



Remote Classroom Notes

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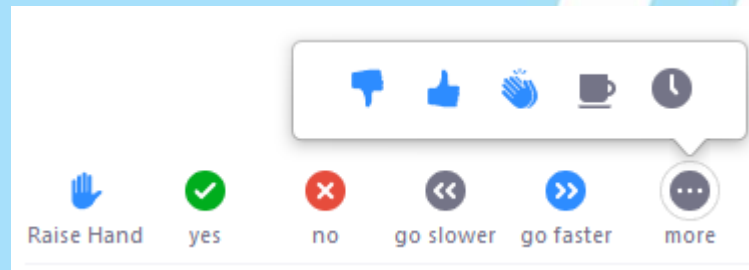
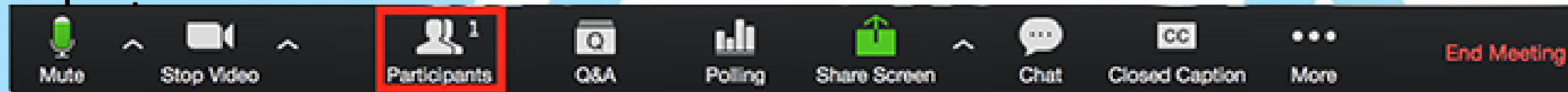
- Please set your name with the following format:
First Last - e.g. Jane Smith
- Make sure your volume is turned up so that you can hear the audio.
- Please keep your microphone muted.
 - Alt-A toggle mute.
 - Spacebar works like a walkie-talkie.
- If your camera is not working with Zoom, check your privacy settings.
- If you experience stuttering during the remote session, disable your video.

Remote Class Format

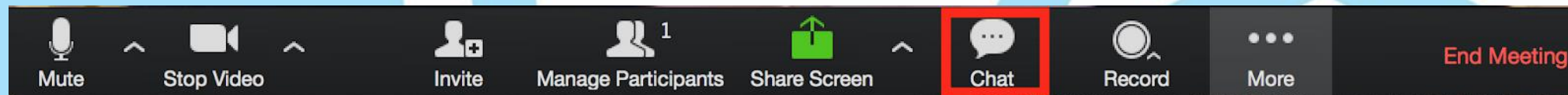
- Socrative survey, as usual
- Review quiz
- Lecture
 - We'll do 10-minute breaks at 10:00 and 11:00. PLEASE remind me!
 - You may not be able to code-along, especially if you do not have multiple screens.
 - Plan is to share a recording of the session so you can view again and code along if you want to.
- A Socrative survey will be provided at the end of class.
 - Please provide any feedback you can to help us improve the quality of the remote lecture.

Remote Class Features

- Feedback Cues allow you to communicate to me throughout the



- In-meeting chat allows you to send messages during the lecture. Use it as a way to ask questions during the lecture.



Remote Class Features

- Use the Raise Hand feature if you've got a question. The icon will appear next to your name.



Grant MacLaren



Make the Most of Remote Learning

- Resist the urge to multi-task (surfing the internet).
- Try to find a quiet place away from the noise of the household.
- Read the student book and (if applicable) attempt the tutorial in advance of class.

Wrapping Up

- Please complete the Socrative feedback survey by 12:15 PM to let us know how we can improve our remote lecture experience.
 - Please let us know how we can improve our remote lecture experience.



Module 4 Day 1

Creating a REST API with ASP.NET MVC

Application Programming Interfaces (API)

- <https://api.weather.gov/gridpoints/CLE/88,55/forecast>
- https://developer.nps.gov/api/v1/parks?parkCode=cuva&api_key=sarrXt7VtO7SLrLPx4h2DzH7uE5ZdtMyFlub7BXY
- <http://www.omdbapi.com/?s=Harry%20Potter&apikey=3c946b98>
- <https://cat-fact.herokuapp.com/facts>
- <https://random.dog/woof.json>
- <https://www.computersciencezone.org/50-most-useful-apis-for-developers/>
- <https://apist.fun/collection/cool-apis>
- <https://apist.fun/collection/free-apis>



Demo

API Terms

Term	Definition
API	<p>Application Programming Interface. A set of functions and procedures allowing other applications to access the features or data of an operating system, application, or other service.</p> <p>An API may be for a web-based system, operating system, database system, computer hardware, or software library.</p>
Web API or Web Service	<p>A service (API) offered by an application or device to another application, which communicate with each other via the World Wide Web (typically HTTP).</p>
REST	<p>Representational State Transfer. One style of web service which utilizes HTTP features (statelessness, Request and Response, and GET, PUT, POST and DELETE methods) for accessing and updating data.</p>
Consumer	<p>A user of web services. This is software, not a person.</p>
Endpoint	<p>The "location" at which a service's features (methods / data) can be accessed. For a web service, this is usually a URL.</p>

HTTP Methods (Verbs)

Method	Definition
GET	Read and return the specified resource. Requests using GET should only retrieve data, never change server data.
POST	Create a new resource, often causing a change in state on the server. Not idempotent (duplicate calls might cause two new resources).
PUT	Update the specified resource with the request payload. Idempotent (duplicate calls may be made without side effects).
DELETE	Remove the specified resource from the server.
PATCH	Update a portion of the specified resource (seldom used).

Tools

- JSON Viewer (Chrome extension)
- Postman
- REST Client (VS Code extension)



Demo

HTTP Methods (Verbs)

Method	URL	Req Body	Resp Body
GET	http://api.com/cities	None	JSON array of objects
GET	http://api.com/cities/101	None	JSON object
POST	http://api.com/cities	JSON object	None (or id)
PUT	http://api.com/cities/101	JSON object	None
DELETE	http://api.com/cities/101	None	None

MVC API Controller

- Derives from ControllerBase
 - Traditional Controller derives from Controller, then ControllerBase
 - Eliminates a bunch of stuff we don't need (for Views)
- Class Attributes
 - [ApiController]
 - [Route("api/products")]
- Action Attributes
 - [HttpGet], [HttpPut], [HttpPost], [HttpDelete]
 - [HttpGet(routeTemplate, Name="route_name")]
 - [Route("{id}")]



Let's
Code

MVC API Controller

- Action return values
 - ActionResult
 - Results automatically converted to JSON
 - Http Response codes
 - Ok() (default)
 - NotFound()
 - Created(), CreatedAtRoute(), CreatedAtAction()
 - NoContent()
- Binding source inference (parameter attributes)
 - [FromBody], [FromQuery], [FromRoute]

Documentation with Swagger

- Setting up Swagger – Startup.cs
- XML Comments
- Setting up Swagger as the project start page

Wrap-up

- Exercise – getting started
- Office Hours – 2:30 – 3:30pm.
 - Meeting id: <https://zoom.us/j/2167985822>
 - You can still Ryver at any time.
- Please provide feedback on Socrative.com