#require "IFTTT.class.nut:1.0.0"

const SECRET\_KEY = "8w2FSkC-EQgtkX5\_FhWpod9cvhq5bnetlqLOC2mu6z";

ifttt <- IFTTT(SECRET\_KEY);

username <- "terencezhao@uchicago.edu"

password <- "password"

function homePage() {

local homePage = @"

<!DOCTYPE html>

<html lang='en'>

<head>

<meta charset='utf-8'>

<meta http-equiv='X-UA-Compatible' content='IE=edge'>

<meta name='viewport' content='width=device-width, initial-scale=1'>

<meta name='description' content=''>

<meta name='author' content=''>

<!-- Latest compiled and minified CSS -->

<link rel='stylesheet' href='https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bootstrap.min.css' integrity='sha384-1q8mTJOASx8j1Au+a5WDVnPi2lkFfwwEAa8hDDdjZlpLegxhjVME1fgjWPGmkzs7' crossorigin='anonymous'>

<!-- Optional theme -->

<link rel='stylesheet' href='https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bootstrap-theme.min.css' integrity='sha384-fLW2N01lMqjakBkx3l/M9EahuwpSfeNvV63J5ezn3uZzapT0u7EYsXMjQV+0En5r' crossorigin='anonymous'>

<link href='https://getbootstrap.com/examples/cover/cover.css' rel='stylesheet'>

<!-- Latest compiled and minified JavaScript -->

<script src='https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/js/bootstrap.min.js' integrity='sha384-0mSbJDEHialfmuBBQP6A4Qrprq5OVfW37PRR3j5ELqxss1yVqOtnepnHVP9aJ7xS' crossorigin='anonymous'></script>

<title>SimplySecure</title>

</head>

<body>

<div class='site-wrapper'>

<div class='site-wrapper-inner'>

<div class='cover-container'>

<div class='masthead clearfix'>

<div class='inner'>

<h3 class='masthead-brand'>A Simple Security System Powered by Electric IMP</h3>

</div>

</div>

<div class='inner cover'>

<h1 class='cover-heading'>SimplySecure</h1>

<p class='lead'>

SimplySecure is an Electric IMP powered security system designed to watch over the entrance of your home.

When the device is armed, any motion that it detects will trigger a loud alarm.

Email and text alerts can also be sent, notifying you of potential intruders.

Since it is connected to the internet, the device can be remotely disared at anytime.

Protect your home and peace of mind with SimplySecure!

</p>

<p class='lead'>

<a href='https://agent.electricimp.com/iTk7tAfu1Ngv/index' class='btn btn-lg btn-default'>Let's Get Started</a>

</p>

</div>

<div class='mastfoot'>

<div class='inner'>

<p>Final Project for <a href='https://mpcs-courses.cs.uchicago.edu/2015-16/winter/courses/52010'>Computer Architecture (CS 52010)</a>, by Terence Zhao.</p>

</div>

</div>

</div>

</div>

</div>

<script src='https://ajax.googleapis.com/ajax/libs/jquery/1.11.3/jquery.min.js'></script>

<script src='https://getbootstrap.com/dist/js/bootstrap.min.js'></script>

</body>

</html>

"

return homePage;

}

function index() {

local index = @"

<!DOCTYPE html>

<html>

<head>

<title>SimplySecure - A Simple Security System Powered by Electric IMP</title>

<meta name='viewport' content='width=device-width, height=device-height, initial-scale=1'>

<link rel='stylesheet' type='text/css' href='https://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.css'/>

<script src='https://code.jquery.com/jquery-1.11.3.min.js'></script>

<script src='https://code.jquery.com/mobile/1.4.5/jquery.mobile-1.4.5.min.js'></script>

</head>

<body>

<!-- SOURCE: https://dzone.com/articles/jquery-mobile-tutorial-user -->

<div data-role='page' data-theme='b'>

<div role='main' class='ui-content'>

<h2 class='mc-text-center'>Welcome to SimplySecure!</h2>

<p class='mc-top-margin-1-5'><b>Existing Users</b></p>

<a href='#signin' class='ui-btn ui-btn-a ui-corner-all'>Sign In</a>

<p class='mc-top-margin-1-5'><b>Don't have an account?</b></p>

<a href='#signup' class='ui-btn ui-btn-a ui-corner-all'>Sign Up</a>

<p></p>

</div>

</div>

<!-- SOURCE: https://dzone.com/articles/jquery-mobile-tutorial-user -->

<div data-role='page' data-theme='b' id='signin'>

<div data-role='header' data-theme='b'>

<h1>Sign In</h1>

</div>

<div role='main' class='ui-content'>

<label for='txt-email'>Email Address</label>

<input type='text' name='txt-email' id='txt-email' value='' data-theme='a'>

<label for='txt-password'>Password</label>

<input type='password' name='txt-password' id='txt-password' value='' data-theme='a'>

<fieldset data-role='controlgroup'>

<input type='checkbox' name='chck-rememberme' id='chck-rememberme' checked=''>

<label for='chck-rememberme'>Remember me</label>

</fieldset>

<a href='#main' id='btn-submit' class='ui-btn ui-btn-b ui-corner-all mc-top-margin-1-5'>Submit</a>

<p class='mc-top-margin-1-5'><a href='begin-password-reset.html'>Can't access your account?</a></p>

<div data-role='popup' id='dlg-invalid-credentials' data-dismissible='false' style='max-width:400px;'>

<div role='main' class='ui-content'>

<h3 class='mc-text-danger'>Login Failed</h3>

<p>Did you enter the right credentials?</p>

<div class='mc-text-center'><a href='#' data-rel='back' class='ui-btn ui-corner-all ui-shadow ui-btn mc-top-margin-1-5'>OK</a></div>

</div>

</div>

</div>

</div>

<!-- SOURCE: https://dzone.com/articles/jquery-mobile-tutorial-user -->

<div data-role='page' data-them'b' id=signup>

<div data-role='header' data-theme='b'>

<h1>Sign Up</h1>

</div><!-- /header -->

<div role='main' class='ui-content'>

<h3>Sign Up</h3>

<label for='txt-first-name'>First Name</label>

<input type='text' name='txt-first-name' id='txt-first-name' value=''>

<label for='txt-last-name'>Last Name</label>

<input type='text' name='txt-last-name' id='txt-last-name' value=''>

<label for='txt-email'>Email Address</label>

<input type='text' name='txt-email' id='txt-email' value=''>

<label for='txt-password'>Password</label>

<input type='password' name='txt-password' id='txt-password' value=''>

<label for='txt-password-confirm'>Confirm Password</label>

<input type='password' name='txt-password-confirm' id='txt-password-confirm' value=''>

<a href='#dlg-sign-up-sent' data-rel='popup' data-transition='pop' data-position-to='window' id='btn-submit' class='ui-btn ui-btn-b ui-corner-all mc-top-margin-1-5'>Submit</a>

<div data-role='popup' id='dlg-sign-up-sent' data-dismissible='false' style='max-width:400px;'>

<div data-role='header'>

<h1>Almost done...</h1>

</div>

<div role='main' class='ui-content'>

<h3>Confirm Your Email Address</h3>

<p>We sent you an email with instructions on how to confirm your email address. Please check your inbox and follow the instructions in the email.</p>

<div class='mc-text-center'><a href='sign-in.html' class='ui-btn ui-corner-all ui-shadow ui-btn-b mc-top-margin-1-5'>OK</a></div>

</div>

</div>

</div>

</div>

<div data-role='page' id='main' data-theme='a'>

<div data-role='header' data-position='fixed' data-theme='b'>

<h1>SimplySecure</h1>

</div>

<div data-role='main' class='ui-content'>

<form>

<label for='switch'>Flip switch to turn the security system On/Off.</label>

<select name='switch' id='switch' data-role='flipswitch' data-theme='b'>

<option value='off'>Off</option>

<option value='on'>On</option>

</select>

</form>

</div>

<h3 class='ui-bar ui-bar-a ui-corner-all'>How to Use Simply Secure</h3>

<div class='ui-body ui-body-a ui-corner-all'>

<p>

Place the device with the motion sensor facing the door.</br>

When you are ready to leave, switch the system to on using the toggle above.</br>

SimplySecure will detect that you are exiting and start a countdown.</br>

Don't worry if you move during this time as any motion detected will simply reset the timer.</br>

You will also need to confirm that your door is locked and that you have your keys.</br>

Once the device has determined that the area is clear, it will become armed.</br>

You will see the LED illuminate indicating that the system is ready.</br>

Any motion detected from this point will trigger a loud buzzer to deter potential intruders.</br>

An email alert will also be sent notifying you of the event.</br>

In the event that you want to deactivate the system, simply switch the toggle to the off position.</br>

You will be prompted to enter a 4 digit pass code which if entered correctly will disable the system.</br>

</br>Thank you for using SimplySecure!</br>

</p>

</div>

<div data-role='footer' data-position='fixed' data-theme='b'>

<div data-role='navbar' data-theme='b'>

<ul>

<li><a href='#main' data-icon='eye' data-theme='a' data-transition='none'>Main</a></li>

<li><a href='#settings' data-icon='gear' data-transitio<h3 class='ui-bar ui-bar-a ui-corner-all'>Heading</h3>

<div class='ui-body ui-body-a ui-corner-all'>

<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Suspendisse accumsan blandit fermentum. Pellentesque cursus mauris purus, auctor commodo mi ullamcorper nec. Donec semper mattis eros, nec condimentum ante sollicitudin quis. Etiam orci sem, porttitor ut tellus nec, blandit posuere urna. Proin a arcu non lacus pretium faucibus. Aliquam sed est porttitor, ullamcorper urna nec, vehicula lorem. Cras porttitor est lorem, non venenatis diam convallis congue.</p>

</div>n='none'>Settings</a></li>

<li><a href='#about' data-icon='info' data-transition='none'>About</a></li>

</ul>

</div>

</div>

</div>

<div data-role='page' id='reminder' data-overlay-theme='b' data-theme='b'>

<div data-role='header' data-theme='a'>

<h1>Reminder</h1>

</div>

<div role='main' class='ui-content'>

<h3 class='ui-title'>Did you remember to lock and deadbolt your door?</h3>

<p>Don't forget your keys!</p>

<a href='#' class='ui-btn ui-corner-all ui-shadow ui-btn-inline ui-btn-b' data-rel='back' data-transition='flow'>Good to go!</a>

</div>

</div>

<div data-role='page' id='settings' data-theme='a'>

<div data-role='header' data-position='fixed' data-theme='b'>

<h1>Settings</h1>

</div>

<div data-role='main' class='ui-content'>

<h3 class='ui-bar ui-bar-a ui-corner-all'>Alerts</h3>

<div class='ui-field-contain'>

<label for='textinput-fc'>Email address:</label>

<input type='text' name='textinput-fc' id='textinput-fc' placeholder='Enter the email addess which will receive alarm alerts' value=''>

</div>

<div class='ui-field-contain'>

<label for='textinput-fc'>Phone Number:</label>

<input type='text' name='textinput-fc' id='textinput-fc' placeholder='Enter a phone number to receive SMS text message alarm alerts' value=''>

</div>

</div>

<div data-role='footer' data-position='fixed' data-theme='b'>

<div data-role='navbar' data-theme='b'>

<ul>

<li><a href='#main' data-icon='eye' data-transition='none'>Main</a></li>

<li><a href='#settings' data-icon='gear' data-theme='a' data-transition='none'>Settings</a></li>

<li><a href='#about' data-icon='info' data-transition='none'>About</a></li>

</ul>

</div>

</div>

</div>

<div data-role='page' id='about' data-theme='a'>

<div data-role='header' data-position='fixed' data-theme='b' >

<h1>About</h1>

</div>

<a href='#popupVideo' data-rel='popup' data-position-to='window' class='ui-btn ui-corner-all ui-shadow ui-btn-inline'>See Project Proposal</a>

<div data-role='popup' id='popupVideo' data-overlay-theme='b' data-theme='a' data-tolerance='15,15' class='ui-content'>

<p>

Terence Zhao</br>

CS52010</br>

Winter 2016</br>

Homework 5 - Project Proposal</br>

</br>Problem</br>

Recently, my apartment was burglarized while I was away at work. After this incident, I have realized that aside from the possessions that were stolen from me, I have also lost a sense of security and peace of mind. In order to be proactive in rebuilding my home as a safe and protected space, I have decided to dedicate the next 5 weeks to building a home security system that will hopefully prevent any similar occurrences in the future. Currently, the only form of defense afforded by my apartment is a locked door. Using an additional deadbolt is preferable but either form of security has been shown to be vulnerable.

</br>Solution</br>

The main features of my home security system will be as follows:</br>

1. A proximity based reminder to lock and deadbolt the door upon exiting</br>

2, An entry detection mechanism which will alert me when my door is opened while I am away.</br>

3. An audio alarm which will trigger when an unauthorized person has entered the premises.</br>

4. A capability to input a code to remotely disarm the security system for myself or other trusted individuals</br>

</br>Proposal</br>

The security system will be initially unarmed while I am inside the apartment. When I am leaving for the day, the electric imp will detect that the door has been opened and send me a reminder to engage the lock and deadbolt. Once I tap to confirm these are in place, the security system will be engaged. I will be using the Laser Diode available on the adafruit website (https://www.adafruit.com/products/1054) to detect when the door is opened. At this point forward, anyone who attempts to open the door without first supplying an override code will trigger the alarm system. I will be using the 5V Buzzer found on the adafruit website (https://www.adafruit.com/products/1536) to provide a loud and intimidating audio alarm. Ideally this alarm should be disengaged after a set period of time as to avoid annoying the neighbors. I should also be able to disable or trigger it manually through the associated web application. If I were to re-enter my apartment, I would first use my phone to enter a pin number that will deactivate the security system. Another option is to create a web application that requires email authentication such as my google account. Once inside the secure web-app, I can easily disarm the device from anywhere with an internet connection. Since my current apartment only has one entrance, the security system will be focused on deterring potential burglars from entering. Although this proposed solution will not necessarily prevent someone from invading my home, my hope is it will cause enough deterrence to encourage them to think twice about coming in. In any case, all breaches in security shall be reported through email/text message by the webapp so that in extreme cases, the proper authorities can be notified accordingly.

</p>

</div>

<div data-role='footer' data-position='fixed' data-theme='b'>

<div data-role='navbar' data-theme='b'>

<ul>

<li><a href='#main' data-icon='eye' data-transition='none'>Main</a></li>

<li><a href='#settings' data-icon='gear' data-transition='none'>Settings</a></li>

<li><a href='#about' data-icon='info' data-theme='a' data-transition='none'>About</a></li>

</ul>

</div>

</div>

</div>

<div data-role='page' id='lock'>

<div data-role='header' data-position='fixed' data-theme='b' >

<h1>Enter Code to Unlock</h1>

</div>

<div class='ui-grid-c'>

<div class='ui-block-a'><div class='ui-bar ui-bar-a' style='height:60px; text-align:center'><p id='code0'></p></div></div>

<div class='ui-block-b'><div class='ui-bar ui-bar-a' style='height:60px; text-align:center'><p id='code1'></p></div></div>

<div class='ui-block-c'><div class='ui-bar ui-bar-a' style='height:60px; text-align:center'><p id='code2'></p></div></div>

<div class='ui-block-d'><div class='ui-bar ui-bar-a' style='height:60px; text-align:center'><p id='code3'></p></div></div>

</div>

<div class='ui-grid-b'>

<div class='ui-block-a' id='key1'><a class='ui-shadow ui-btn ui-corner-all'>1</a></div>

<div class='ui-block-b' id='key2'><a class='ui-shadow ui-btn ui-corner-all'>2</a></div>

<div class='ui-block-c' id='key3'><a class='ui-shadow ui-btn ui-corner-all'>3</a></div>

<div class='ui-block-a' id='key4'><a class='ui-shadow ui-btn ui-corner-all'>4</a></div>

<div class='ui-block-b' id='key5'><a class='ui-shadow ui-btn ui-corner-all'>5</a></div>

<div class='ui-block-c' id='key6'><a class='ui-shadow ui-btn ui-corner-all'>6</a></div>

<div class='ui-block-a' id='key7'><a class='ui-shadow ui-btn ui-corner-all'>7</a></div>

<div class='ui-block-b' id='key8'><a class='ui-shadow ui-btn ui-corner-all'>8</a></div>

<div class='ui-block-c' id='key9'><a class='ui-shadow ui-btn ui-corner-all'>9</a></div>

<div class='ui-block-a' id='keyClr'><a class='ui-shadow ui-btn ui-corner-all'>CLR</a></div>

<div class='ui-block-b' id='key0'><a class='ui-shadow ui-btn ui-corner-all'>0</a></div>

<div class='ui-block-c' id='keyDel'><a class='ui-shadow ui-btn ui-corner-all'>DEL</a></div>

</div>

</div>

<script>

var unlockCode = '1,2,3,4'

var keyCode = new Array(4);

var keyCodeIndex = 0;

$(document).ready(function(){

for(var i = 0; i < 10; i++) {

$('#key' + i).click(keyClickCallback(i));

}

$('#keyClr').click(keyClickCallback('CLR'));

$('#keyDel').click(keyClickCallback('DEL'));

});

function keyClickCallback(key) {

return function() {

if(key == 'DEL') {

if(keyCodeIndex > 0) {

keyCodeIndex -= 1;

keyCode[keyCodeIndex] = '';

} else {

// do nothing

}

} else if(key == 'CLR' ) {

for(k = 0; k < keyCode.length; k++) {

keyCode[k] = '';

}

keyCodeIndex = 0;

} else if(keyCodeIndex == keyCode.length) {

for(k = 0; k < keyCode.length; k++) {

keyCode[k] = '';

}

keyCodeIndex = 0;

keyCode[keyCodeIndex] = key;

keyCodeIndex += 1;

} else {

keyCode[keyCodeIndex] = key;

keyCodeIndex += 1;

}

$.ajax({

url: 'https://agent.electricimp.com/iTk7tAfu1Ngv/index',

data: keyCode,

success: function(data) {

for(i = 0; i < data.length; i++) {

$('#code' + i).text(keyCode[i]);

}

}

});

if(keyCode.toString() == unlockCode) {

for(k = 0; k < keyCode.length; k++) {

keyCode[k] = '';

}

keyCodeIndex = 0;

$.ajax({

url: 'https://agent.electricimp.com/iTk7tAfu1Ngv/index#main',

type: 'POST',

data: JSON.stringify({

mode : 'disable'

}),

dataType: 'json',

success: function(data, status) {

}

});

location.href = 'https://agent.electricimp.com/iTk7tAfu1Ngv/index#main';

}

}

}

$('#switch').change(function(){

var switchVal = $('#switch').val();

var data = { 'mode' : 'enable' };

if(switchVal == 'on') {

$.ajax({

url: window.location.href,

type: 'POST',

data: JSON.stringify(data),

dataType: 'json',

success: function(data, status) {

alert(data + ' - ' + status);

}

});

location.href = '#reminder';

} else {

location.href = '#lock';

}

});

</script>

</body>

</html>

"

return index;

}

device.on("message", function(message) {server.log(message)})

device.on("alarm", function(alarm) {

ifttt.sendEvent(alarm, function(err, response) {

if(err) {

server.error(err);

return;

}

server.log("Email alert sent!");

})

})

function requestHandler(request, response) {

try {

local path = request.path;

local method = request.method.toupper();

server.log(path + " : " + method);

if(method == "POST") {

local data = http.jsondecode(request.body);

if("mode" in data) {

server.log(data.mode);

device.send("set.mode", data.mode);

}

}

if(path == "/index") {

response.send(200, index());

}

if(path == "/") {

response.send(200, homePage());

}

} catch (ex) {

response.send(500, "Internal Server Error: " + ex);

}

}

// Register the HTTP handler to begin watching for HTTP requests from your browser

http.onrequest(requestHandler);