

# **Adam Thomas**

Professor, Media Studies and IT  
Faculty of Media and Creative Arts

MA Learning and Technology

adam.thomas@humber.ca

[codeadam.ca](http://codeadam.ca)



# **Sean Doyle**

Professor of Web Development  
Faculty of Media and Creative Arts  
MA Learning and Technology  
[sean.doyle@humber.ca](mailto:sean.doyle@humber.ca)

# **Ahmed Sagarwala**

Associate Dean Interaction Design  
Faculty of Media and Creative Arts  
MA Digital Media  
[ahmed.sagarwala@humber.ca](mailto:ahmed.sagarwala@humber.ca)  
[sagarwala.com](http://sagarwala.com)



# LEGO™ Smart City



**The LEGO™ Smart City  
is a playground to learn code  
using real-life application.**

# LEGO™ Systems



The LEGO Group. (n.d.). Millennium Falcon™. Retrieved 2022, from <https://www.lego.com/en-ca/product/millennium-falcon-75192>.

# **1. Brainstorm a system**

# **What is a system?**



# Power Grid

Controlling power to each block,  
building, and other systems.

# GPS

Every LEGO™ robot needs to know its own location at any given time.



Humber College Blvd



Toronto, Ontario



Street View - Sep 2020

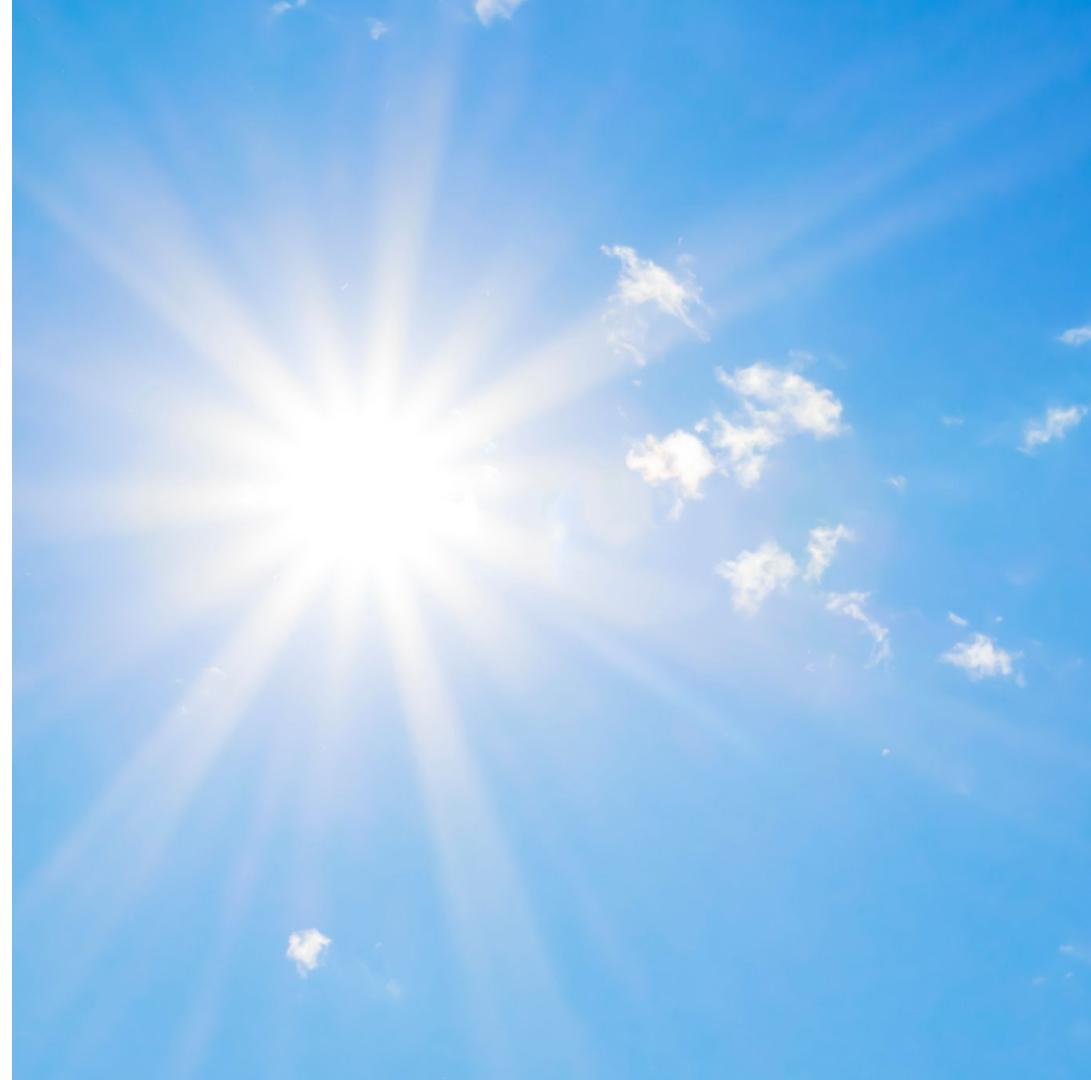


# Google Street View

Interactive panoramas from any  
location in the LEGO™ city.

# The SUN

Add a sunlight effect  
to the LEGO™ city.



## **2. Functionality**

# Functionality

How will this system work  
in the LEGO™ city?



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

What other systems  
will this system require?

What other could  
use this new 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**

# Does this system need a module?

BrickMMO Website Admin

You are logged in as Adam Thomas

[Dashboard](#) | [Website Home Page](#) | [Log Out](#)

## Edit Brain Ports

Dashboard / Manage Brains / Edit Brain Ports: Brain 001 - Lights 001

Port A (Output):  
Weasley's Hat

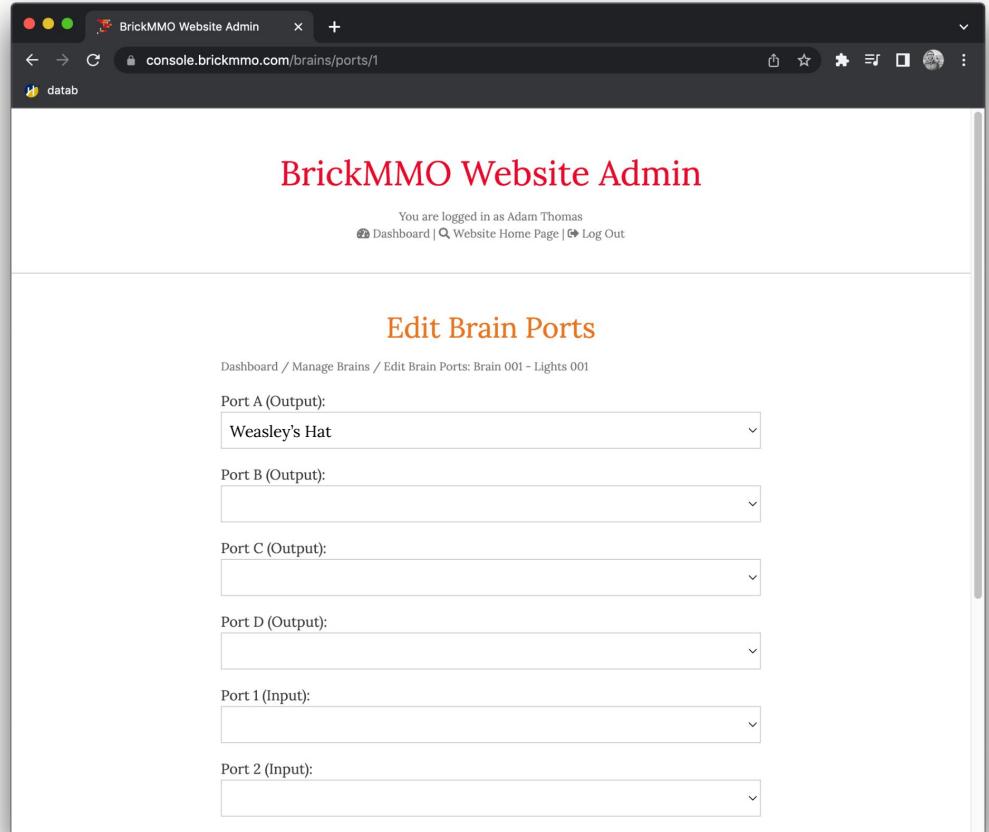
Port B (Output):

Port C (Output):

Port D (Output):

Port 1 (Input):

Port 2 (Input):



# Module Settings

Determine what settings your system will need  
and put them into a JSON object.

The screenshot shows a web browser window titled "BrickMMO Website Admin" with the URL "console.brickmmo.com/brains/settings/1". The user is logged in as Adam Thomas. The main content area is titled "Edit Port Settings" and shows five input fields for different ports:

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

# Module JSON

Determine what other information your module may require and place them into a JSON object.

The screenshot shows a web browser window titled "BrickMMO Website Admin" with the URL "console.brickmmo.com/brains/json/1". The user is logged in as Adam Thomas. The main content area is titled "Edit Port JSON" and shows five input fields for different ports:

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

## **4. Ports, Motors, and Settings**

# Ports

How many ports will your system need?

Will it require input or output ports?



## Motors and Sensors

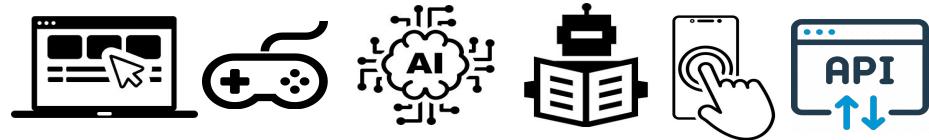
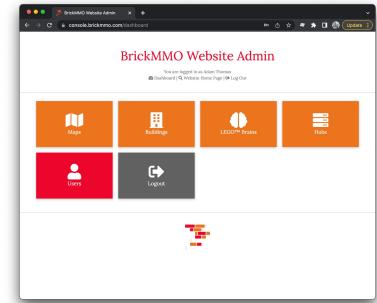
Which motors and/or sensors will the module require? Which will be attached to which port?



# **5. Pseudocode**

# Pseudocode

What code and applications  
will your system require?



# **6. Presentation**

BrickMMO - Weasleys Hat - Google Slides

docs.google.com/presentation/d/1gknSInallco2ORqP4cA35TlsDo5pSZ863Nm8OcLPfa/edit#slide... Slideshow Share

BrickMMO - Weasleys Hat

File Edit View Insert Format Slide Arrange Tools Extensions Help

Background Layout Theme Transition

1 Adam Theme

2 Weasley's Hat

3 Diagon Alley

4 Module Description

5 Requirements

6 Sensors and Motors

Module Description

Weasley's hat from the Diagon Alley set already has a lever to tip his hat manually. This module will tip his hat automatically every ten seconds.

Click to add speaker notes

A photograph of a LEGO model of a Weasley's hat. The hat is purple and orange, mounted on a stand labeled 'MODERN MAGIC'.

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README.md

**brickmmo-hackathon-assets**

A library of BrickMMO hackathon assets and results.

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