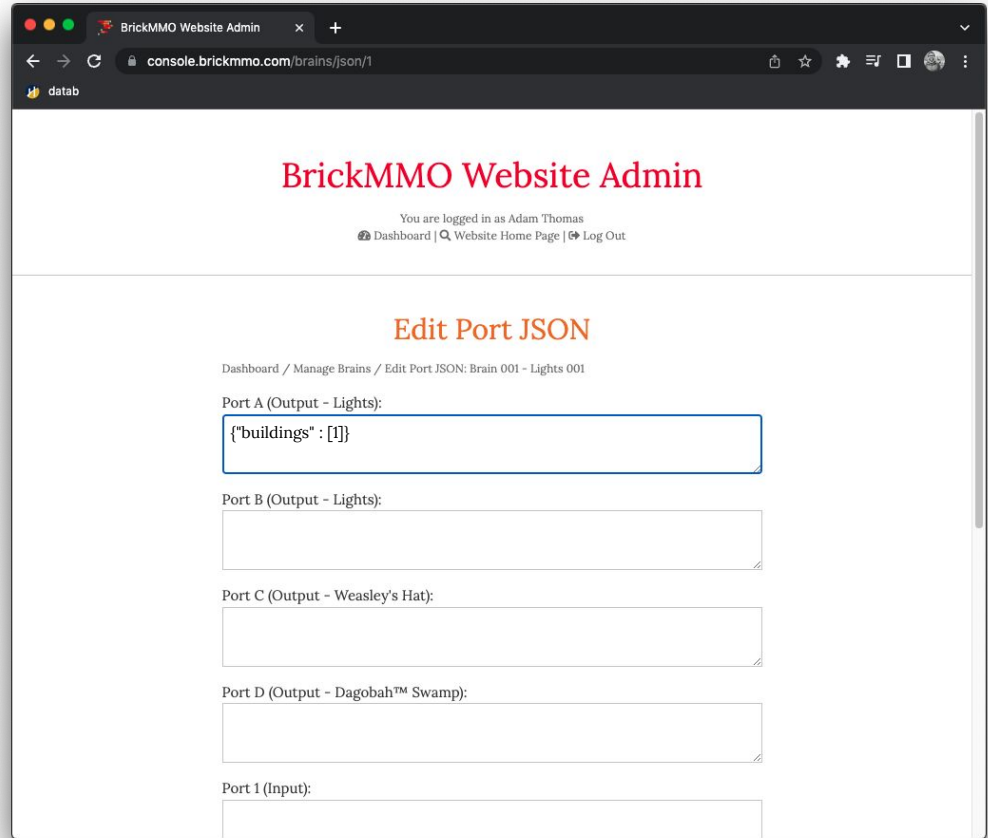


The screenshot shows a web browser window with the title "BrickMMO Website Admin". The address bar shows the URL "console.brickmmo.com/brains/settings/1". The page content includes the title "BrickMMO Website Admin" in red, followed by a login status "You are logged in as Adam Thomas" and navigation links "Dashboard | Q Website Home Page | Log Out". The main heading is "Edit Port Settings" in orange. Below it is a breadcrumb trail "Dashboard / Manage Brains / Edit Port Settings: Brain 001 - Lights 001". The form contains five sections, each with a label and a text input field:

- Port A (Output - Lights): {"status" : "off"}
- Port B (Output - Lights):
- Port C (Output - Weasley's Hat):
- Port D (Output - Dagobah™ Swamp):
- Port 1 (Input):

Module JSON

Additional information will include lights, motors, audio, and sensors connected to the lifting bridge port.



The screenshot shows a web browser window with the title 'BrickMMO Website Admin'. The address bar shows the URL 'console.brickmmo.com/brains/json/1'. The page has a dark header with a 'datab' logo. The main content area has a white background with the title 'BrickMMO Website Admin' in red. Below the title, it says 'You are logged in as Adam Thomas' and provides links for 'Dashboard', 'Website Home Page', and 'Log Out'. The main heading is 'Edit Port JSON' in orange. Below this, the breadcrumb trail is 'Dashboard / Manage Brains / Edit Port JSON: Brain 001 - Lights 001'. The page lists five ports with their respective JSON configuration boxes:

- Port A (Output - Lights): `{"buildings" : [1]}`
- Port B (Output - Lights):
- Port C (Output - Weasley's Hat):
- Port D (Output - Dagobah™ Swamp):
- Port 1 (Input):

4. Ports, Motors, and Settings

Sensors and Motors

Audio Port

3x3 Light Matrix

Large Motor

Ultrasonic Sensor

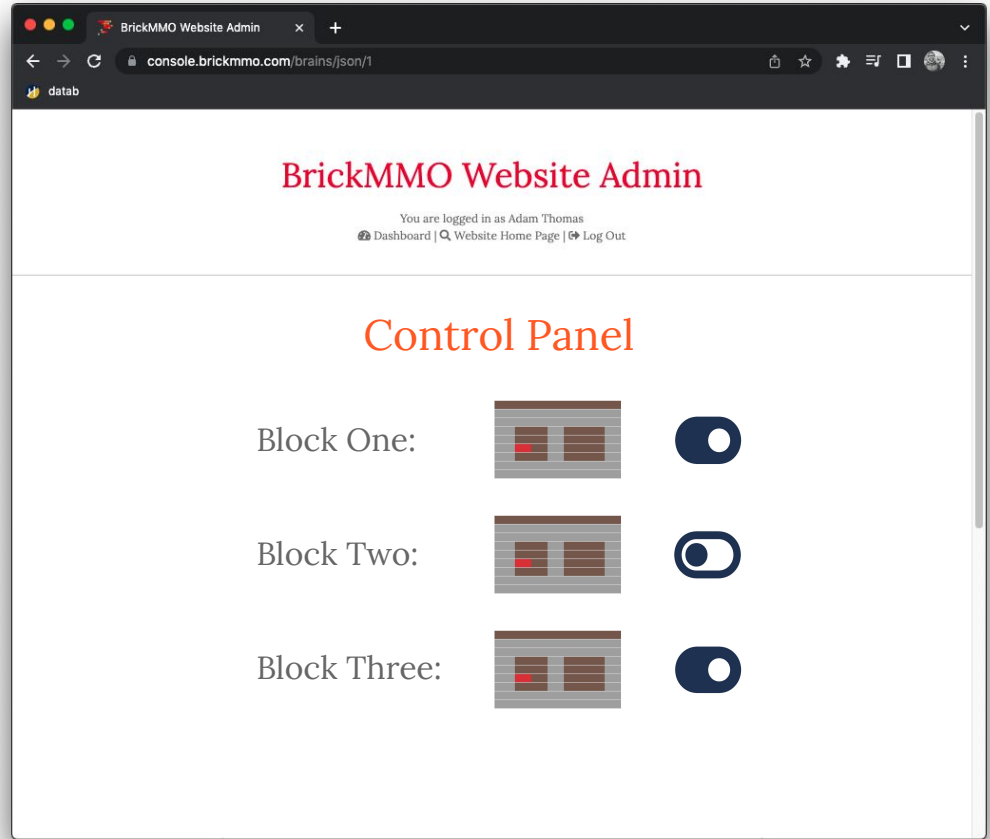


Control Panel

Lights could have different types:
Blinking and On/Off

Sound will have an on and off function

Motor for the bridge will be on and off



5. Pseudocode

IOT Loop

Opening time = bridge opening time + red signal time and barricade opening time

if(ship direction is towards bridge){

Calculate time to reach the bridge(reach time)

}

if(opening time + buffer time == reach time){

Turns the signal yellow -> red ; delay ;

barricade opens ; delay ;

Check(if any vehicle on the bridge)

Open bridge

if(ship crosses the bridge){

delay;

Close bridge;

Barricade opens;

Light turns green;

}