IOT HTR: USER GUIDE

Team 8: TheLitteEngineersThatCould

-

TABLE OF CONTENTS

SECTION 1: LOGGING IN

To log into the HTR Layout Control System, there are two data fields.

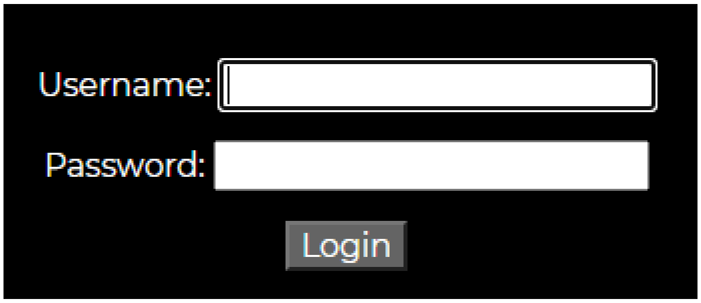


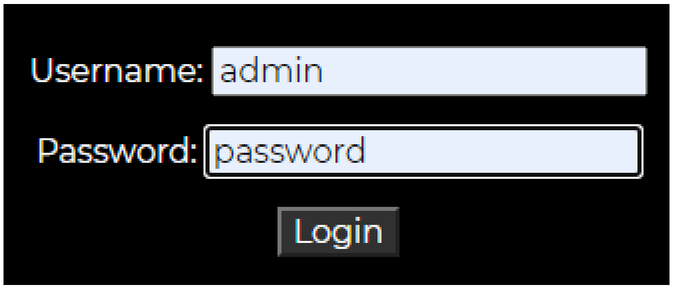
Figure 1.1 Log-In Page

The Admin has access to see the camera, the data it has collected, and is able to retrieve the To access the admin controls of HTR, please use the following input:

`Username: admin`

`Password: password`

Press the 'Login' after you have entered all your fields. Here's an example:



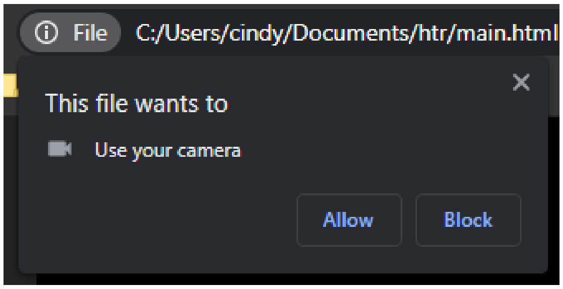
Username: admin

Password: password

Figure 1.2 Log-In Page Fields

SECTION 2: CAMERA

After you log on, your browser will display a box that asks to allow to use camera:



File C:/Users/cindy/Documents/htr/main.html

This file wants to

Use your camera

Figure 2.1 Camera Access Prompt

Click 'Allow' to give the software access to the camera feed.

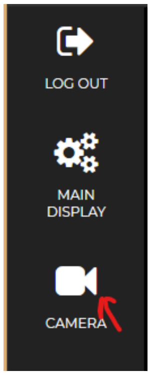
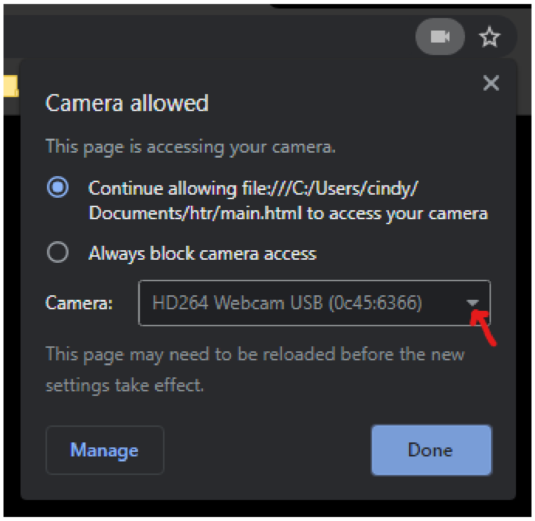


Figure 2.2 Camera Icon Button

Click the Camera Icon to see your video feed, or scroll down. If you wish to access a different camera or video stream you may change it by clicking the camera icon locate by your search bar:



Camera allowed

This page is accessing your camera.

● Continue allowing file:///C:/Users/cindy/Documents/htr/main.html to access your camera

○ Always block camera access

Camera: HD264 Webcam USB (0c45:6366)

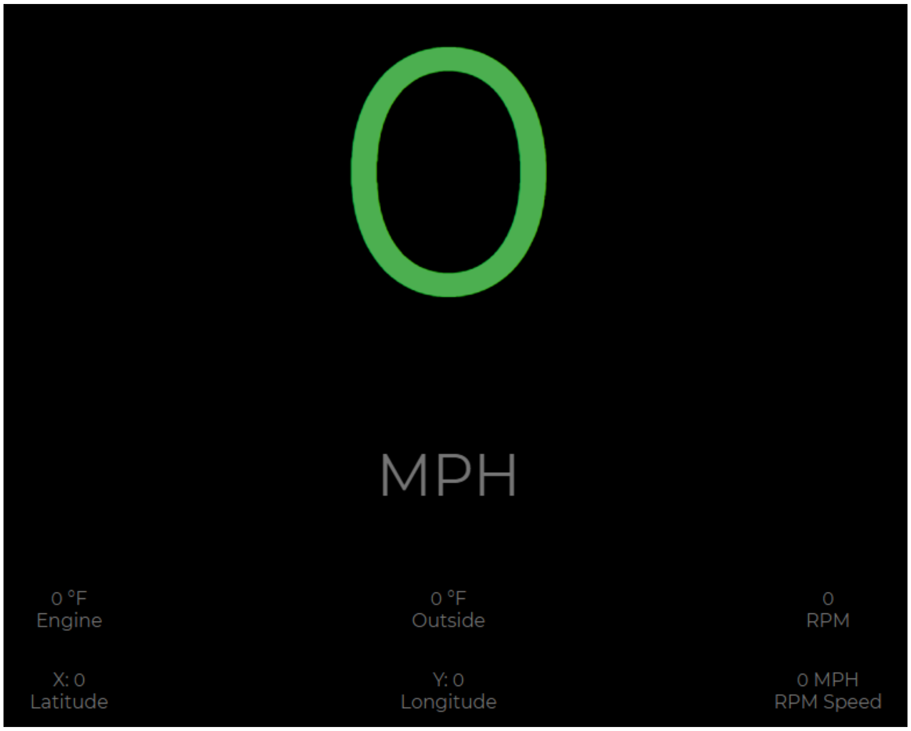
This page may need to be reloaded before the new settings take effect.

Figure 2.3 Changing Camera Stream

If any other cameras are connected you can click the drop down menu and select which you would like to use.

SECTION 3: INITIALIZING

Now, you are presented with the main display:



0

MPH

0 °F
Engine

0 °F
Outside

0
RPM

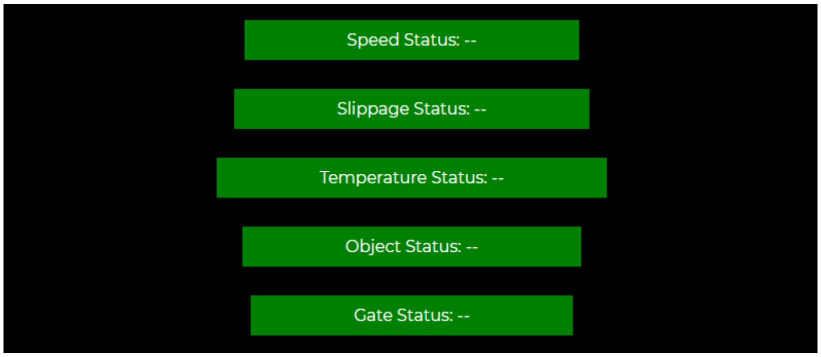
X: 0
Latitude

Y: 0
Longitude

0 MPH
RPM Speed

Figure 3.1 Main Display Initialized

All values of the trains should start at zero this means the engine temperature, outside temperature, RPM, Latitude, Longitude, and RPM Speed. Along with the 5 green bars below:



Speed Status: --

Slippage Status: --

Temperature Status: --

Object Status: --

Gate Status: --

Figure 3.1 Warning Display Initialized

The system should start with all green statuses, if the statuses are anything but green then there is a problem with the set up.

SECTION 4: TESTING (RNG)

We have implemented a random number generator for each variable. To test with these random numbers you can press the ‘Testing’ button provided as seen below:

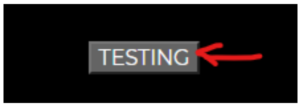


Figure 4.1 Testing Button

You should then see many things change at once: the numbers in our display that were previously zeroes should all change to various values, along with the error messages likely changing color and message. Our testing is set up by default that whenever you click the testing button, each number is thrown as a random number. And you can access the previous test by going to the System Logs Section. You can go to this section by clicking the icon or scrolling down.

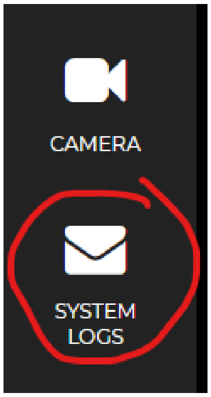
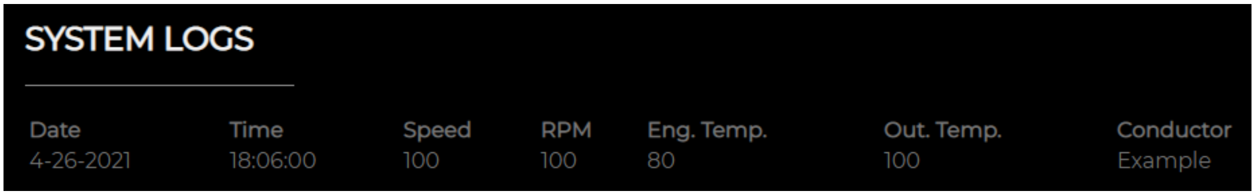


Figure 4.2 System Logs Button

This section should display the logs and what happened at the time and date in a table format as shown below:



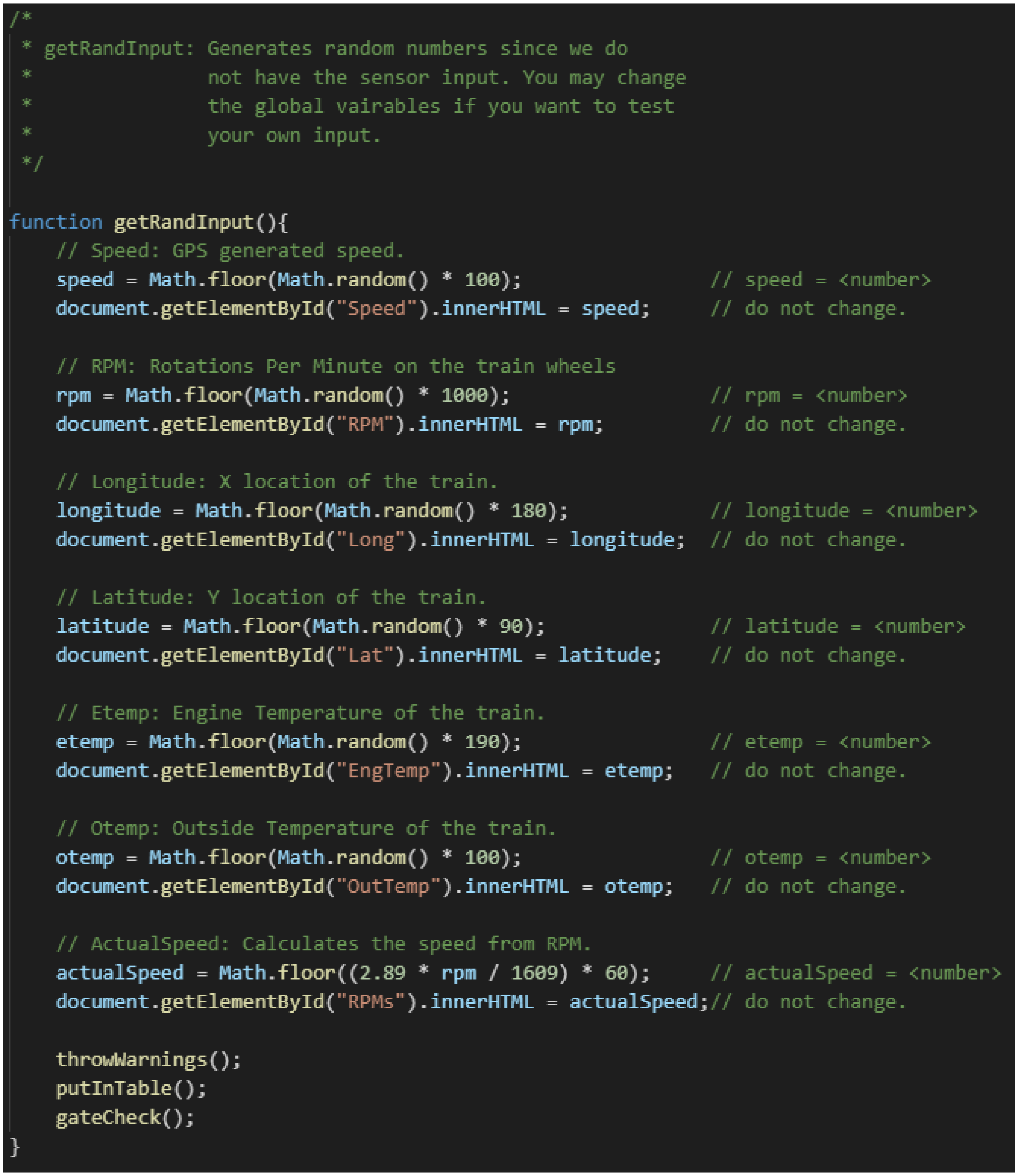
SYSTEM LOGS

Date	Time	Speed	RPM	Eng. Temp.	Out. Temp.	Conductor
4-26-2021	18:06:00	100	100	80	100	Example

Figure 4.3 System Logs Section

SECTION 5: TESTING (INPUT)

To input your own numbers you can manually change the numbers in our javascript file. Scroll down till you see our `function getRandInput()` as shown below:



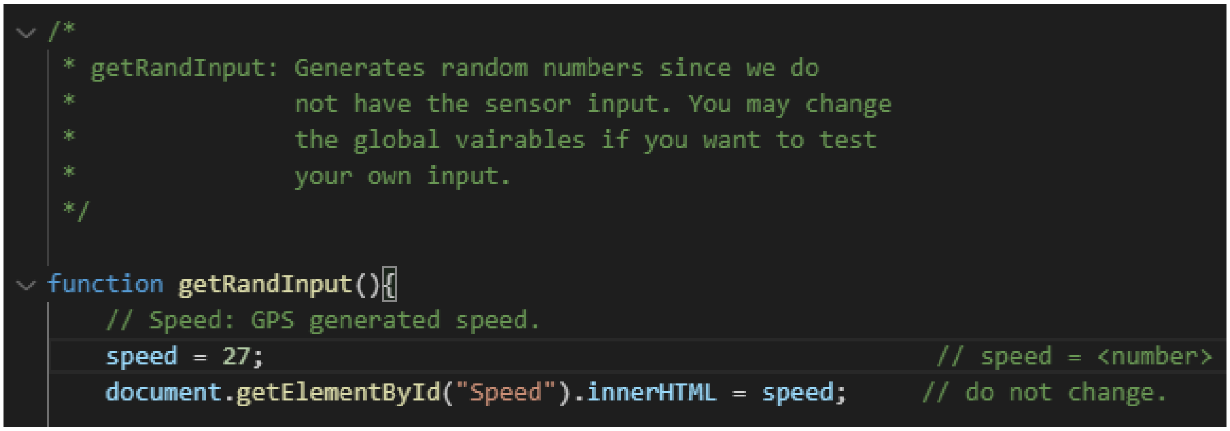
```
/*
 * getRandInput: Generates random numbers since we do
 *               not have the sensor input. You may change
 *               the global vairables if you want to test
 *               your own input.
 */

function getRandInput(){
    // Speed: GPS generated speed.
    speed = Math.floor(Math.random() * 100);                // speed = <number>
    document.getElementById("Speed").innerHTML = speed;     // do not change.

    // RPM: Rotations Per Minute on the train wheels
    rpm = Math.floor(Math.random() * 1000);                 // rpm = <number>
    document.getElementById("RPM").innerHTML = rpm;         // do not change.

    // Longitude: X location of the train.
    longitude = Math.floor(Math.random() * 180);            // longitude = <number>
    document.getElementById("Long").innerHTML = longitude;  // do not change.

    // Latitude: Y location of the train.
    latitude = Math.floor(Math.random() * 90);              // latitude = <number>
    document.getElementById("Lat").innerHTML = latitude;    // do not change.

    // Etemp: Engine Temperature of the train.
    etemp = Math.floor(Math.random() * 190);                // etemp = <number>
    document.getElementById("EngTemp").innerHTML = etemp;   // do not change.

    // Otemp: Outside Temperature of the train.
    otemp = Math.floor(Math.random() * 100);                // otemp = <number>
    document.getElementById("OutTemp").innerHTML = otemp;   // do not change.

    // ActualSpeed: Calculates the speed from RPM.
    actualSpeed = Math.floor((2.89 * rpm / 1609) * 60);     // actualSpeed = <number>
    document.getElementById("RPMs").innerHTML = actualSpeed;// do not change.

    throwWarnings();
    putInTable();
    gateCheck();
}
```

Figure 5.1 Get Random Input JavaScript

Change the line of code to the number you want. For example, if you want the speed to be 27 then you will replace the

```
speed = Math.floor(Math.random() * 100);
```

with:



```
/*
 * getRandInput: Generates random numbers since we do
 *               not have the sensor input. You may change
 *               the global vairables if you want to test
 *               your own input.
 */

function getRandInput(){
    // Speed: GPS generated speed.
    speed = 27;                                              // speed = <number>
    document.getElementById("Speed").innerHTML = speed;     // do not change.
```

Figure 5.2 Changing Speed Variable

This method will work with all 7 of the variables listed here, and should directly change in the display, along with altering what the error messages are thrown as.

SECTION 6: GETTING DATA

To get your data is simple. Click the download button at the bottom of the page. \

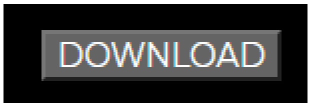


Figure 6.1 Download Button

This should automatically download the excel sheet version of the data table.

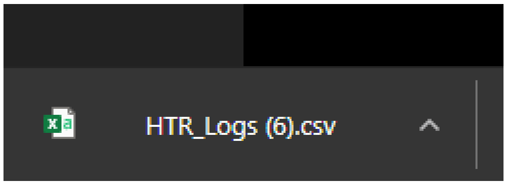


Figure 6.2 Download Prompt

This enables you to play around with the data given to you.

SECTION 7: THANK YOU

That's pretty much it! Our code consists of html, css, and js files, so all the software works together very well. Thank you for taking the time to use and test our software, and we hope you enjoy using it as much as we did making it!