

Polling

Making it Live

- What if someone chats after you load the page?
 - Have to refresh or send a new AJAX call to get the new data
 - AJAX is preferred, but what triggered the AJAX request?
- Polling
 - Keep sending AJAX requests at fixed intervals to refresh the data

Polling

```
setInterval(getMessages, 1000)
```

- Browser sends requests for updates at regular intervals
- Use setInterval
 - Takes a function to be called
 - Takes the number of milliseconds to wait between function calls
- This example calls getMessages() every second
 - getMessages() makes the AJAX call to get the most recent data from the server and render it on the page

Polling

```
setInterval(getMessages, 1000)
```

- Easy to implement
 - Assuming the AJAX calls are already setup
 - Just telling the browser to keep making requests to the server
- Limitations
 - Users wait unto an entire interval to get new content
 - Lowering the interval length increases server load and bandwidth

Long-Polling

- Server hangs on requests (Intentionally)
- Client makes a long-poll request to get the most current data
 - If there's new data, the server responds just like polling
 - When the response is received, client makes another long-poll request
- If there's no new data, the server does not send a response
- Server waits until there is new data to be sent, then responds
- Timeouts
 - If there's no new data after ~10-20 seconds, server responds with no new data
 - Client get the response and sends a new long-poll request

Long-Polling

- End result
 - The client always has a request waiting at the server
 - Whenever the server has data to send to the client, it responds to the waiting request
 - Real-time updates!
 - Minimal delays between users without excess server load
 - *If designed properly. This is not true if each requests requires its own thread
- We'll reach this same goal with WebSockets
 - More modern solution
 - No long-polling on HW

Long-Polling

- Even though WebSockets is a more modern solution, many major site still use long-polling
 - I.e. You may still encounter this in your career
- Long-polling only uses HTTP
 - Compatible with very old browsers!