Hello & Welcome!

portagon

👋

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Turbo Stream Broadcasting - Advanced

Let‘s NOT build a chat!

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ntro to WebSockets

The Problem WebSockets Solve

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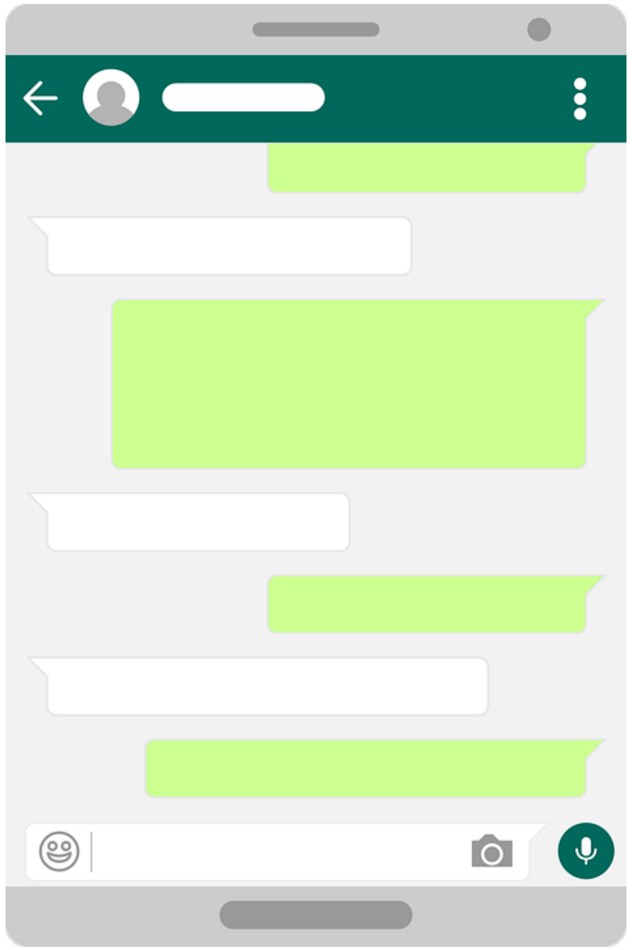
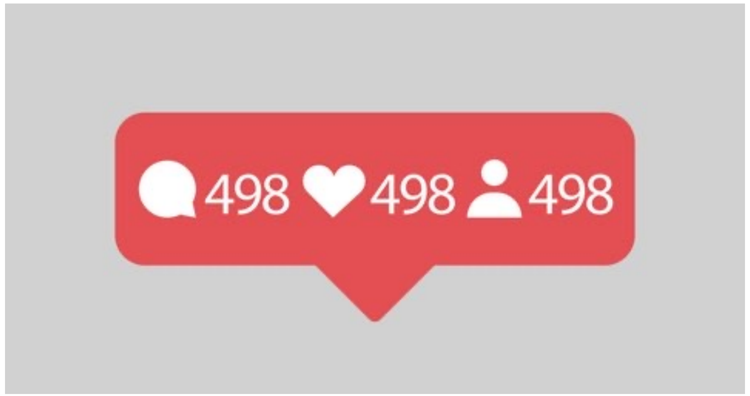
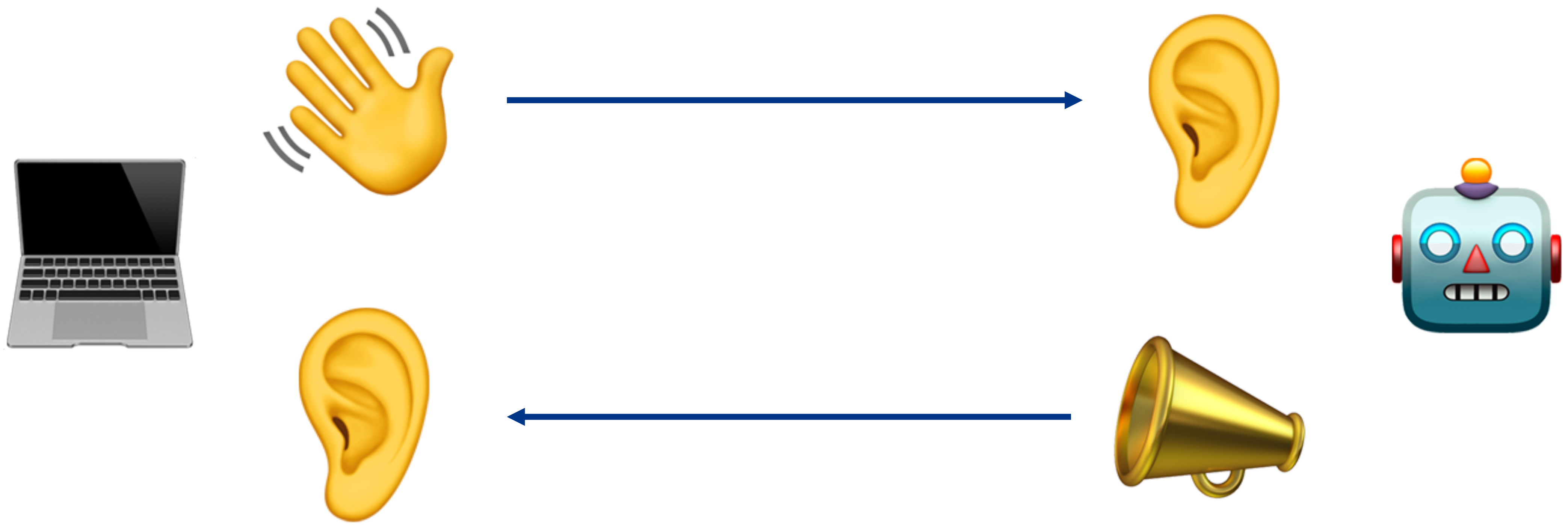


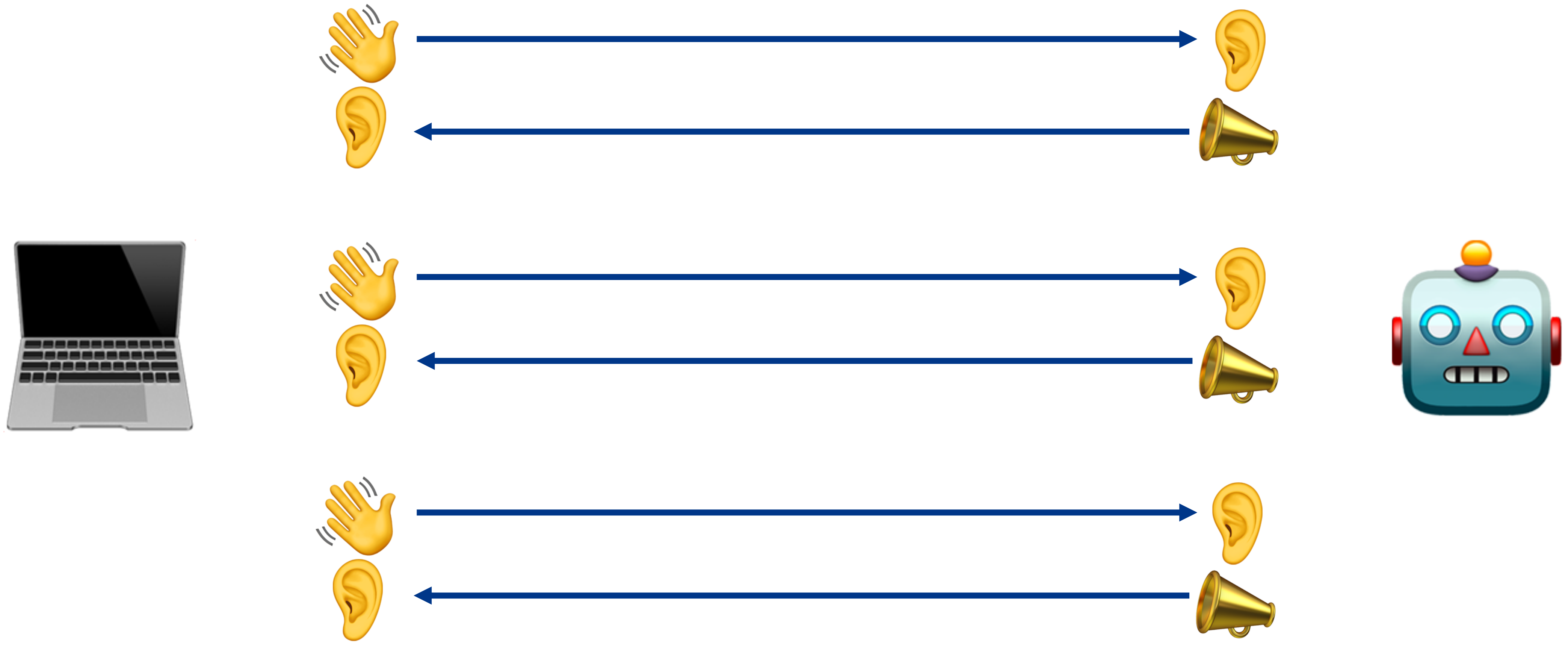


HTTP vs WS

HTTP vs WebSocket - HTTP

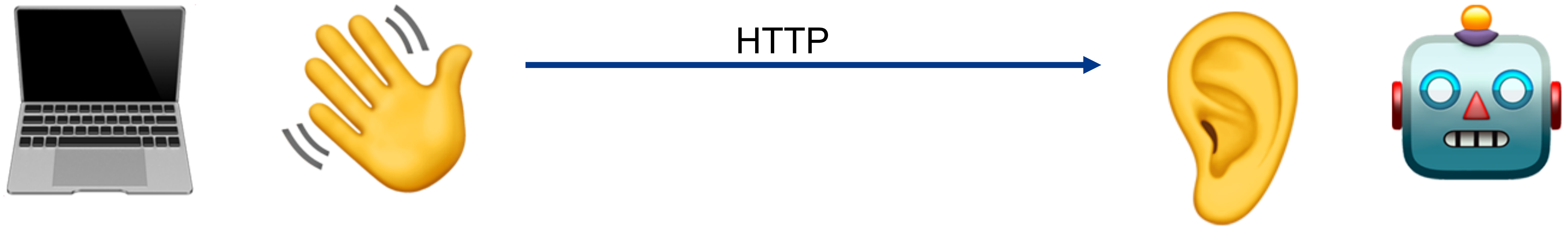


HTTP vs WebSocket - HTTP

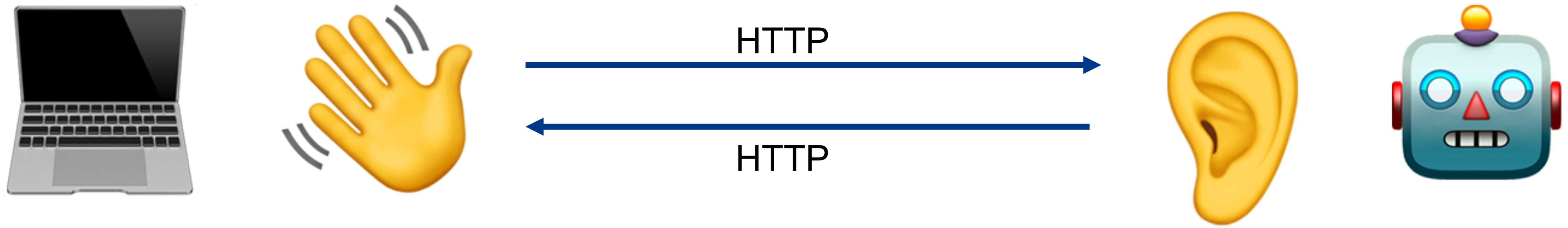


HTTP vs WebSocket - WebSocket

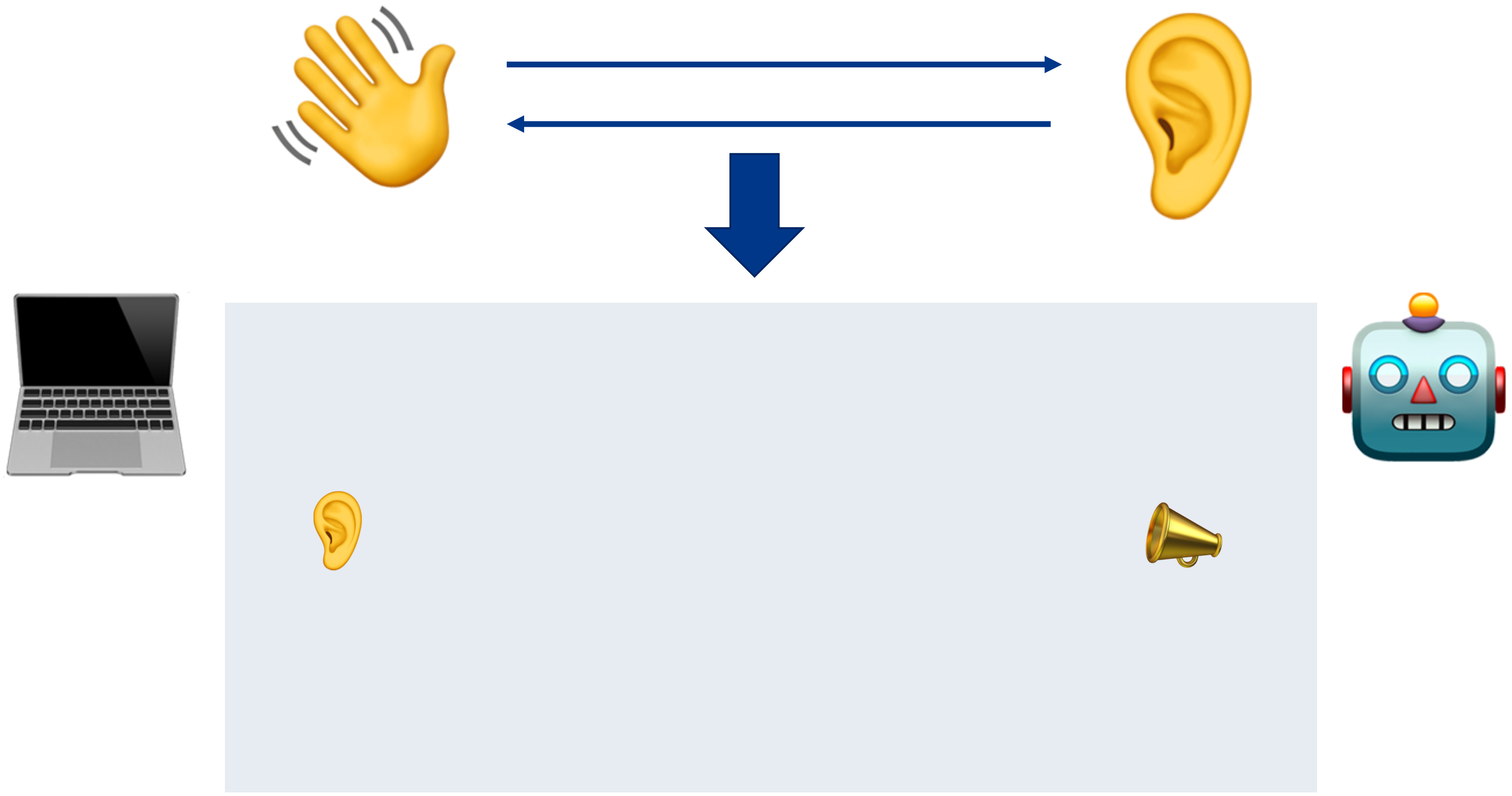
HTTP vs WebSocket - WebSocket



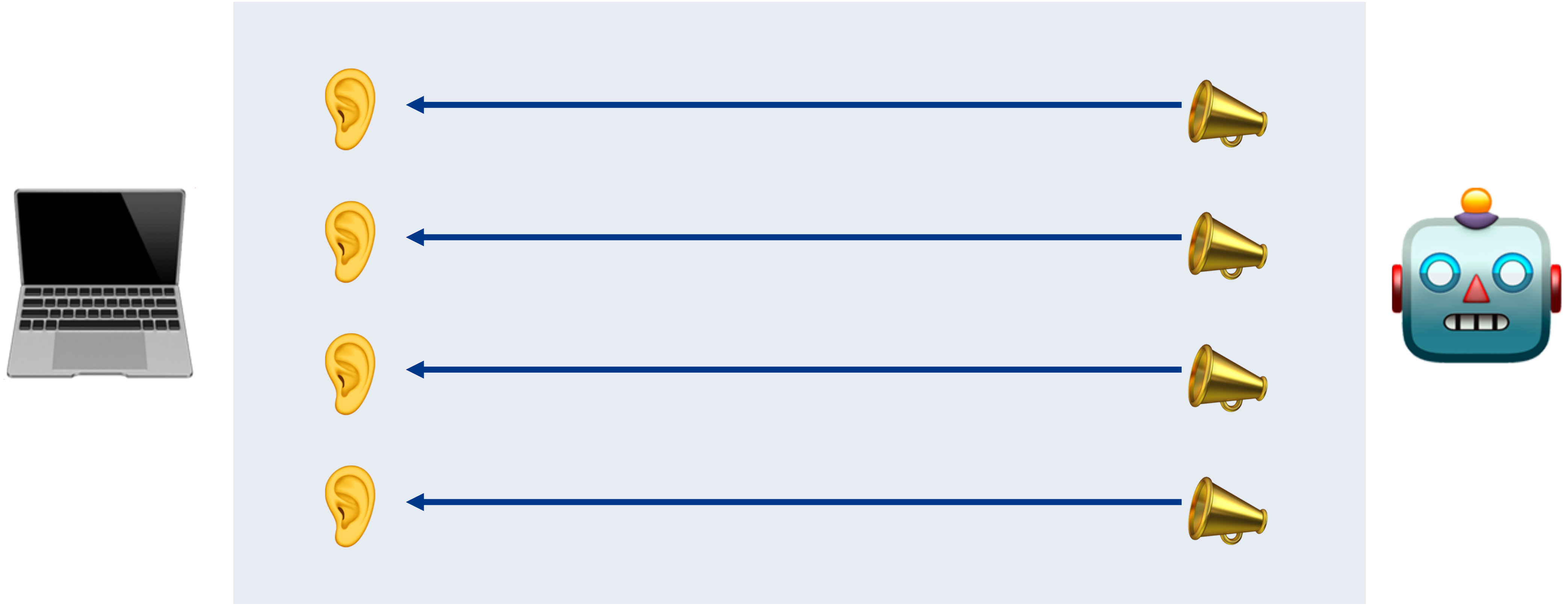
HTTP vs WebSocket - WebSocket



HTTP vs WebSocket - WebSocket



HTTP vs WebSocket - WebSocket



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Rails to the help!

ActionCable

ActionCable

"Action Cable seamlessly integrates WebSockets with the rest of your Rails application. It allows for real-time features to be written in Ruby in the same style and form as the rest of your Rails application…"

- guides.rubyonrails.org

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ActionCable

“…It's a full-stack offering that provides both a client-side JavaScript framework and a server-side Ruby framework.”

- guides.rubyonrails.org

Turbo Stream Broadcasting

Broadcastable

“Using the Broadcastable concern mixed into Active Record, you can trigger WebSocket updates directly from your domain model.”

- turbo.hotwired.dev

Rails to the help!

	ActionCable	Turbo Stream Broadcasting
Rendering	Server-side	Client-side (with Stimulus, faster)
Plug & play	No	Yes
- Broadcasting directly from model	No	Yes
- Update DOM automatically	No	Yes

Rails to the help!

	ActionCable	Turbo Stream Broadcasting
Rendering	Server-side	Client-side (with Stimulus, faster)
Plug & play	No	Yes (show the
- Broadcasting directly from model	No	Yes
- Update DOM automatically	No	Yes

```
# any_model.rb
broadcast_update_to(args)

# any_view.erb.html
<%= turbo_stream_from(args)%>
```

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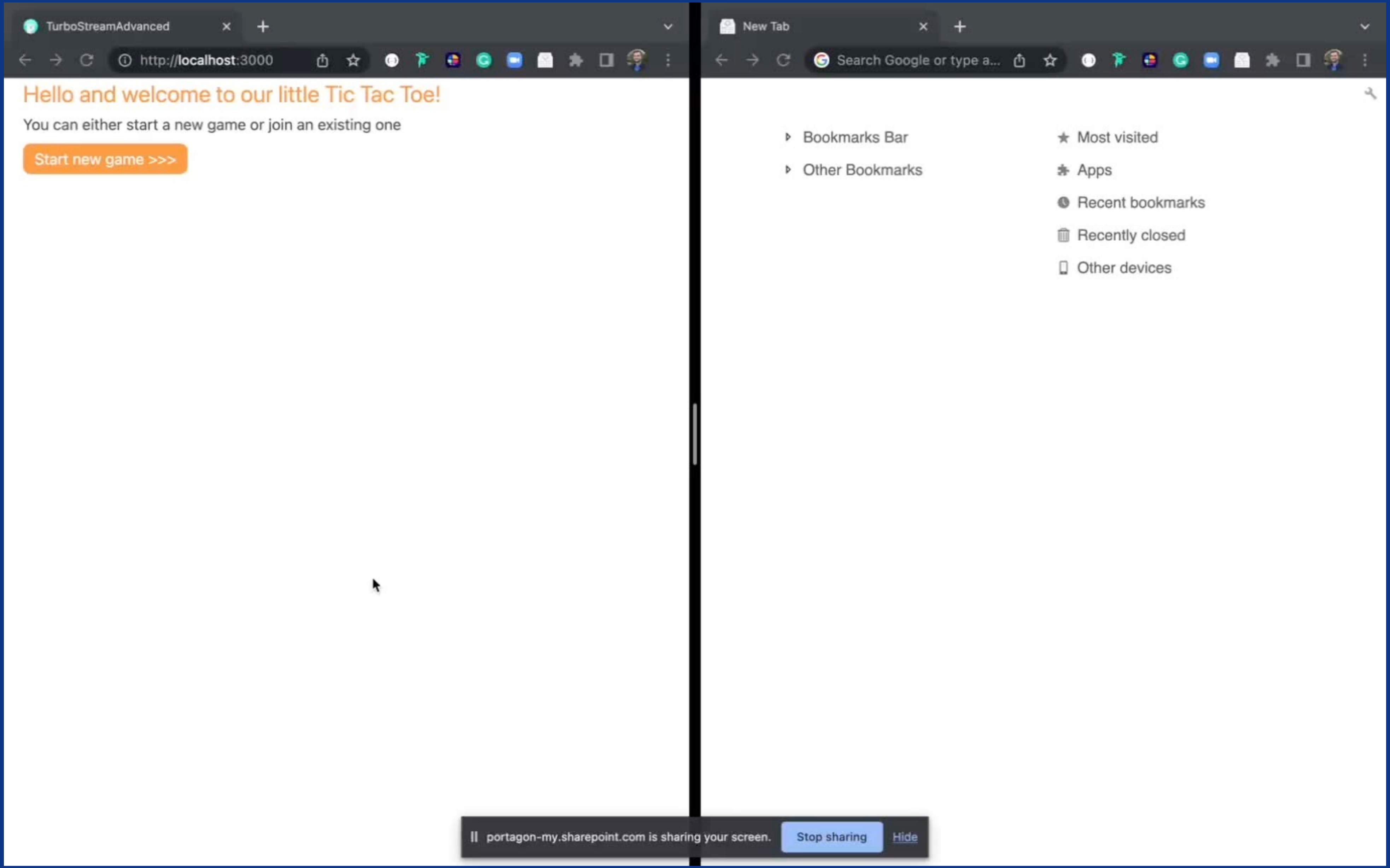
Let’s create an app!

NOT A CHAT!

Tic Tac Toe



Hello and welcome to our little Tic Tac Toe!

You can either start a new game or join an existing one

Let's create an app!

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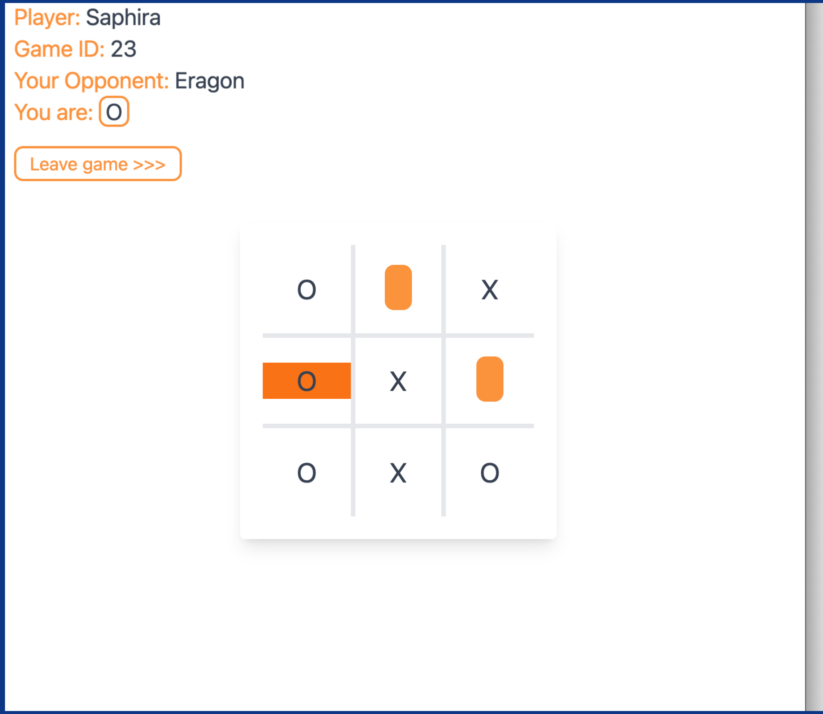
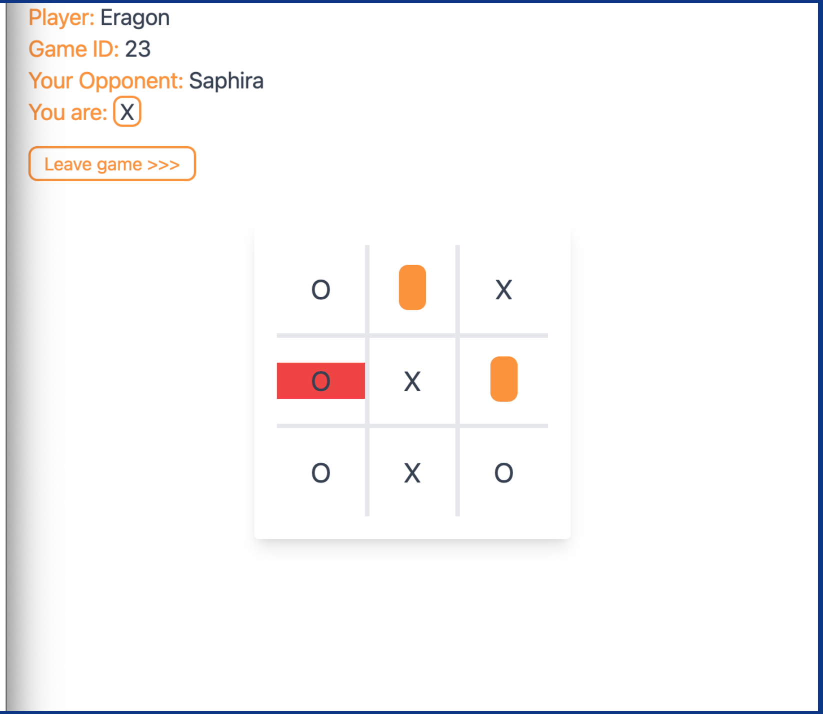

Player: Saphira
Game ID: 23
Your Opponent: Eragon
You are: O

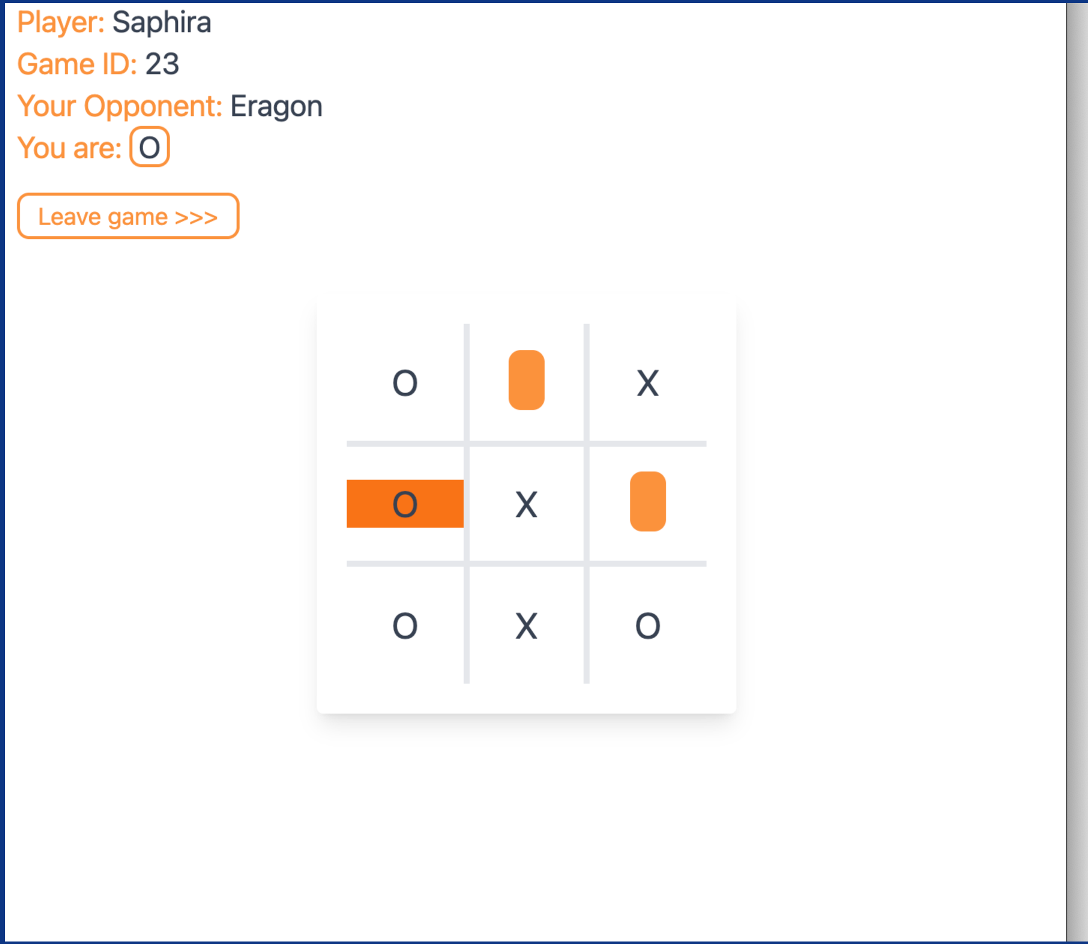

Player: Eragon
Game ID: 23
Your Opponent: Saphira
You are: X

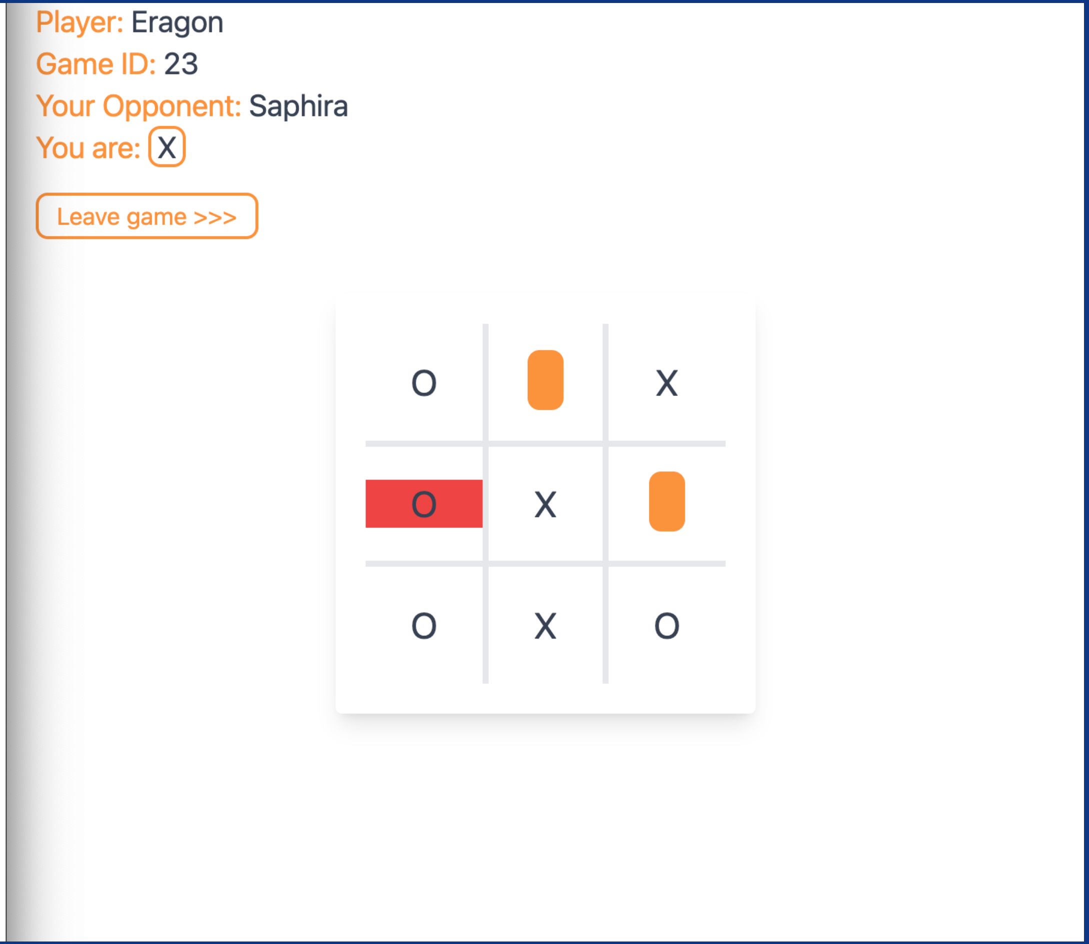
- 2 people involved
- Both players need to be there
- Effect of Actions
- UI Differences

Constraint 1

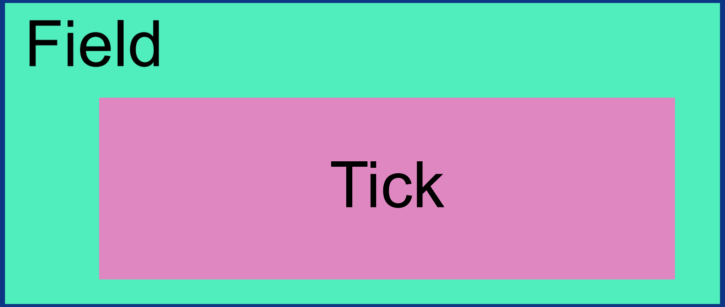
- Both players need to be present
- The other player needs to see my ticks

Let’s create an app! – Constraint 1


Player: Saphira
Game ID: 23
Your Opponent: Eragon
You are: O


Player: Eragon
Game ID: 23
Your Opponent: Saphira
You are: X

Let’s create an app – Constraint 1



Let’s create an app – Constraint 1

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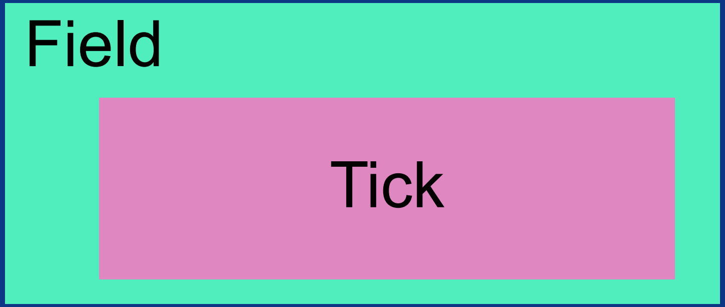
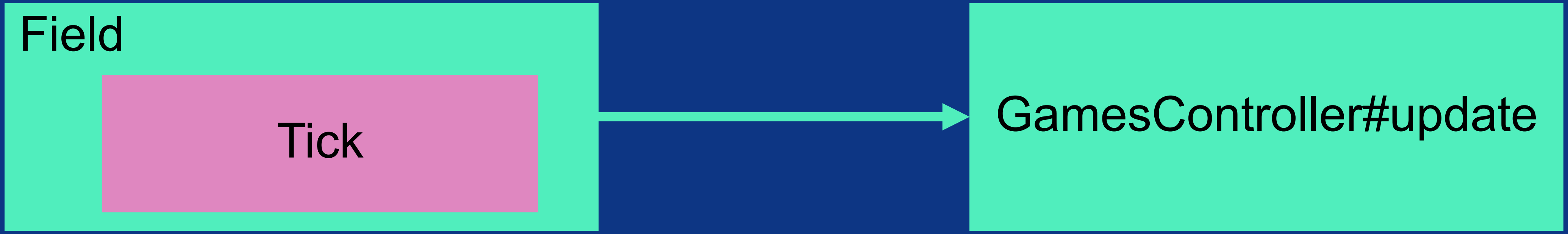
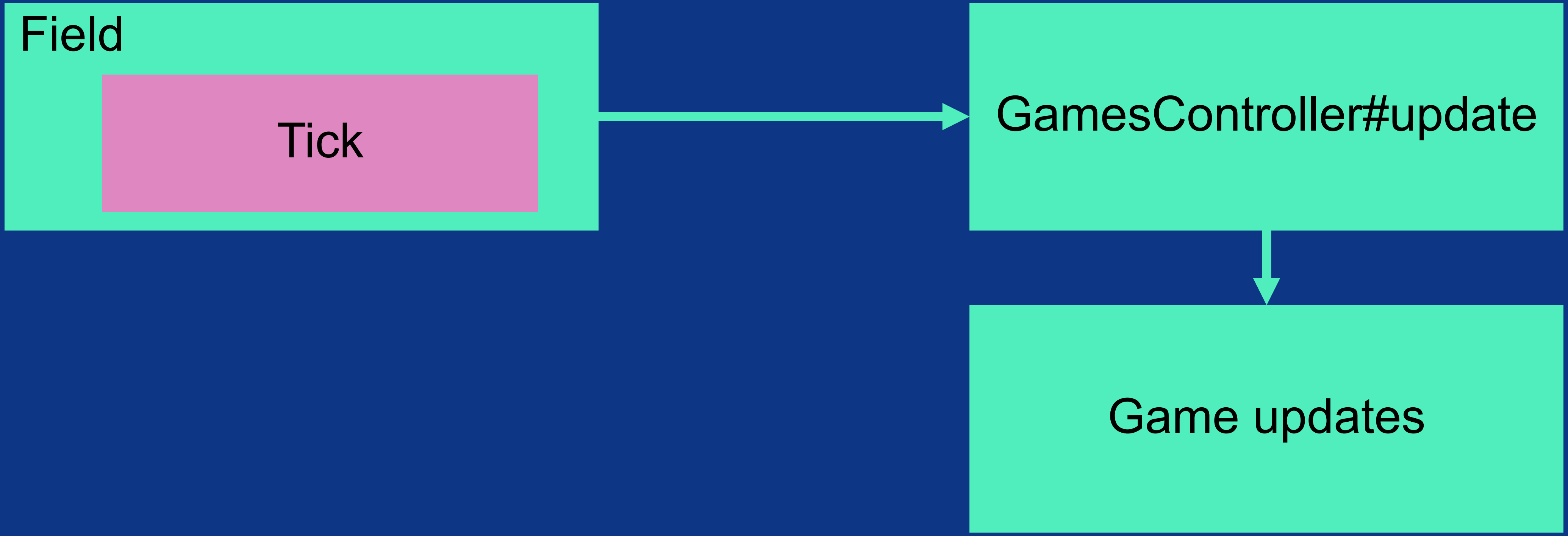


```
# _field.html.erb

<%= turbo_frame_tag "field#{field_nr}" do %>
  # if already ticked
    # show character
  # else
    <%= form_with model: game do |f| %>
     # …
```

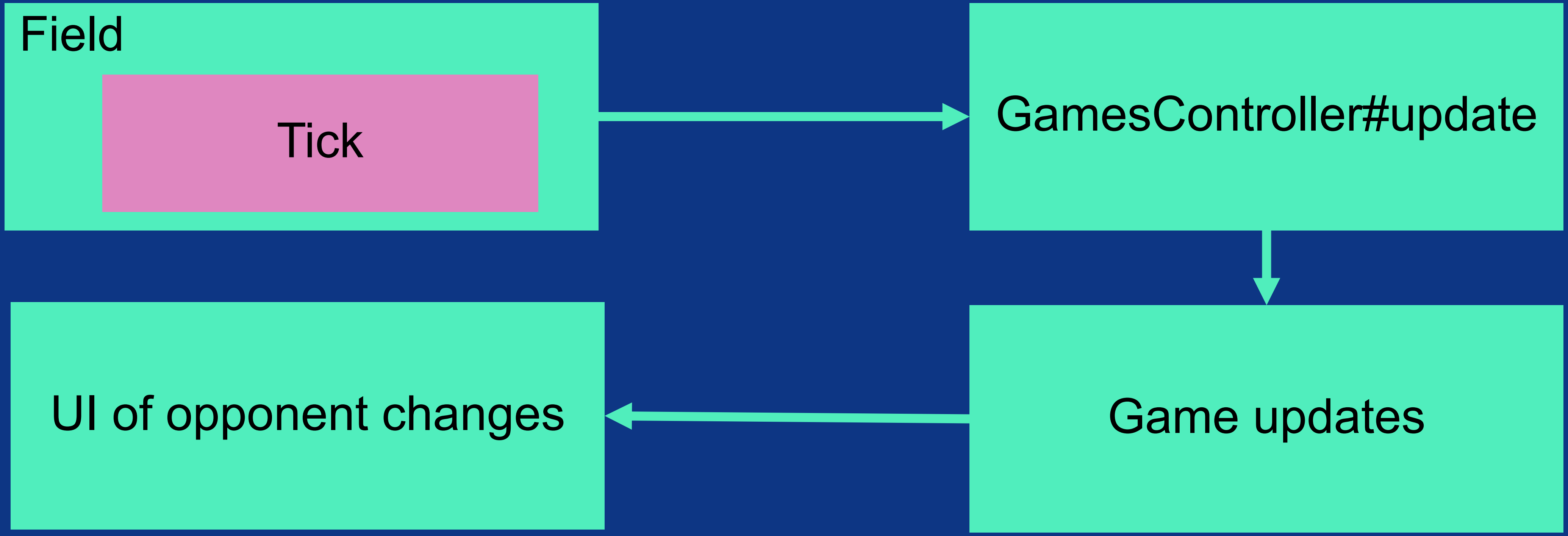
Let’s create an app – Constraint 1



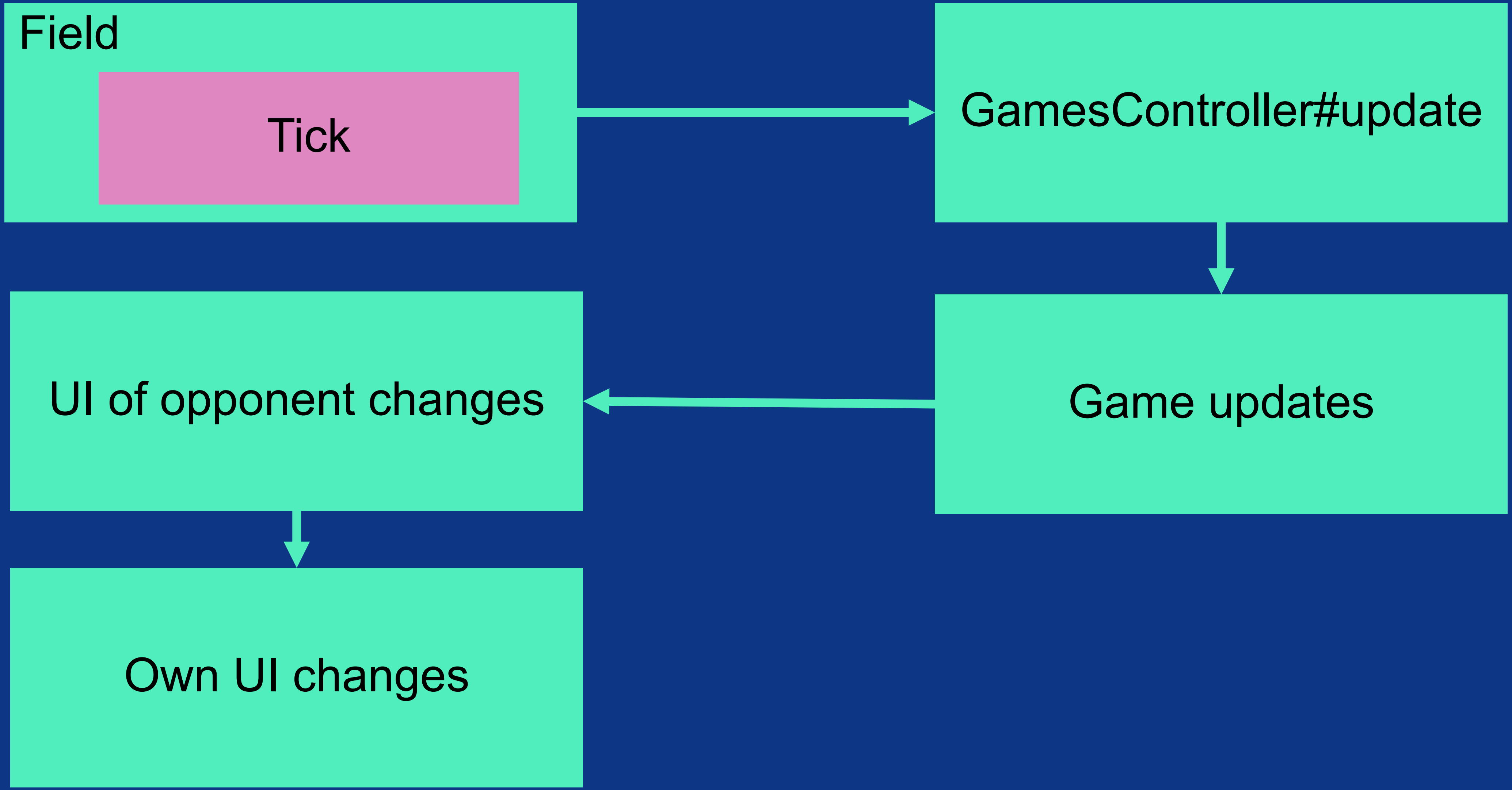
Let's create an app – Constraint 1



Let’s create an app – Constraint 1



Let's create an app – Constraint 1



1. Connect to the Websocket

```
# games/show.html.erb

<%= turbo_stream_from @player, "board" %>
```

2. Broadcast changes

```
# models/game.erb

after_update :broadcast_tick_to_opponent

def broadcast_tick_to_opponent
   # do something to update the record’s field
     attribute
   broadcast_replace_to [player.opponent, 'board’],
     target: field_tag_id,
     partial: 'games/opponent_tick’,
     locals: # some locals
end
```

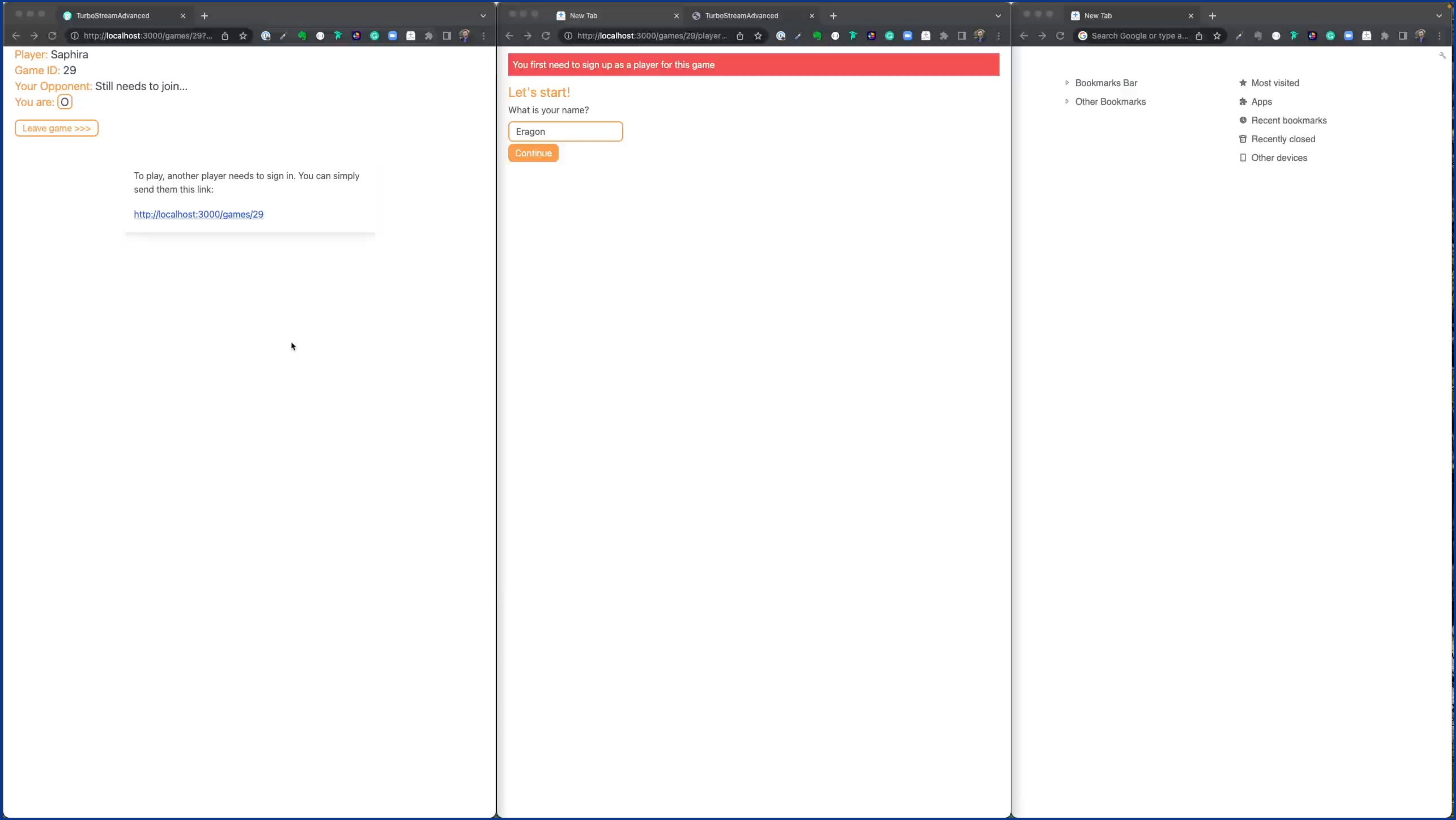
2. Broadcast changes

```
# models/player.erb

after_create :notify_opponent

def notify_opponent
   broadcast_update_to[opponent, 'board’],
     target: 'board’,
     partial: 'games/board’,…

   broadcast_update_to [opponent, 'board’],
     target: 'opponent_name’,
     partial: 'games/opponent_name’,…
end
```

Constraint 2

- Only 2 players should be able to connect

Let’s create an app – Constraint 2



TurboStreamAdvanced

http://localhost:3000/games/29?...

Player: Saphira
Game ID: 29
Your Opponent: Still needs to join...
You are: O

Leave game >>>

To play, another player needs to sign in. You can simply send them this link:

http://localhost:3000/games/29

New Tab | TurboStreamAdvanced

http://localhost:3000/games/29/player...

You first need to sign up as a player for this game

Let's start!
What is your name?
Eragon
Continue

New Tab

Search Google or type a...

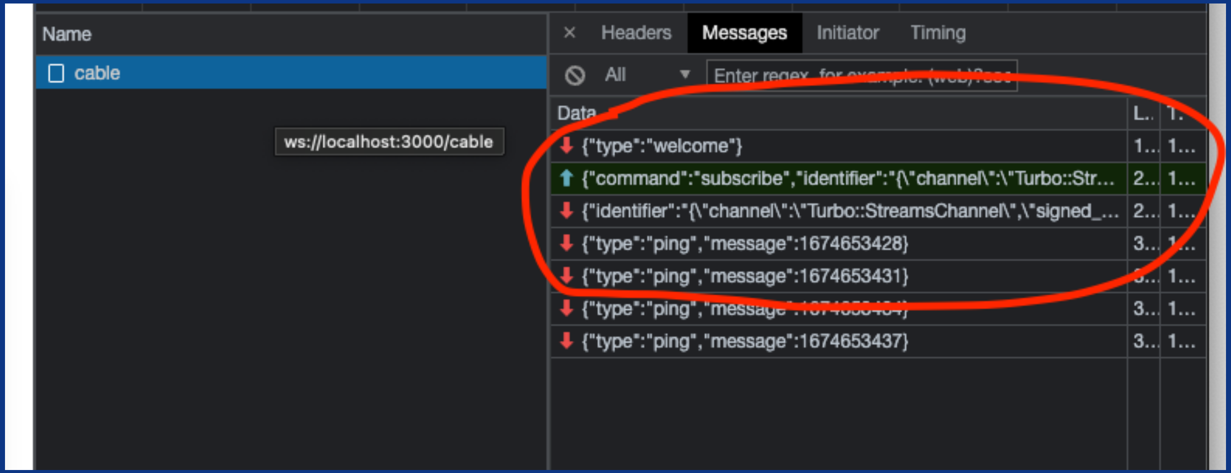
ActionCable::Connection

Start Customizing

```
module ApplicationCable
  class Connection < ActionCable::Connection::Base
     def connect
       player = Player.find_by(id: cookies['player_id’])
       reject_unauthorized_connection unless allow?(player)
     end
  end
end
```

Let's create an app – Constraint 2

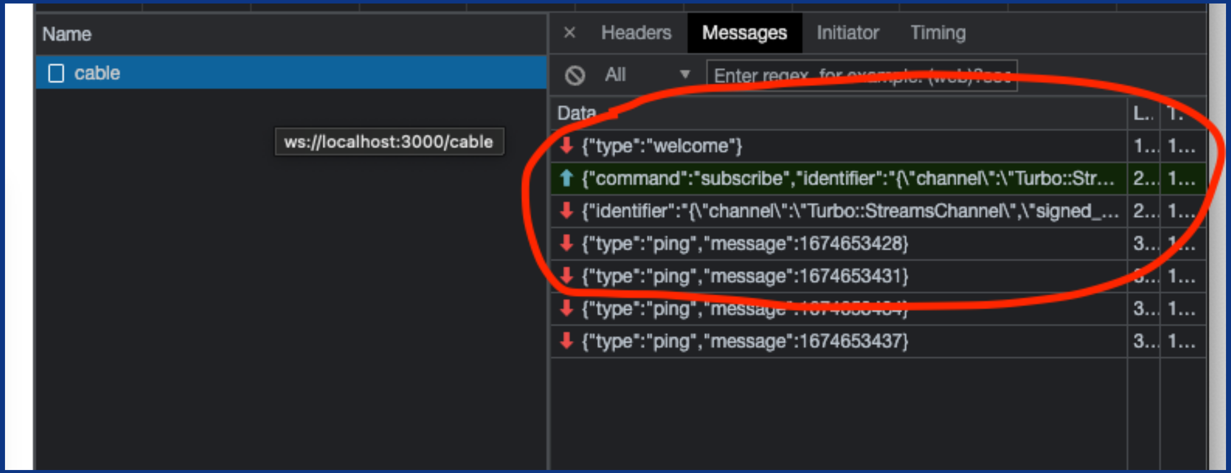
Works



```
Name
cable
ws://localhost:3000/cable

× Headers Messages Initiator Timing
All  Enter regex, for example: (web)?soc
Data                                                                    L.. T..
↓ {"type":"welcome"}                                                    1... 1...
↑ {"command":"subscribe","identifier":"{\"channel\":\"Turbo::Str...     2... 1...
↓ {"identifier":"{\"channel\":\"Turbo::StreamsChannel\",\"signed_...    2... 1...
↓ {"type":"ping","message":1674653428}                                  3... 1...
↓ {"type":"ping","message":1674653431}                                  3... 1...
↓ {"type":"ping","message":1674653434}                                  3... 1...
↓ {"type":"ping","message":1674653437}                                  3... 1...
```

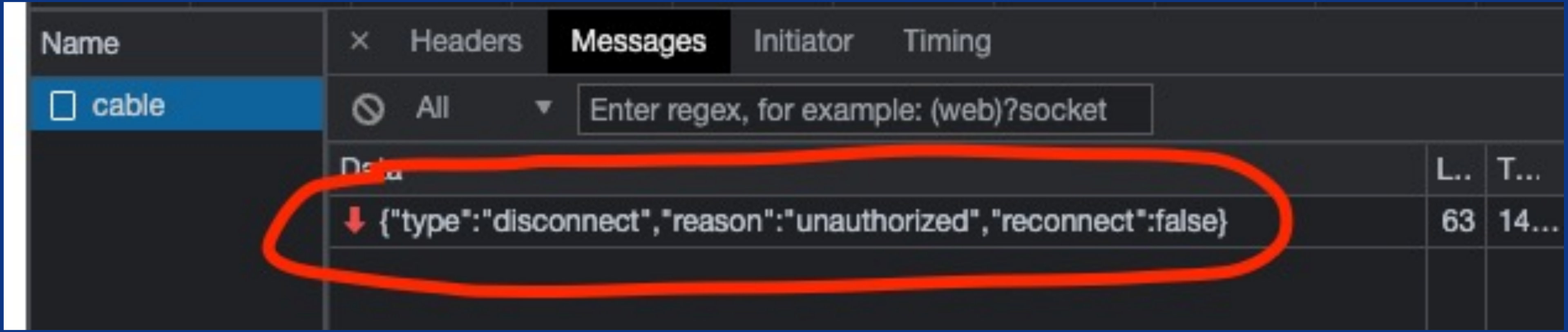
Let’s create an app – Constraint 2

Works


Name
cable
ws://localhost:3000/cable
Headers
Messages
Initiator
Timing
All
Enter regex, for example: (web)?soc

```
Data                                                              L..  T..
{"type":"welcome"}                                                1... 1...
{"command":"subscribe","identifier":"{\"channel\":\"Turbo::Str...  2... 1...
{"identifier":"{\"channel\":\"Turbo::StreamsChannel\",\"signed_...  2... 1...
{"type":"ping","message":1674653428}                              3... 1...
{"type":"ping","message":1674653431}                              3... 1...
{"type":"ping","message":1674653434}                              3... 1...
{"type":"ping","message":1674653437}                              3... 1...
```

Doesn’t work

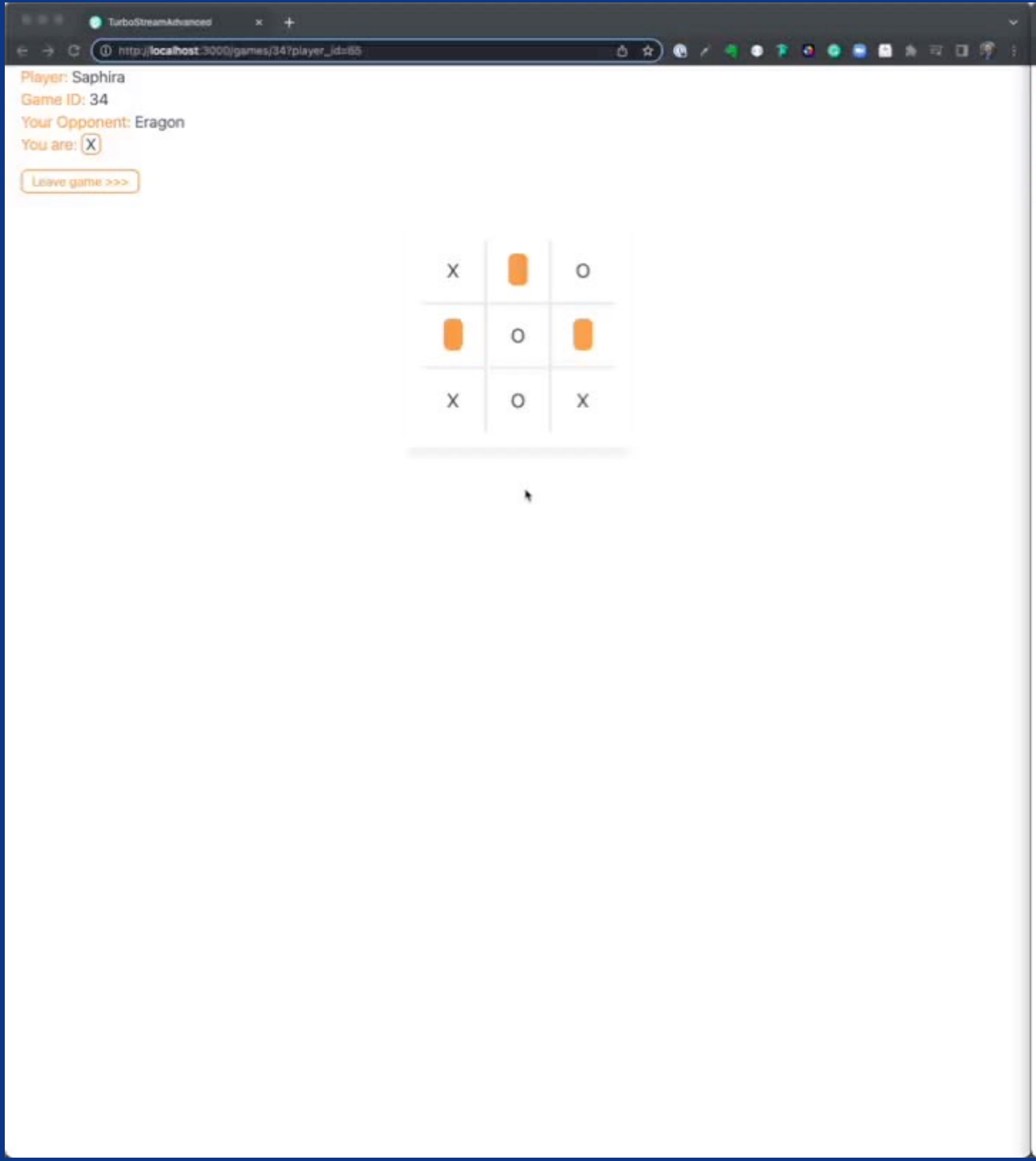


```
Data                                                                   L..  T...
{"type":"disconnect","reason":"unauthorized","reconnect":false}        63   14...
```

Constraint 3

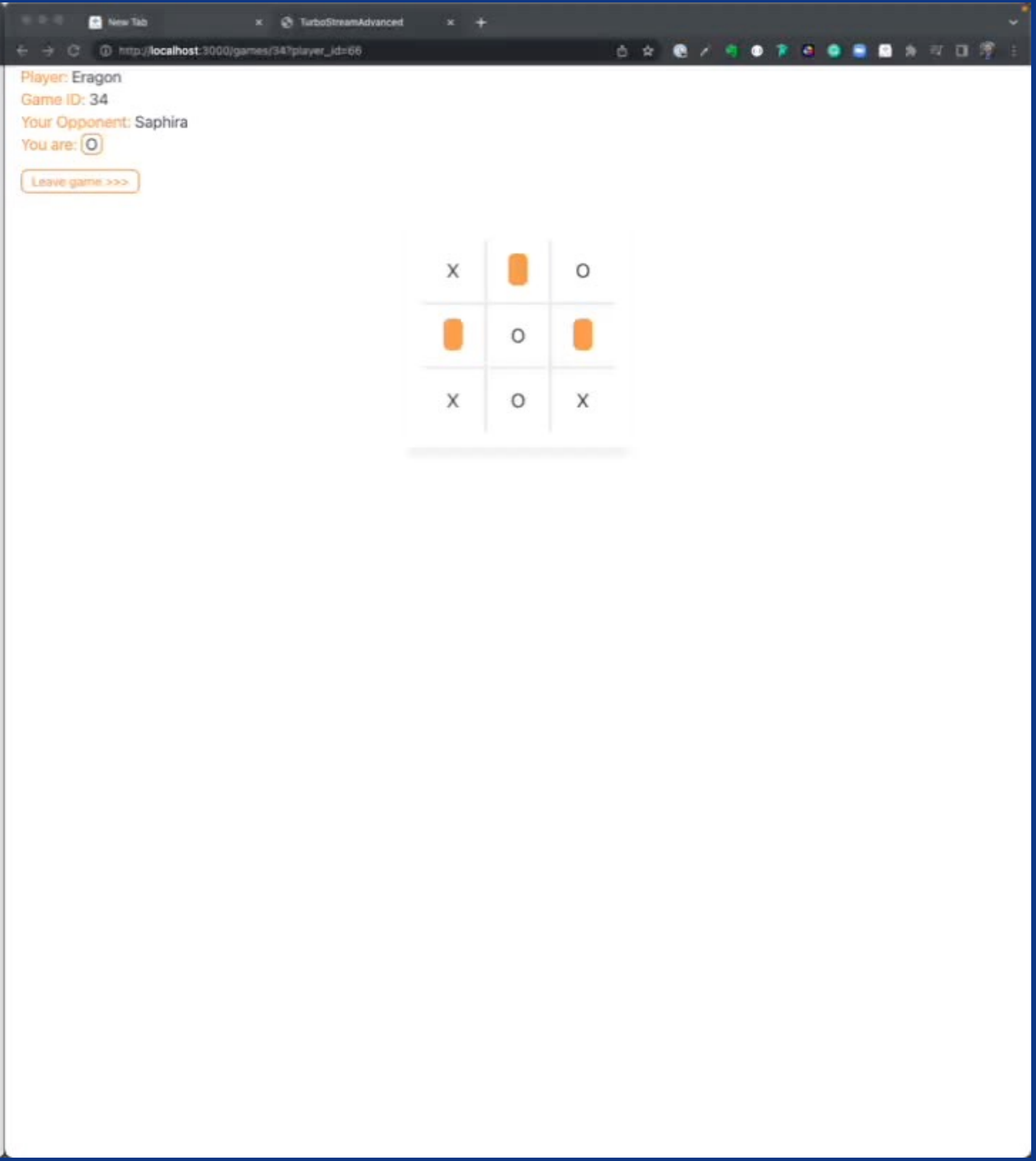
- Player 2 cannot be in the process without Player 1

Let’s create an app – Constraint 3



Player: Saphira
Game ID: 34
Your Opponent: Eragon
You are: X

X	▮	O
▮	O	▮
X	O	X



Player: Eragon
Game ID: 34
Your Opponent: Saphira
You are: O

X	▮	O
▮	O	▮
X	O	X

ActionCable::Channel

Let’s create an app! – Constraint 3

1. Adapt view

```
# games/show.html.erb

<%= turbo_stream_from @player, "board", channel: GameChannel %>
```

2. Use the correct player

```
module ApplicationCable
  class Connection < ActionCable::Connection::Base
    identified_by :current_player

    def connect
      self.current_player =
        Player.find_by(id: cookies['player_id’])

      reject_unauthorized_connection unless allow?(player)
    end
  end
end
```

3. Add channel logic

```
# channel/games_channel.rb

class GameChannel < ApplicationCable::Channel
  # include some turbo stuff

  # channel/games_channel.rb
  def subscribed
     # some subscribe logic
  end

  def unsubscribed
    current_player.broadcast_unsubsciption
  end
end
```

4. Broadcast it

```
# models/player.rb

def broadcast_unsubsciption
  broadcast_update_to [opponent, 'board’],
   target: 'board’,
   html: 'Your opponent left the game. Please start a new one.'
end
```

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Further use cases

Thank you!

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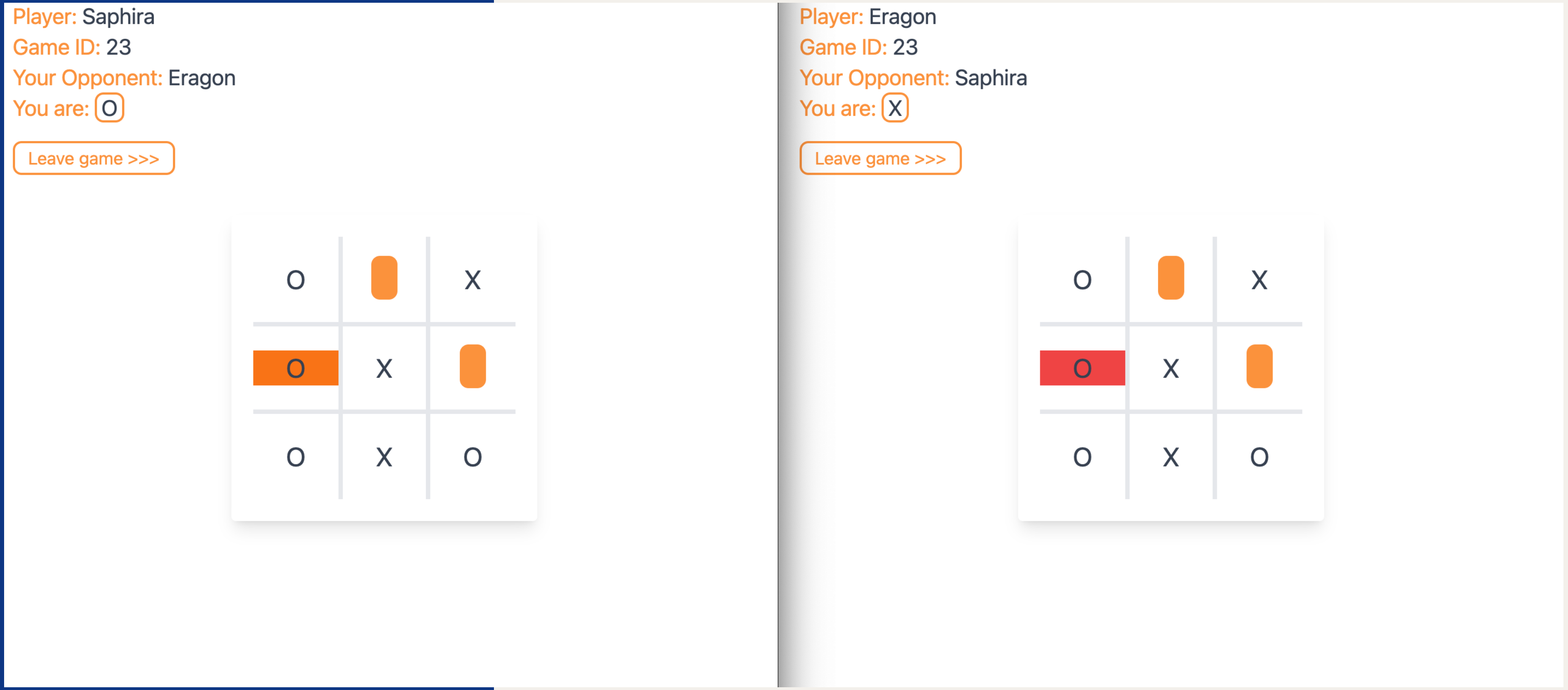
Player: Saphira
Game ID: 23
Your Opponent: Eragon
You are: O

Player: Eragon
Game ID: 23
Your Opponent: Saphira
You are: X

Thank you!

https://github.com/kevkev300/turbo-stream-advanced