#### CSCI 4140 - Tutorial 6

# **Assignment 2 Overview (Client Side)**

# Hints on Front-end Development

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**SHB 118** 

Office Hour: Tuesday, 3-5 pm

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#### **Outline**

- Demonstration
- Client side
  - Layout design
  - QR code display
  - Playlist management
  - YouTube player control
- Next tutorial
  - Work flow
  - Server side

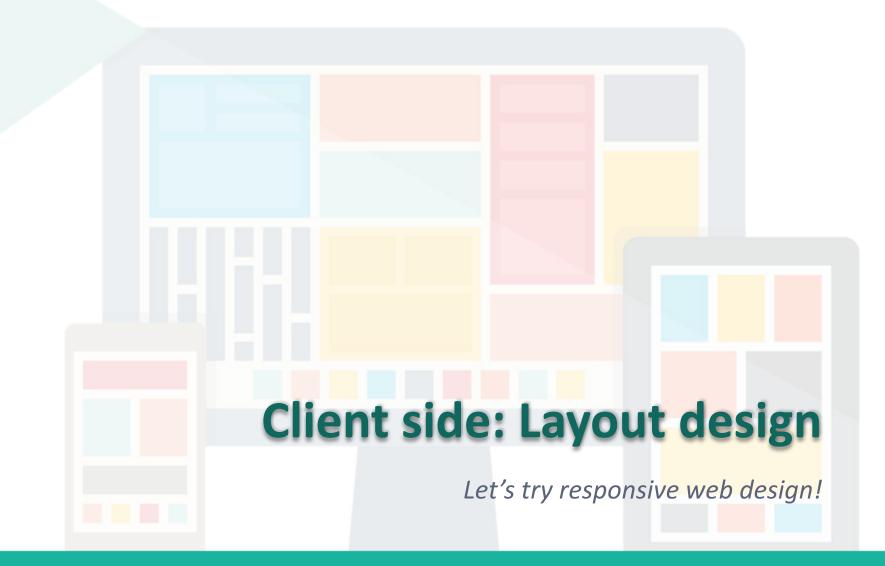


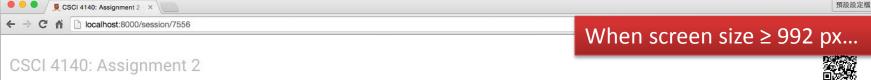
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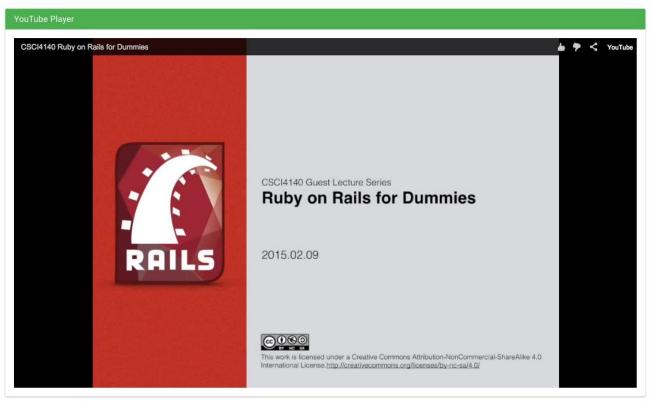
The demonstration will be video-taped. The YouTube link will be available later.

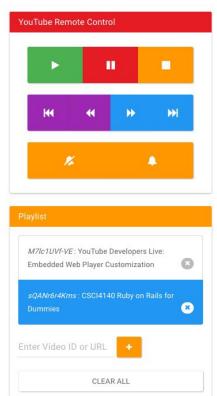
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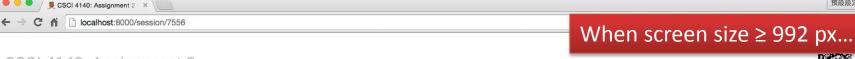


#### YouTube Remote (Desktop)





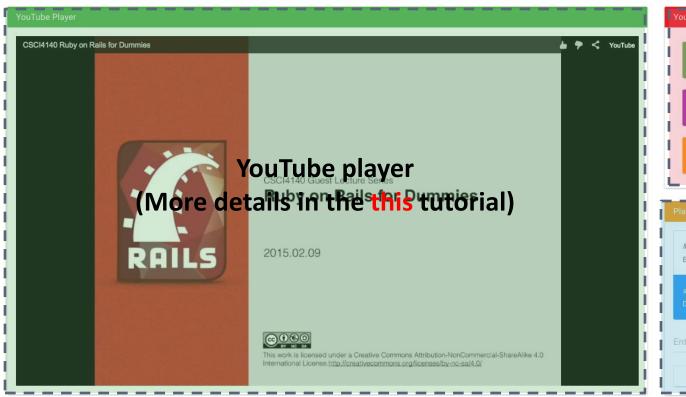
asgn2-desktop.png



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#### YouTube Remote (Desktop)





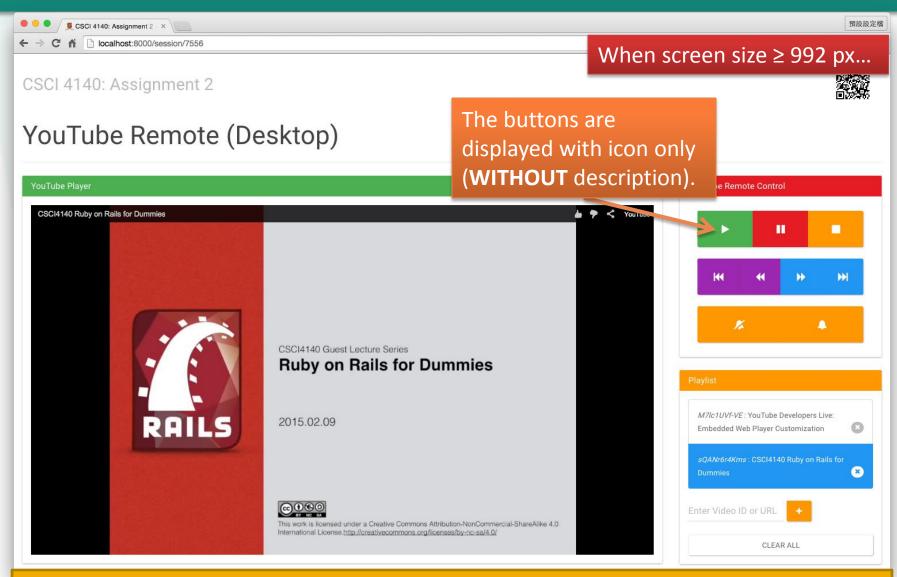
M7Ic1UVI-VE: YouTube Developers Live:
Embedded Web Player Customization

\*\*SQANiGr4Kn\*\* Proceedings for Dummies\*\*

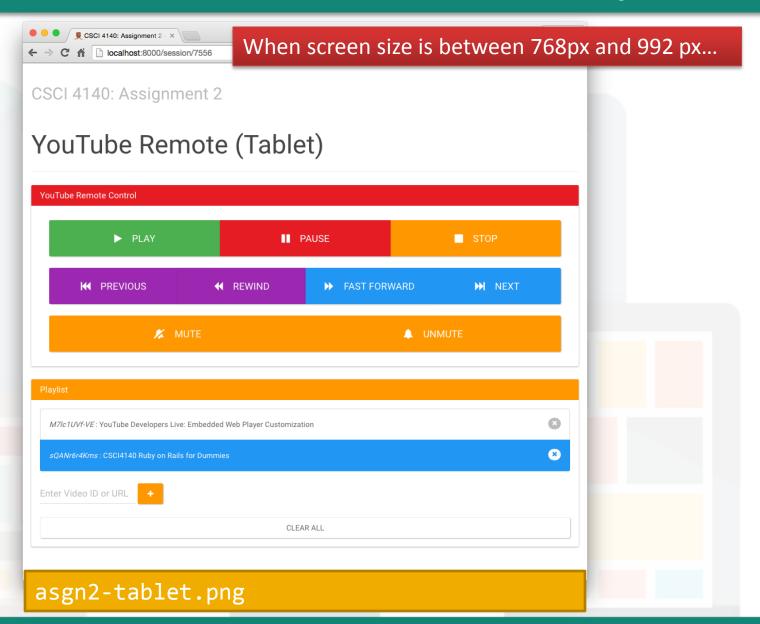
Enter Video ID or URL

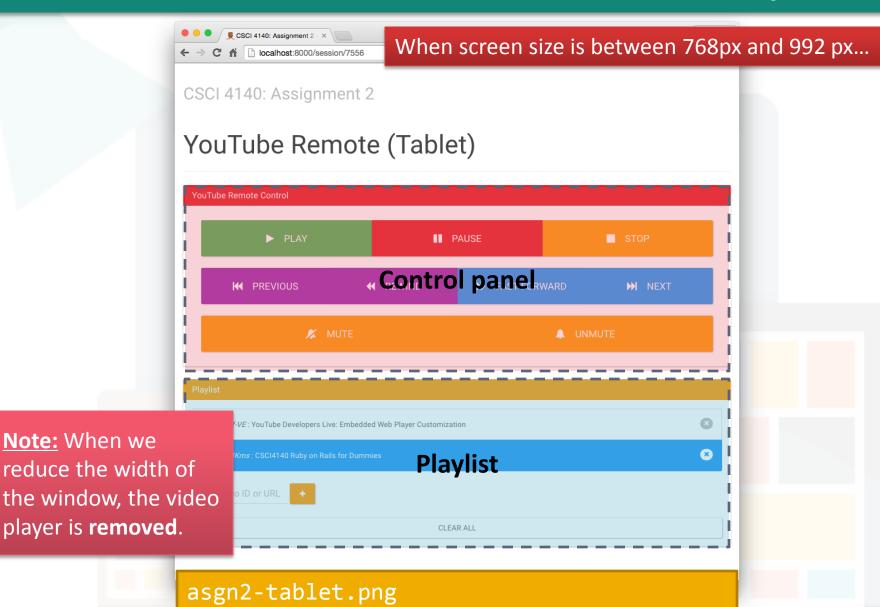
\*\*CLEAR ALL

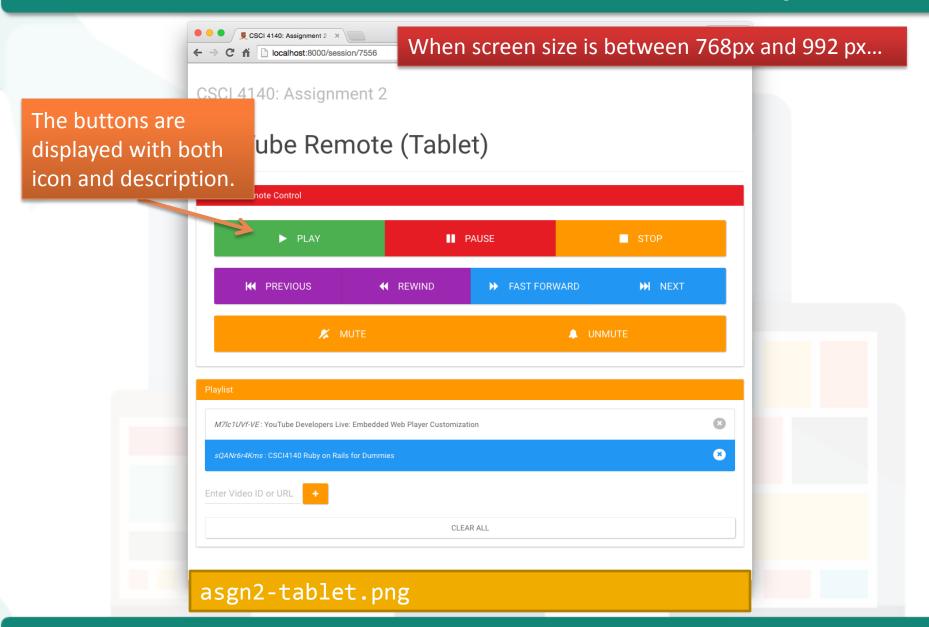
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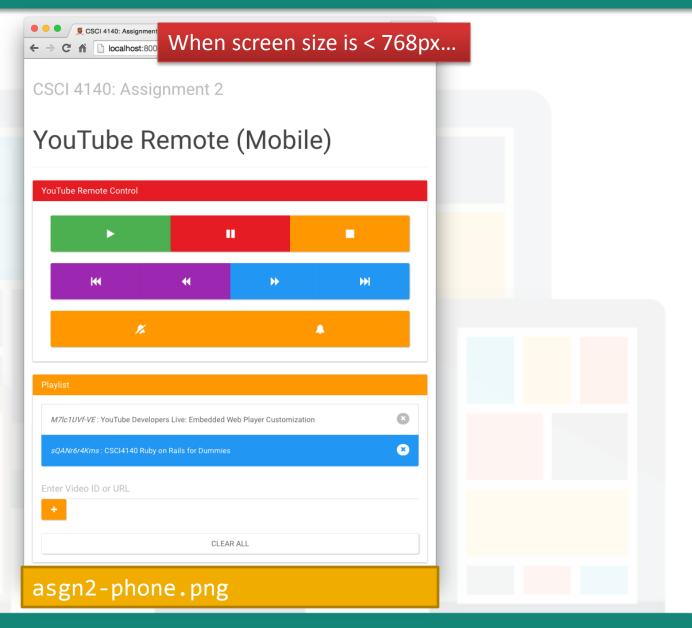


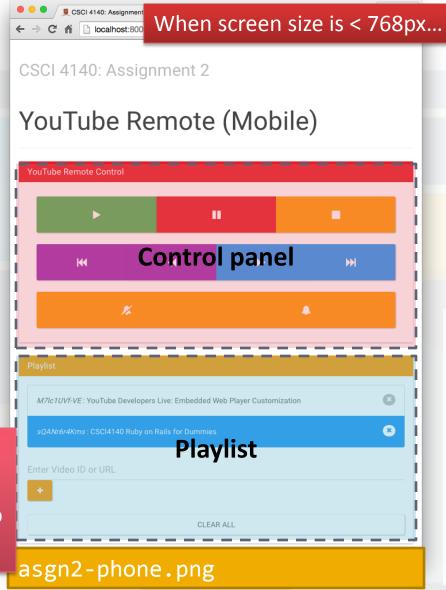
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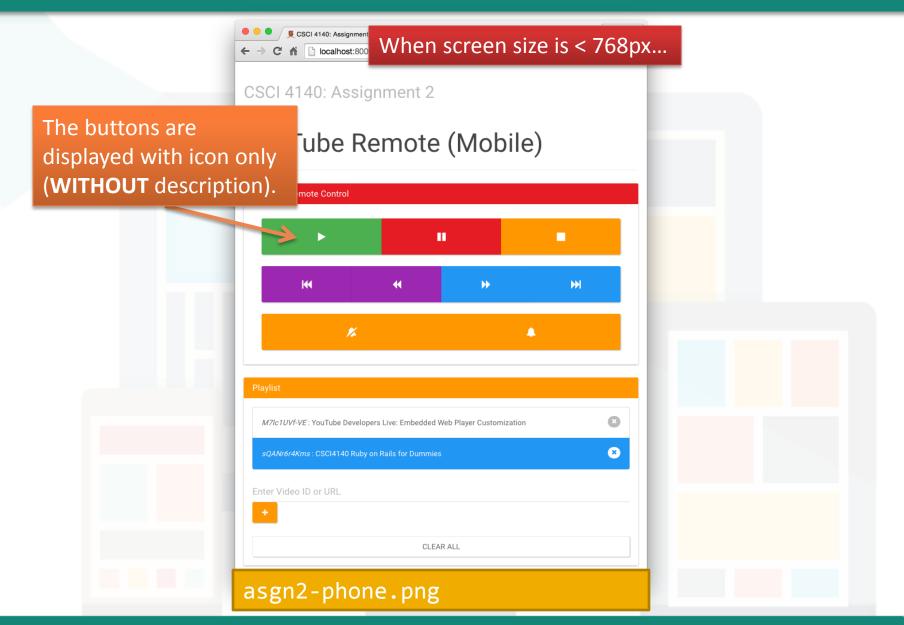








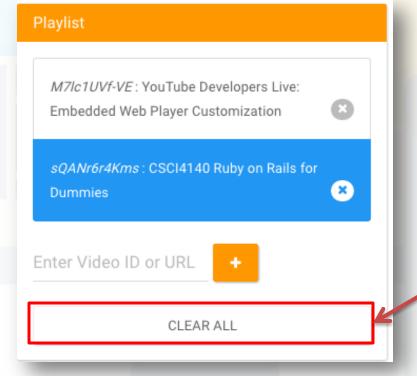
Note: When we reduce the width of the window, the video player is **removed**.



## Client side: Layout design

 If you already implemented the layout by following the screen capture from last tutorial slides, please add a "Clear All" button

for the playlist:



Sorry...this button is missing in last tutorial slides... Please add it back.

## Client side: Layout design

- You are asked to implement a responsive UI
- We will resize the window WITHOUT refreshing the page, so you are forced to do the screen width detection in client side
  - Suggested solution: Bootstrap / CSS media queries
  - Not recommended: JavaScript
- You are free to rearrange the components, but they must meet the requirements in the specification
- Read the slides from last tutorial if you didn't come

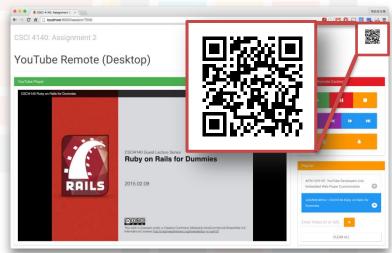
Note: If you want to clone the UI of my site, you can download the high quality screen capture from the resource page ©

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#### Client side: QR code display

- You need to display a QR code on the page
- The QR code should only contain the URL of the current page
- You can generate the QR code on server side or client side
- Use "location.href" to get the URL of the current page in JavaScript
- Use Google Chart to generate QR code:
  - https://developers.google.com/chart/ infographics/docs/qr\_codes



#### Client side: QR code display

Google Chart Example:

qr\_code/qr\_code.html



#### Client side: QR code display

Google Chart Example:

```
<html>
<head><ti<del>tlo>OP_Codo_Domo</del></t</pre>
                                               Specify the image
             Specify a QR code.
                                       size.(cht=<width>x<height>)
<body>
     <img src="https://chart.googleapis.com/</pre>
chart?cht=qr&chs=500x500&chl=http%3A%2F%2Fww
w.cse.cuhk.edu.hk%2F"/>
</body>
                             The data to encode. If you need to specify a URL, it should
</html>
                             be UTF-8 URL-encoded. The JavaScript encodeURI()
qr_code/qr_code.html
                             function can do so.
                             Ref.: <a href="http://www.w3schools.com/jsref/jsref_encodeuri.asp">http://www.w3schools.com/jsref/jsref_encodeuri.asp</a>
```

- How to combine it with "location.href"?
  - Hint: Generate the <img> tag in JavaScript (e.g. by document.write)

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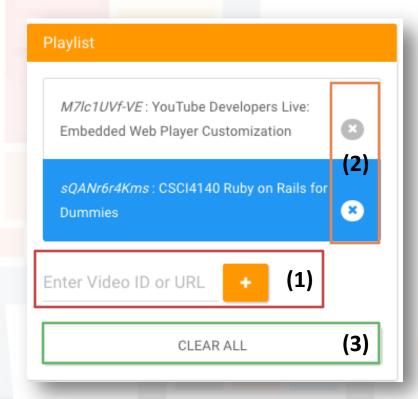
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## Client side: Playlist management

- You need to manage a playlist in the application
- Operations supported:
  - Add new video (with its video ID) to the playlist (1)
  - Remove a existing video from the playlist (2)
  - Clear all videos in the playlist (3)
- Of course, the playlist should be displayed in your web page
- Suggested format:

<Video ID>: <Video title>



## Client side: Playlist management

- When a video is added to or removed from the playlist, the change should be reflected in the UI
  - Use DOM scripting
  - Useful functions:
    - document.getElementById()
    - document.querySelector() (in HTML5)
    - createElement()
    - appendChild()
    - removeChild()
  - Read the lecture notes: "JavaScript (Part 1)"

#### Client side: Playlist management

- The playlist does not need to be stored on server side
- Storing it on client side is sufficient
  - But, let's forget about cookies
- Use HTML5 localStorage:
  - To get an item with a key:

```
var i = localStorage.getItem( <key> );
```

To set an item with a key

```
localStorage.setItem( <key>, <item> );
```

- Note: The data type of the item should be String
  - Use "JSON.stringify()" to convert an array / object to a String

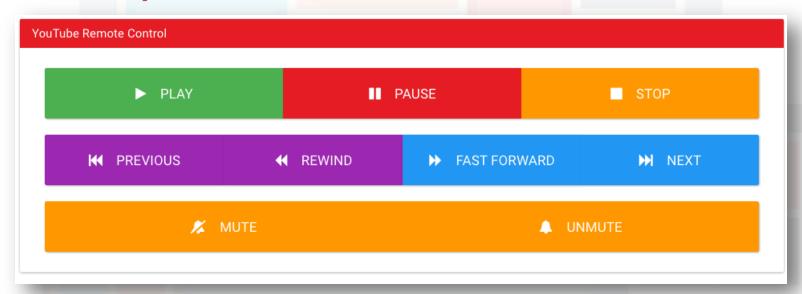
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## Client side: YouTube player control

You need to implement the following functions with YouTube
 IFrame Player API



Read the corresponding tutorial slides for more details

#### Reminder

- You should finish the UI design
- You should start implementing the player and control logic
- Implement all playback control functions which controls the video player on the same page
  - Hint: Wrap all YouTube IFrame API calls in your functions
    - This is useful for extending to support remote control
- Next week: Assignment 2 Overview (Server Side) & Back-end development
  - We will use Node.js and Socket.IO in server-side
  - Make sure you have installed Node.js and Express on your computer

- End -