

# Flask Socket.io

Flask Socket.io is a library that enables real-time, bidirectional and event-based communication between the browser and the server. Flask Socket.io is an integration of Socket.io for the Flask framework.

## What does this technology (library/framework/service) accomplish for you?

We use many functions that Flask-SocketIO provides to give us the functionality of websockets which makes it possible for the server and browser to have interactive communication with one another. This library is essentially a wrapper for python-socketio that integrates with Flask.

## How does this technology accomplish what it does?

### Websockets:

This library is a wrapper for the python-socketio library that is tailored specifically for Flask. This is done by creating a SocketIO (defined [here](#)) class and performing the necessary functions on it. Flask creates the instance of python-socketio [here](#). From there, python-socketio performs the three-way tcp handshake in [client.py](#) (L:237). From there, the connection is open to transmit data.

Flask-SocketIO works very similar to Flask's routing in that it uses decorators to register functions to events, formatted as strings. The `@socketio.on()` decorator is the only decoration functionality we used for this project to register functions to messages passed through the connection. Again, Flask-SocketIO is a wrapper for python-socketio. The functionality for the on decoration is defined [here](#) (server.py) in python-socketio. The on decoration listens on the socket for a certain message. If the message passed into `on()` matches the message sent on the connection, the function registered to that namespace will be run.

The other functionality we use is the `emit()` call of Flask-SocketIO. This function sends messages across the tcp connection from the client to the server and vice versa. This message is what is listened to by the `on()` decorations in order to run the functions registered to the given namespaces. Again, `emit` is a wrapper for the python-socketio function the the same name, which can be found [here](#) (client.py) and [here](#) (server.py)

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