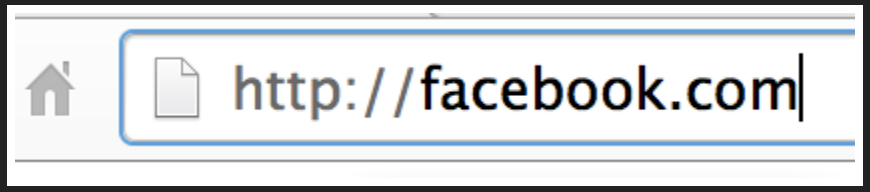
DAY 2: INPUT AND OUTPUT

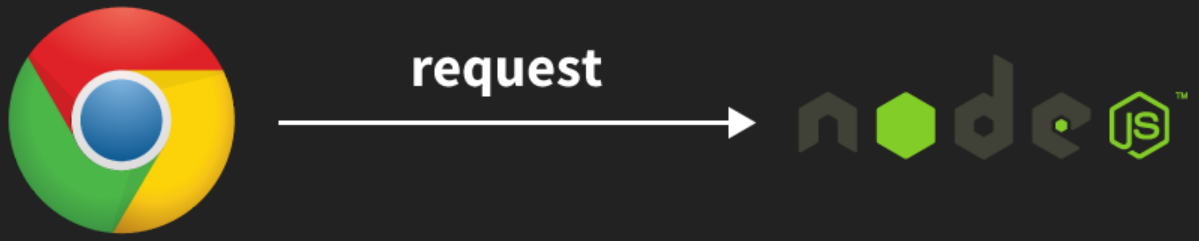
SOCKETS AND SERVERS

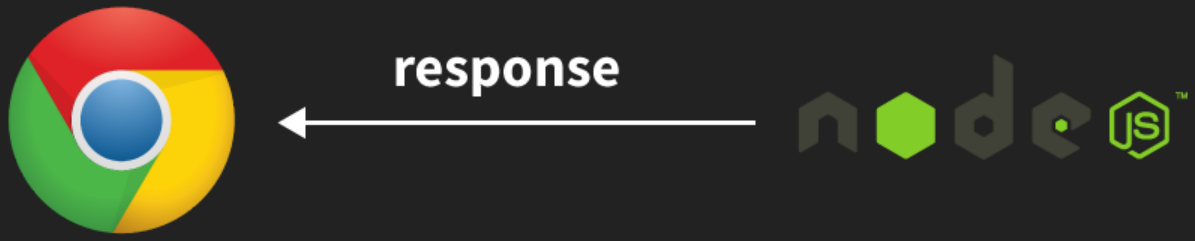
HTTP

- Built on top of TCP
- Used by browsers to serve web pages



REQUEST/RESPONSE




response

EXPRESS

Fast, unopinionated, minimalist web framework for Node.js

Express is very small, but makes writing Node servers a lot more pleasant.

EXAMPLE: A SIMPLE EXPRESS SERVER

`examples/day-2/01-express-hello-world`

MIDDLEWARE

Small isolated "chunks" of server functionality.

- Serving files
- Submitting form data
- URL handling
- Automatic compression

EXAMPLE: MIDDLEWARE

`examples/day-2/02-express-middleware`

```
var staticServe = require('static-server')

// Serves the current script's directory as a static server
app.use(staticServe(__dirname))
```

EXAMPLE: USING STATIC-SERVE

`examples/day-2/03-express-static-server`

SOCKET.IO

Realtime messaging between browsers

EXAMPLE: SETTING UP SOCKET.IO

`examples/day-2/04-socketio-setup`

EXAMPLE: BROWSER TO SERVER

`examples/day-2/05-socketio-send`

EXAMPLE: BROADCASTING BROWSER TO BROWSER

`examples/day-2/05-socketio-recieve`

ASSIGNMENT #3

GIPHY CHAT

Using the examples provided, create a web-based chat server/client using Express and socket.io.

However, instead of sending text between clients, use the giphy translate API we experimented with on Tuesday to turn everybody's messages into GIFs.

INTERFACING WITH HARDWARE

NODEBOTS

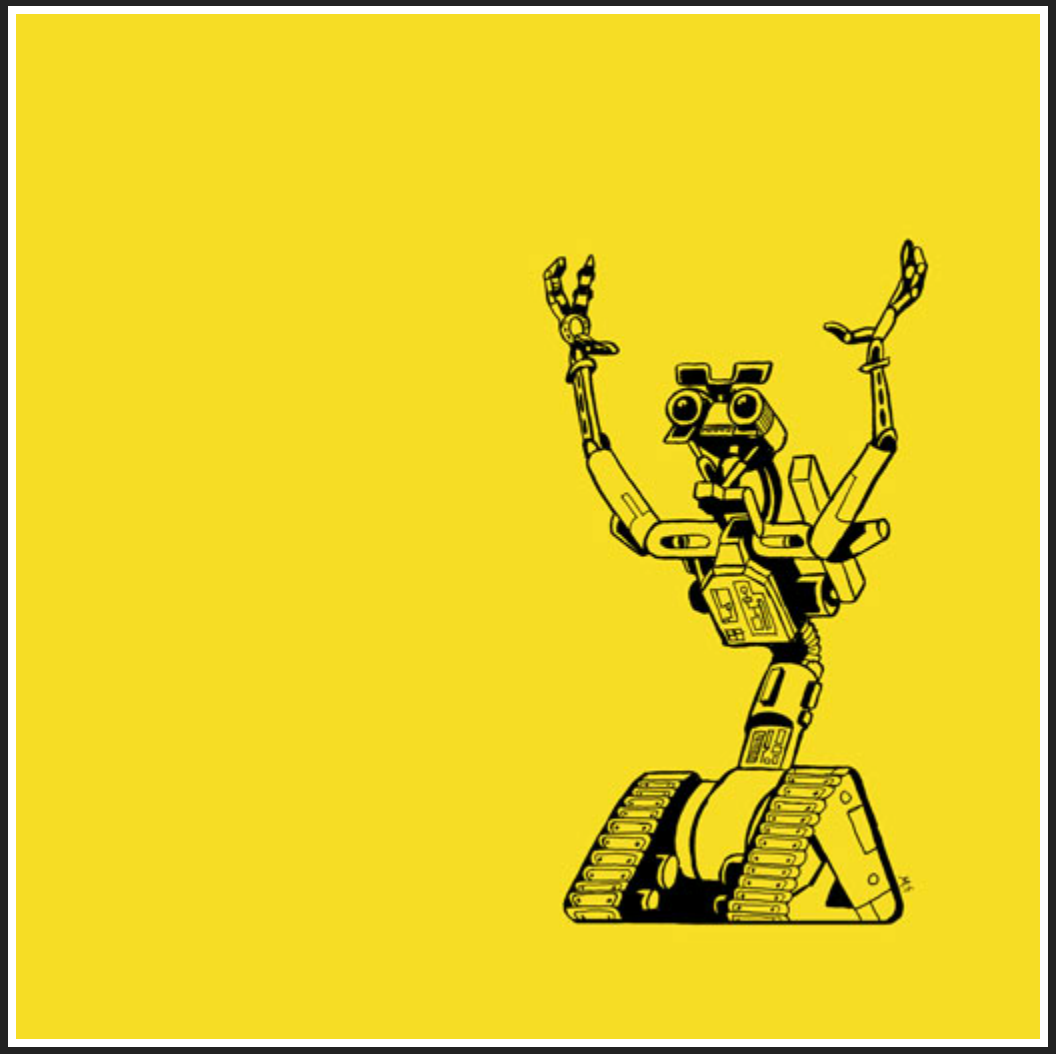
FIRMATA

- A general purpose protocol for hardware to talk with other devices.
- Allows the Arduino to speak to Node in a way that they both understand.

INSTALLING FIRMATA

- Install Arduino app
- Connect Arduino
- Tools > Serial Port
- Tools > Board > Arduino Uno
- File > Examples > Firmata > StandardFirmata
- Build and Upload

JOHNNY FIVE



HELPER LIBRARY FOR NODE & ARDUINO

- LED Lights
- LCD Screens
- Servos
- Buttons
- Accelerometers
- etc.

EXAMPLE: BLINKING A LIGHT

`examples/day-2/08-arduino-blinker`

EXAMPLE: RESPONDING TO BUTTON PRESSES

`examples/day-2/09-arduino-button`

ASSIGNMENT #4

ARDUINO CHAT

Building on top of our chat server:

- Make an LED start strobing whenever a message is sent.
- Send a message to clients on pressing a butotn.
- Move a servo in response to incoming messsages.