

# Web Sockets

# What are Web Sockets?

WebSockets is a protocol that enables developers to open a persistent connection and send data in realtime between a client and a server.

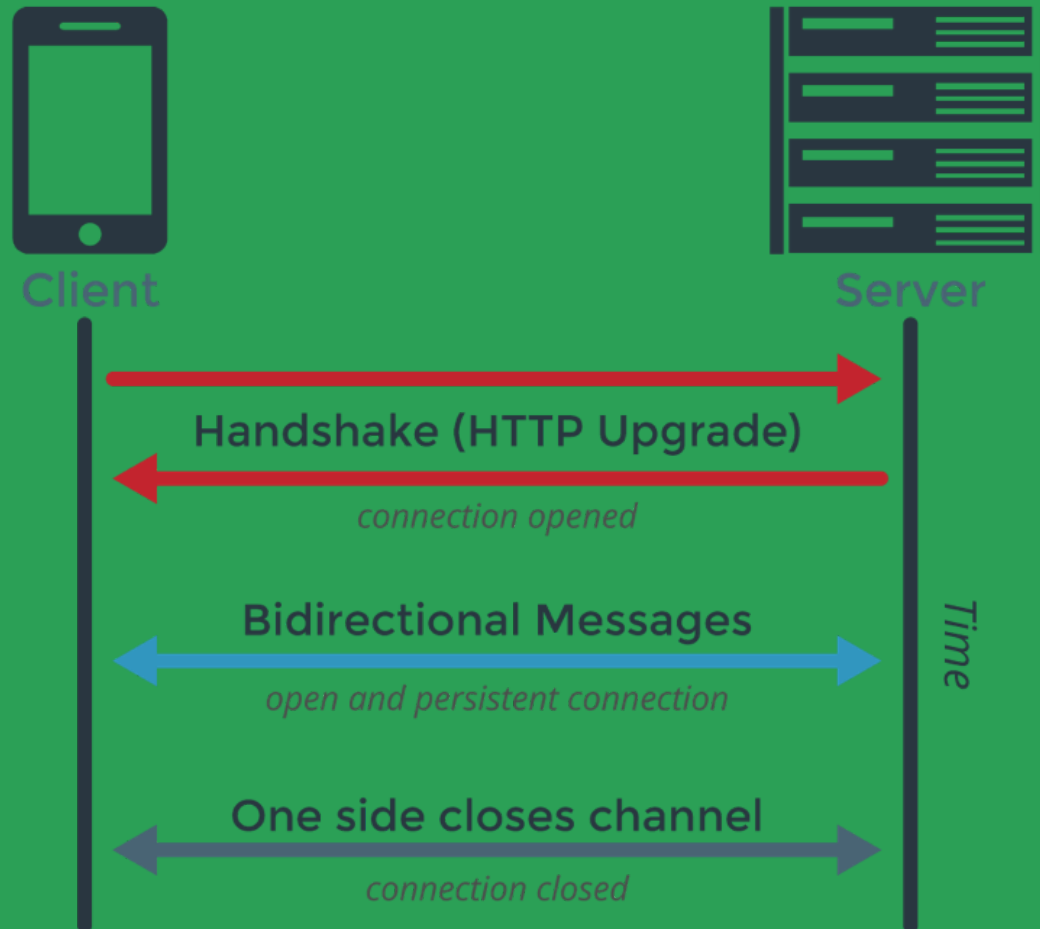
WebSockets provide new protocol between client and server which runs over a persistent TCP connection. Through this open connection, bi-directional, full-duplex messages can be sent between the single TCP socket connection (simultaneously or back and forth).



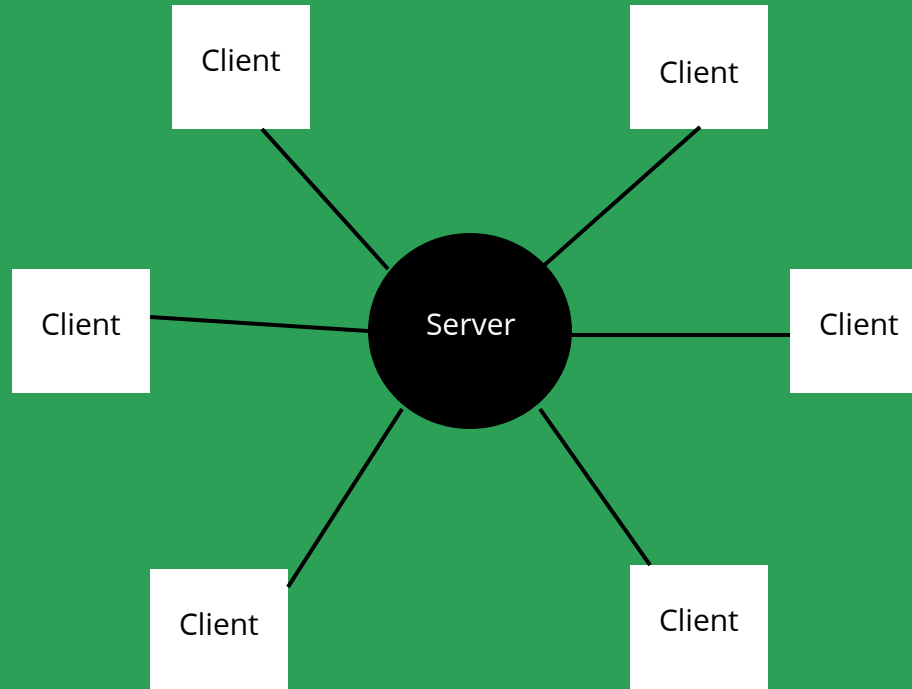
# Uses of Web Sockets

- Chat
- Multi User Browser Games
- Collaborative Code Editing
- Live text for Sports, News and Stock Quotes
- Online drawing canvas
- Realtime to-do apps with multiple users

# Web Sockets Visual Presentation



# Web Sockets Visual Presentation



# socket.io

A cross-browser WebSocket JavaScript library

```
npm install socket.io --save
```

## Server

```
var io = require('socket.io').listen(80);  
io.sockets.on('connection', function (socket) {  
  socket.emit('news', { hello: 'world' });  
});
```

# socket.io

## Client

```
<script src="/socket.io/socket.io.js"></script>
<script>
var socket = io.connect('http://localhost');
socket.on('news', function(data) {
  console.log(data.hello); //prints 'world'
});
</script>
```

# Benefits of socket.io

- Lightweight, easy to use framework
  - Much less overhead than a standard HTTP request
- Extends basic WebSockets functionality
  - Broadcasting to one or many (or even all) connected sockets
  - Storing data within each client
  - Added heartbeat functionality
- There exists various implementations in multiple languages that support the socket.io server side API