Intel® Edison Workshop

Day 2, 6th December 2016

Lab 4 Level 3 School of Computer Science USM Penang 11800

Hands-on

01 - build http-express

2

Pre-requisites

- Sublime Text Editor
- Git bash

Make sure you have all those application in your PC. Kindly call facilitators if you can't find those programs.

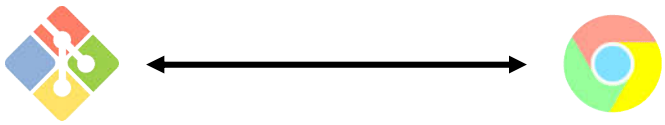
3

Run code sample: **01-HTTP-Express**

- Right click from 'HTTP-Express' folder, Choose Git Bash Here
- Resolve dependencies
  - $ npm install –save
- Run
  - $ node main.js

4

HTTP-Express



main.js
(server)

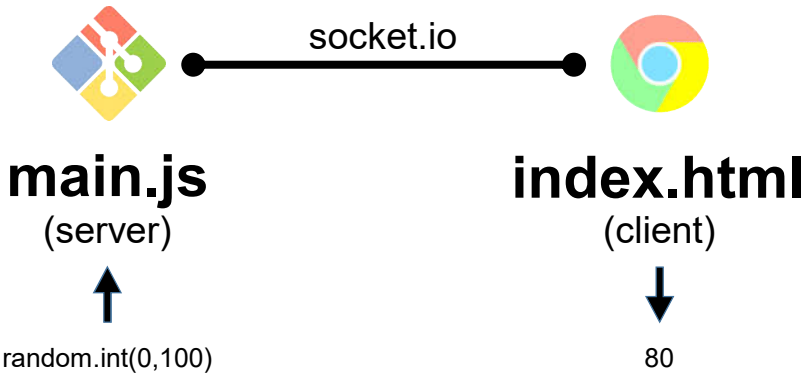
index.html
(client)

e.g: 10.207.134.83:11111

Run code samples: **02-SocketIO**

- Launch Sublime text Editor.
- File > Open Folder, (open your “http-express” folder)

HTTP-Express



Run code sample: **03-rand-mobile**

- Run server
  - Go to 'server' folder. Right click > Git Bash here
  - Resolve dependencies
    - $ npm install –save
  - Run main.js
    - $ node main.js

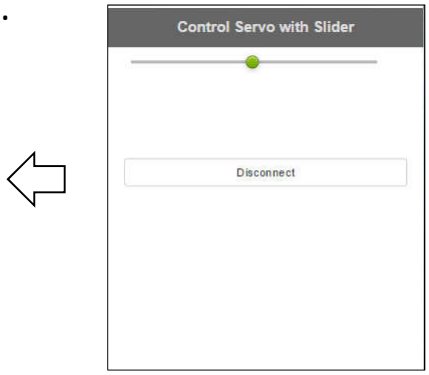
Run code sample: 03-rand-mobile

- Run rand-mobile with Intel XDK
  - Launch Intel XDK.
  - Click 'OPEN AN INTEL XDK PROJECT' and open 'rand-mobile.xdk'
  - Simulate mobile app
    - Click 'Simulate'
    - Choose IOS > Apple Iphone 6
    - Click play icon tu start simulator
    - Enter IP Address and port number.

HTML5 Mobile app with Intel XDK

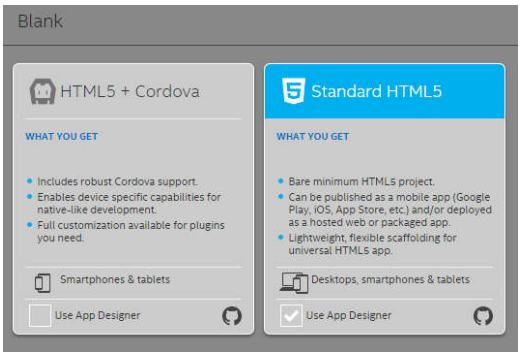
Objective

- Build simple mobile app that use slider to control servo rotation angle on Intel Edison.

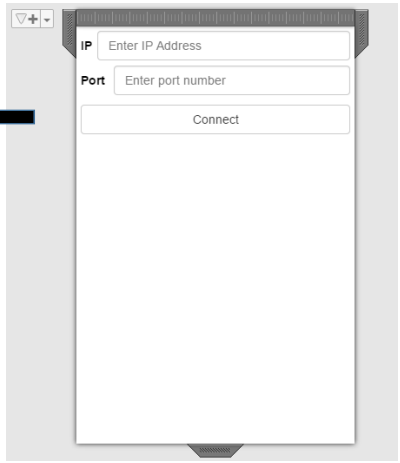


Create empty HTML5 mobile app with Intel XDK

Click 'START A NEW PROJECT' > HTML5 COMPANION HYBRID MOBILE OR WEB APP > BLANK > Standard HTML5 (Use App Designer)

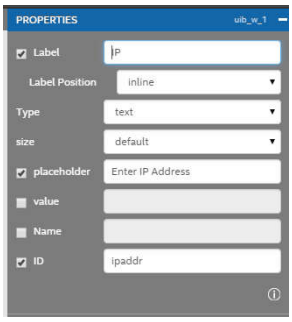


Create Front page



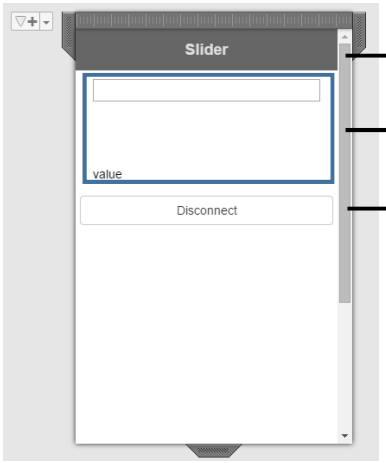
Buttons - Button

Common - Input



Rename the label, placeholder and ID for each input textboxes for IP and Port.

Create slider page

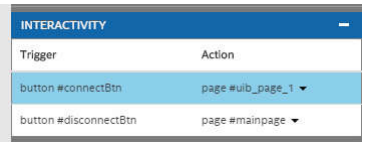


Header,

Layout - Row

Buttons - Button

Assign action trigger for ‘Connect’ & ‘Disconnect’ buttons.



jQuery Simple Slider

We are going to use this simple slider for our servo control

http://loopj.com/jquery-simple-slider/

Install Slider

- Extract **loopj-jquery-simple-slider.zip**
- Copy **simple-slider.js** into your project directory at '<your-mobile-slider-project>\www\js'
- Copy **simple-slider.css** into your project directory at '<your-mobile-slider-project>\www\css'

Install Slider: Cont.

- Put these lines exactly before </head> in 'index.html'

```
<script src="js/simple-slider.js"></script>
<link href="css/simple-slider.css" rel="stylesheet" type="text/css" />
```


Install Slider: Cont.

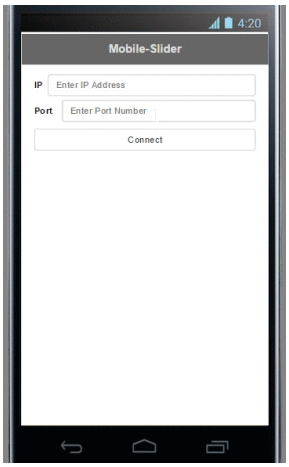
- Add these line:

```
<input type="text" data-slider="true" d="my-input" data-slider-range="0, 180">
<span id="myspan">value</span>
```

- inside this '**widget-container**' block from your '**index.html**' so that you will have:

```
<div class="widget-container content-area vertical-col">
        <input type="text" data-slider="true" id="my-input" data-slider-range="0, 180">
        <span id="myspan">value</span>
</div>
```

Install Slider: Result



Go to '**Simulate**' tab, and start the simulator.

Build logic for Slider HTML5 mobile app

Go to '04_iot-slider_demo' and open 'mobile-slider' with Intel XDK.

Add Socket.IO to connect to Edison

- Add Socket.IO CDN script before </head> in your '**index.html**' (line: **75**)

```
<script src="https://cdn.socket.io/socket.io-1.4.5.js"></script>
```


Add Socket.IO to connect to Edison

- Establish connection from mobile-slider to Edison servo (refer **index.html** line: **141**)

```
var ip = $("#ipaddr").val();
var portnum = $("#port").val();

var socket = io("http://" + ip + ":" + portnum);
```

Get values from Slider and pass it to Edison

- index.html, Line: 147

```
socket.on('connect', function() {
        console.log("connected!");

        $("#my-input").bind("slider:changed", function (event, data) {
        // The currently selected value of the slider
        document.getElementById("myspan").textContent = data.value;
        // stream-out to edison
        socket.emit('msg', data.value);
});
```


Run DEMO

04_iot-slider_demo

edison-J5servo

mobile-slider

Run: edison-j5servo

- Copy 'edison-j5servo.tar.gz' into your Edison
  - 'Right click > Git Bash Here' in 'edison-j5servo' folder
  - Copy
    - $ scp edison-j5servo.tar.gz root@<your-ip>:/home/root

Run: edison-j5servo (cont.)

- Open Serial connection to Edison using PuTTY
- Extract the project
  - $ tar xzvf edison-j5servo.tar.gz

Run: edison-j5servo (cont.)

- Go into project folder
  - $ cd edison-j5servo
- Resolve dependencies
  - $ npm install --save
- Run edison-j5servo
  - $ node main.js

Run: mobile-slider

- Run mobile-slider with Intel XDK
  - Launch Intel XDK.
  - Click 'OPEN AN INTEL XDK PROJECT' and open 'mobile-slider.xdk'
  - Simulate mobile app
    - Click 'Simulate'
    - Choose IOS > Apple Iphone 6
    - Click play icon to start simulator
    - Enter IP Address and port number.

End