MLH localhost +

Workshop

TWILIO QUEST

TM

PRESS ENTER TO START

v.0.0.1

1

Using your Web Browser,
Open this URL:

http://mlhlocal.host/lhd-resources

2

Click on the workshop you're attending, and find:

- Setup Instructions
- The Code Samples
- A demo project
- A Workshop FAQ
- These Workshop Slides
- More Learning Resources

MLH

MAJOR LEAGUE HACKING

Our Mission is to Empower Hackers.

65,000+
HACKERS

12,000+
PROJECTS CREATED

3,000+
SCHOOLS

We hope you learn something awesome today!

Find more resources: http://mlh.io/

What will you learn today?

1. The basics of configuring a Twilio phone number

2. How to set up automatic SMS and call responses with TwiML

3. Getting started with TwilioQuest to learn even more!

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Who has heard of Twilio?

What does Twilio do?

It's a **cloud communication** Platform as a Service (PaaS). Twilio can automate sending and receiving:

- SMS (texts)
- Phone calls
- Video
- ... And more!

Key Term

Platform as a Service (PaaS): A platform for developers to build internet applications without having to build and maintain the underlying infrastructure (e.g. servers) themselves.

Let's See it in Action!

Send this number an SMS message - it doesn't matter what the message text is.

+1 (626) 727 8314

How's THAT for a RickRoll?

Let’s see what’s happening behind the scenes.

What happened when you called?

1 You sent an SMS to a Twilio phone number.

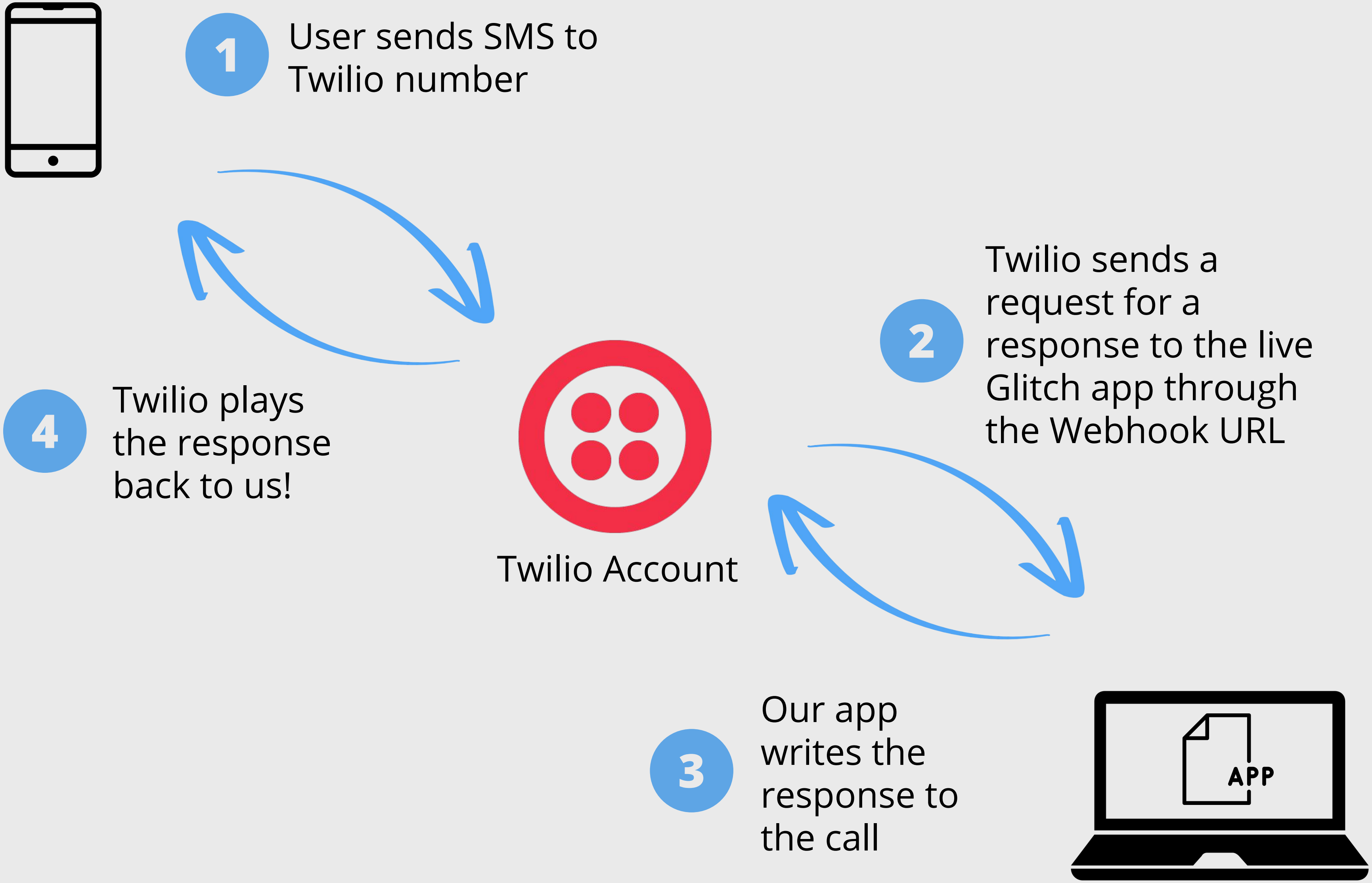
2 Twilio received the call and called a **Webhook** to reply to it.

3 The Webhook request triggered a function call from our live Glitch app.

4 The function wrote a response (the music file) and sent it back to the Twilio server, who played it to you!

Key Term

Webhook: A URL that is triggered when the Twilio number receives an SMS or call. It links to our application to write a response.



1 User sends SMS to Twilio number

2 Twilio sends a request for a response to the live Glitch app through the Webhook URL

3 Our app writes the response to the call

4 Twilio plays the response back to us!

Twilio Account

A Quick Tour

What tools are involved in making this?

Twilio

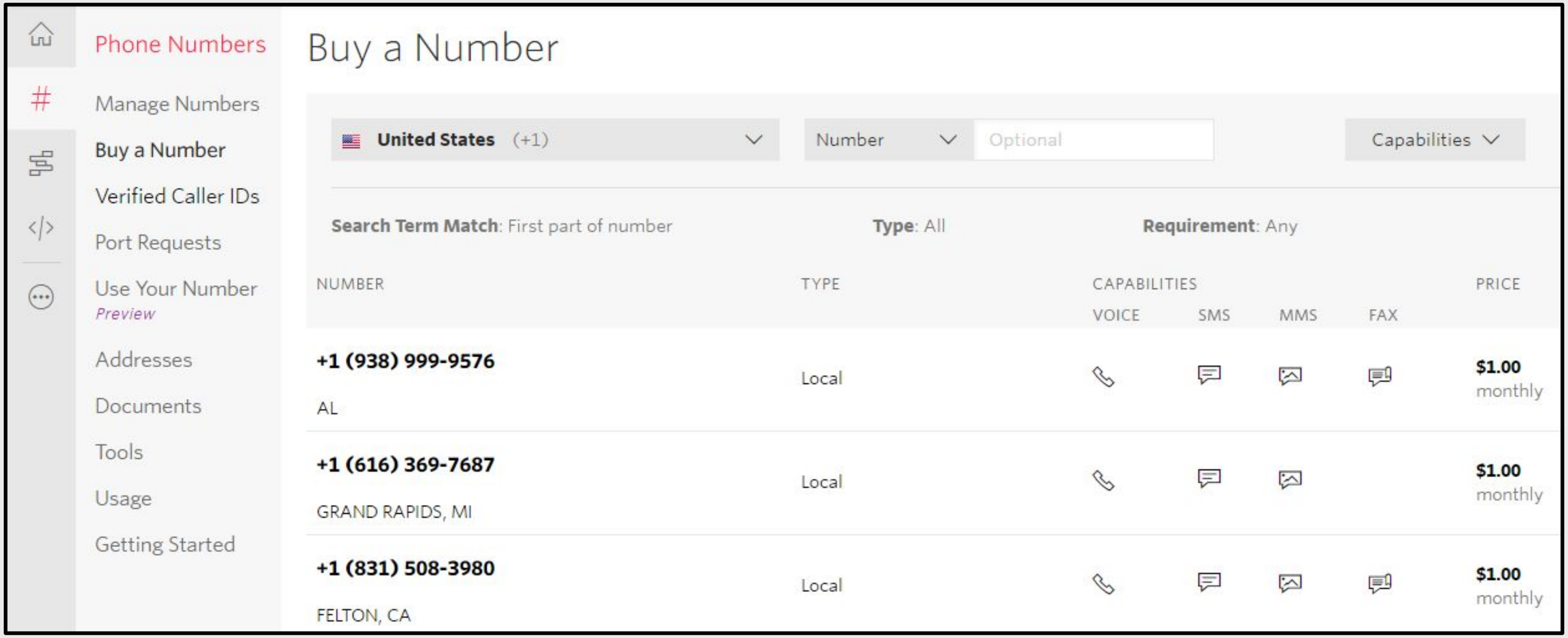
Twilio allows us to create SMS and Voice apps. You send a text and it starts running an app behind the scenes.

Glitch

Glitch lets you code right in the browser and deploy it instantly!

Setting up Twilio

We created a Twilio Account and registered a Twilio Number.



Phone Numbers

- Manage Numbers
- Buy a Number
- Verified Caller IDs
- Port Requests
- Use Your Number *Preview*
- Addresses
- Documents
- Tools
- Usage
- Getting Started

Buy a Number

United States (+1) | Number | Optional | Capabilities

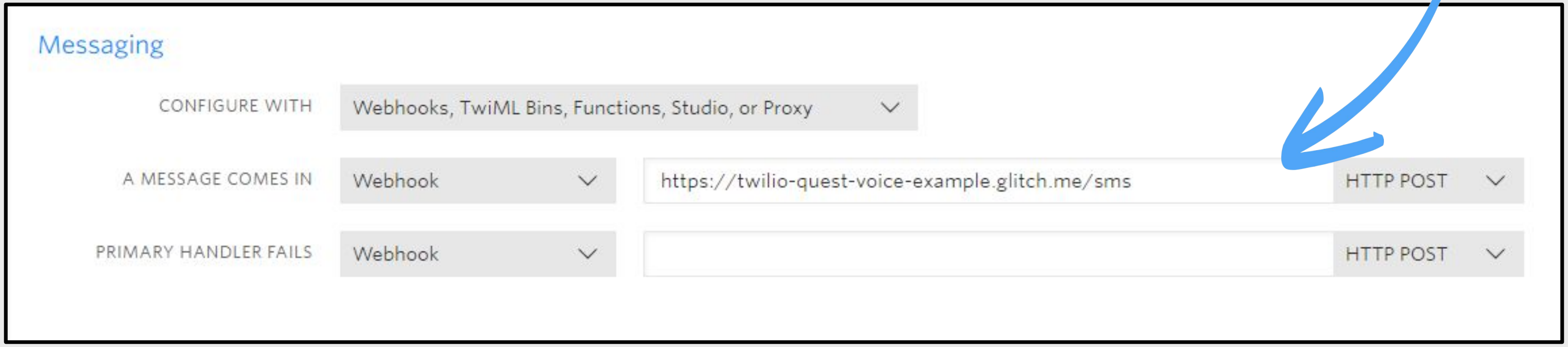
Search Term Match: First part of number **Type**: All **Requirement**: Any

NUMBER	TYPE	CAPABILITIES				PRICE
		VOICE	SMS	MMS	FAX	
+1 (938) 999-9576 AL	Local	✓	✓	✓	✓	**$1.00** monthly
+1 (616) 369-7687 GRAND RAPIDS, MI	Local	✓	✓	✓		**$1.00** monthly
+1 (831) 508-3980 FELTON, CA	Local	✓	✓	✓	✓	**$1.00** monthly

Setting up Twilio

We configured our new number.

When it receives a call, it triggers a Webhook to our live Glitch App.



Messaging

CONFIGURE WITH: Webhooks, TwiML Bins, Functions, Studio, or Proxy

A MESSAGE COMES IN: Webhook — https://twilio-quest-voice-example.glitch.me/sms — HTTP POST

PRIMARY HANDLER FAILS: Webhook — HTTP POST

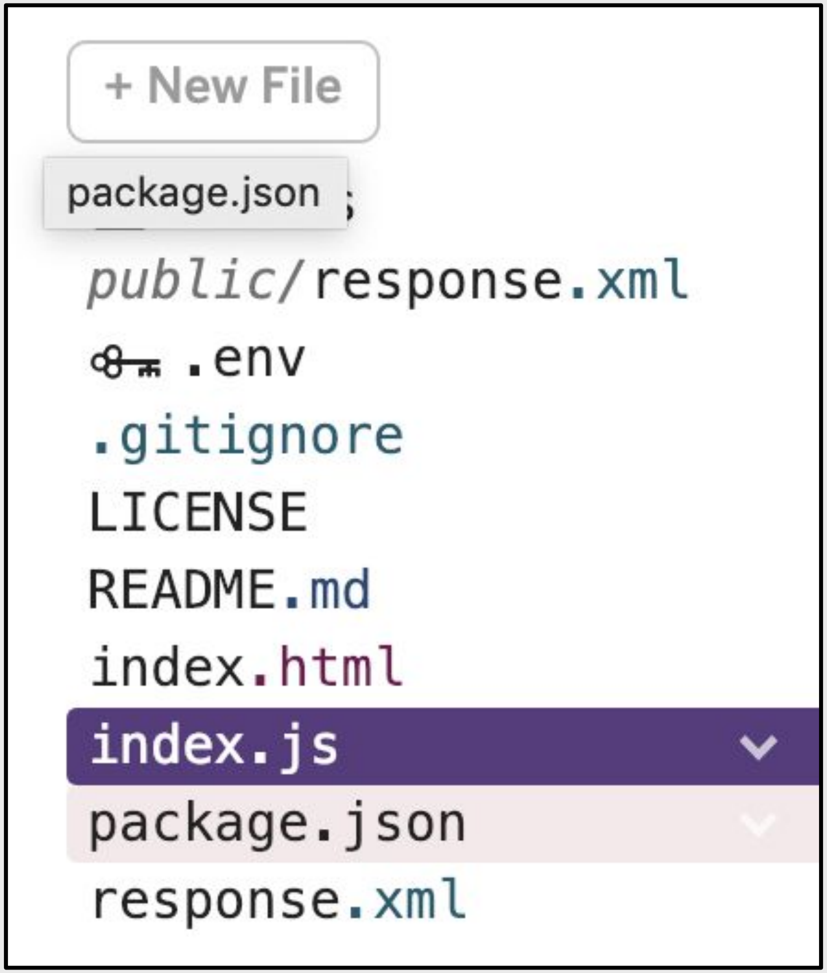
Our Glitch Application

Let’s take a look at our Glitch App and see how it works!

Head to this URL:

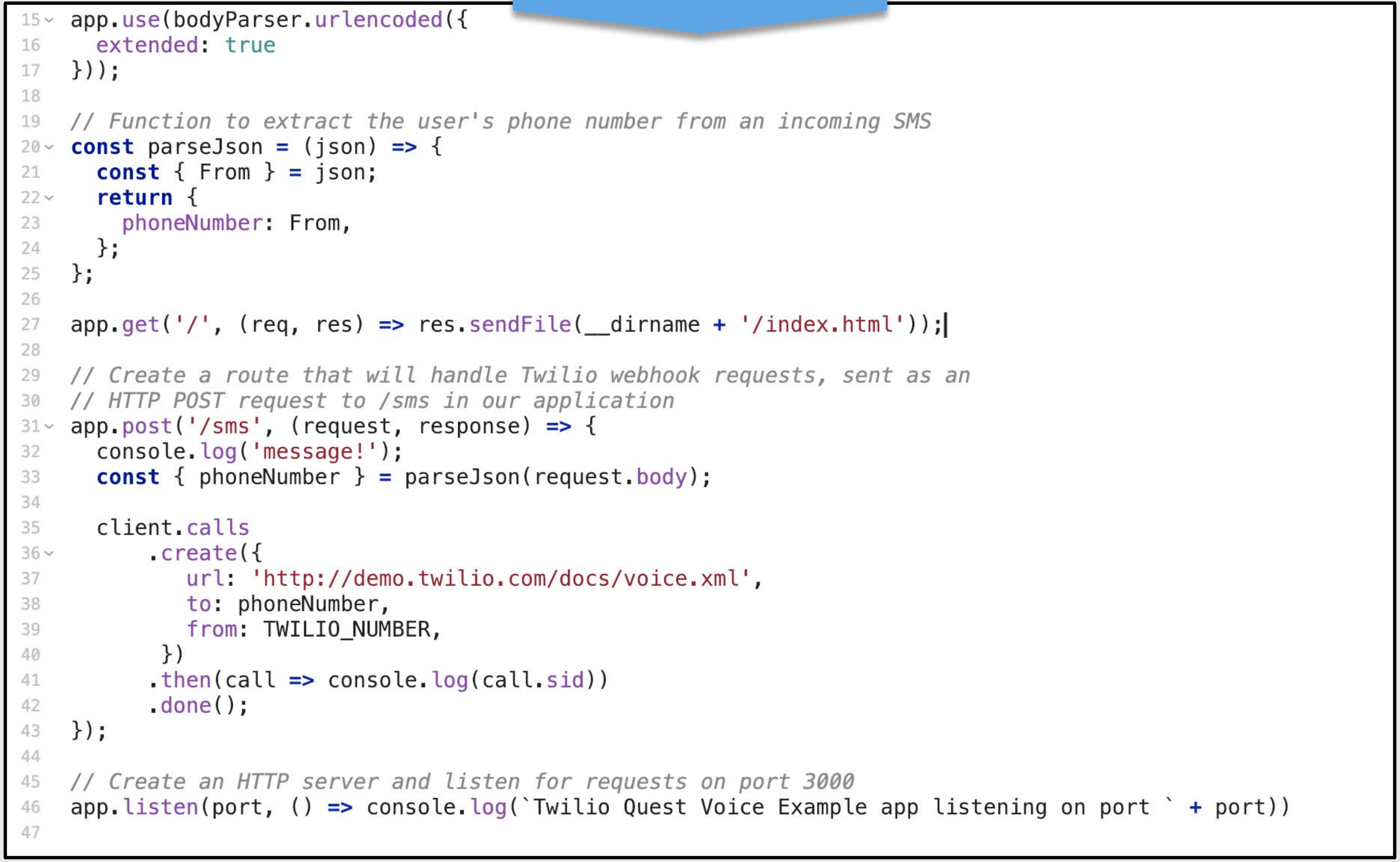
mlhlocal.host/twilioquest-code

Our Glitch Application



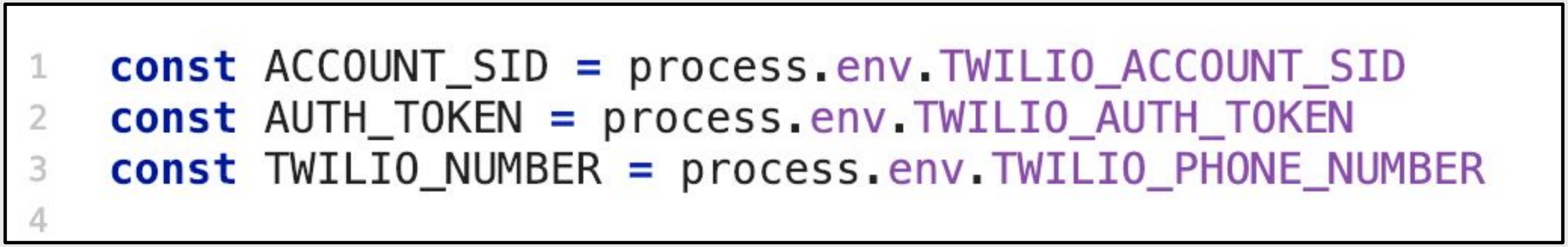
Click on **index.js** in the left panel.

index.js



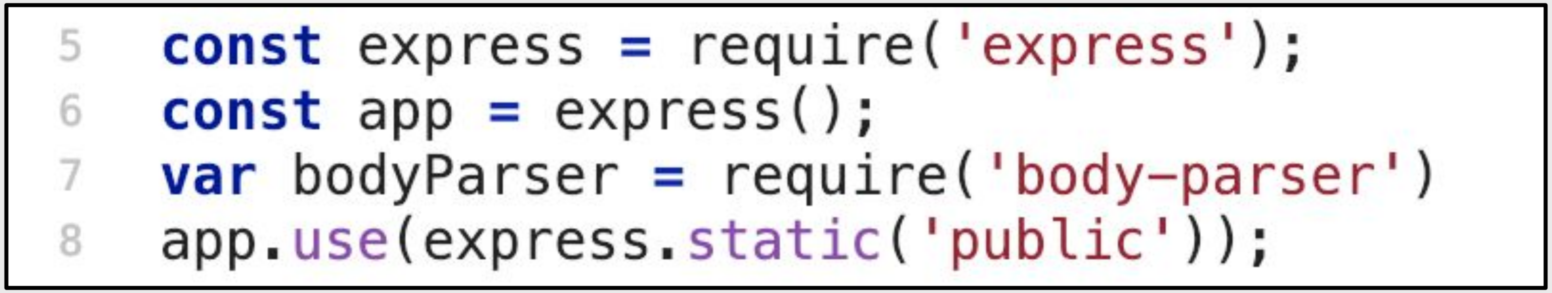
```
app.use(bodyParser.urlencoded({
  extended: true
}));

// Function to extract the user's phone number from an incoming SMS
const parseJson = (json) => {
  const { From } = json;
  return {
    phoneNumber: From,
  };
};

app.get('/', (req, res) => res.sendFile(__dirname + '/index.html'));

// Create a route that will handle Twilio webhook requests, sent as an
// HTTP POST request to /sms in our application
app.post('/sms', (request, response) => {
  console.log('message!');
  const { phoneNumber } = parseJson(request.body);

  client.calls
      .create({
         url: 'http://demo.twilio.com/docs/voice.xml',
         to: phoneNumber,
         from: TWILIO_NUMBER,
       })
      .then(call => console.log(call.sid))
      .done();
});

// Create an HTTP server and listen for requests on port 3000
app.listen(port, () => console.log(`Twilio Quest Voice Example app listening on port ` + port))

```

How does it work?



```
1   const ACCOUNT_SID = process.env.TWILIO_ACCOUNT_SID
2   const AUTH_TOKEN = process.env.TWILIO_AUTH_TOKEN
3   const TWILIO_NUMBER = process.env.TWILIO_PHONE_NUMBER
4
```

Lines 1-3 allow your app to use your environment variables (listed in **`.env`**).



```
5   const express = require('express');
6   const app = express();
7   var bodyParser = require('body-parser')
8   app.use(express.static('public'));
```

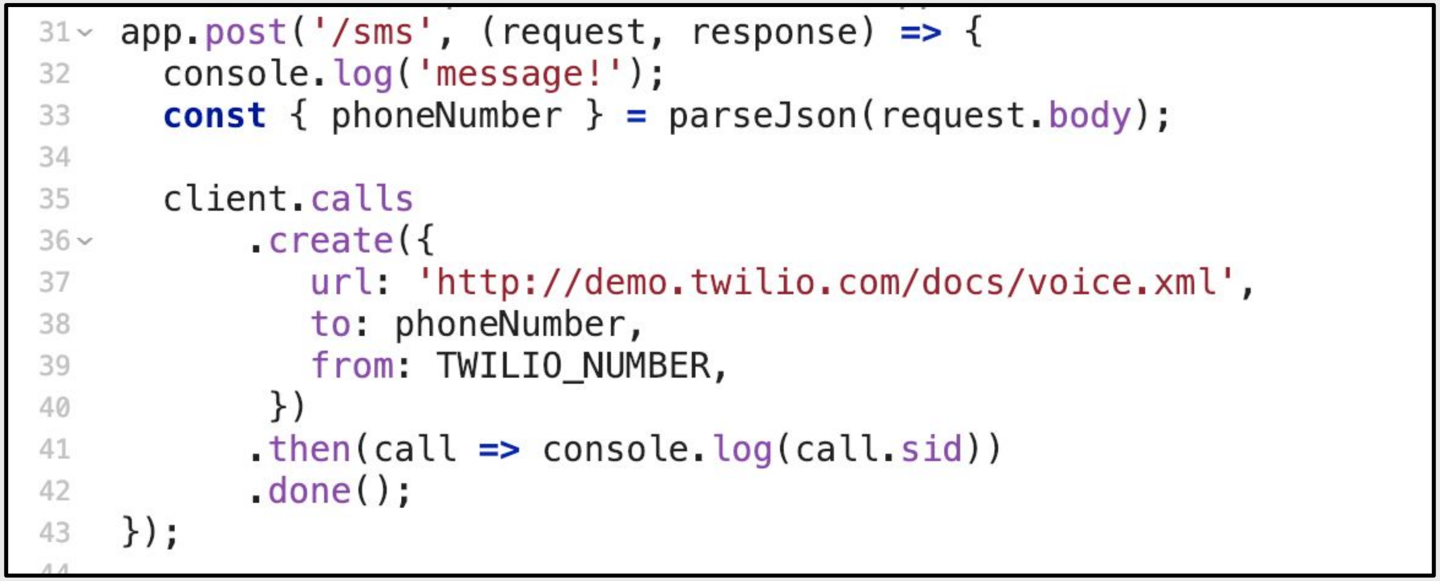
Lines 5 and 7 import the necessary JavaScript packages.

Express is a web framework for Node.js

Line 6 launches the app server with a call to *express()*.

Line 8 tells the app where to find static files.

How does it work?

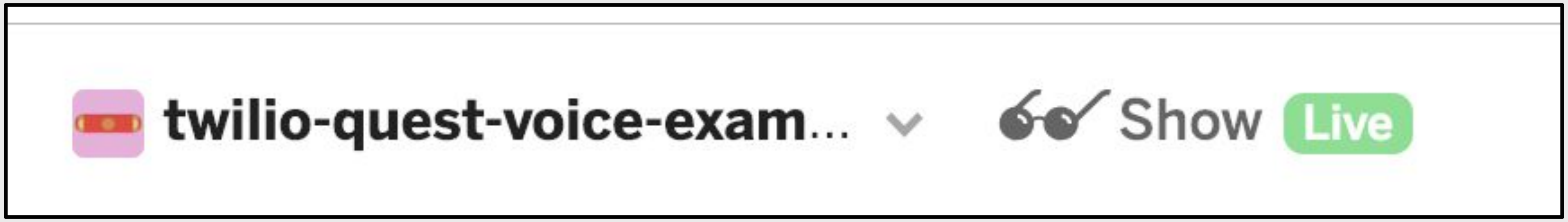


```
31 app.post('/sms', (request, response) => {
32   console.log('message!');
33   const { phoneNumber } = parseJson(request.body);
34
35   client.calls
36       .create({
37          url: 'http://demo.twilio.com/docs/voice.xml',
38          to: phoneNumber,
39          from: TWILIO_NUMBER,
40       })
41       .then(call => console.log(call.sid))
42       .done();
43 });
```

Line 31 starts to create a response when our app receives a text message (/sms is requested from our Webhook).

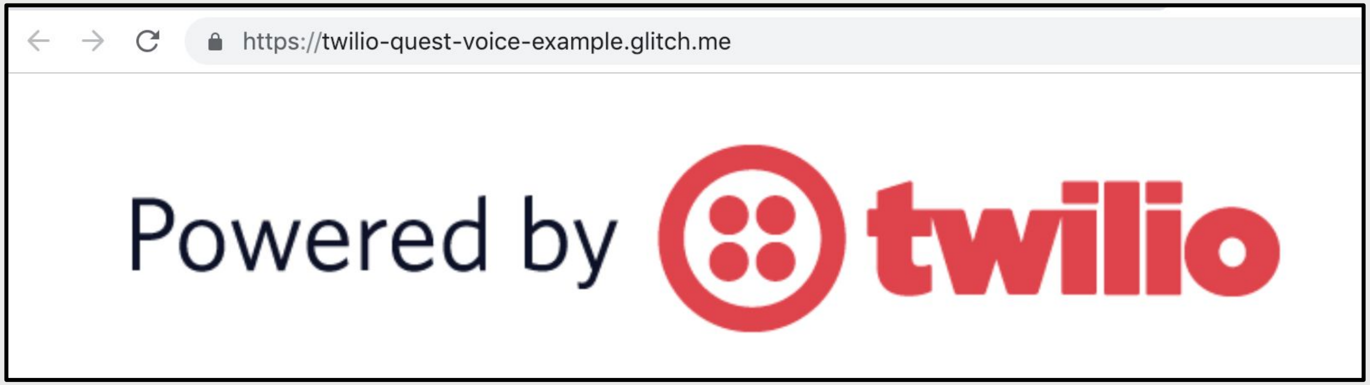
Lines 35-42 creates a voice response which contains a music file and sends it the person who texted our Twilio number.

Launching the Glitch App



At the top of the Glitch window, click **Show.**

Check out the URL of the page that opens - it's our **Webhook URL!**


https://twilio-quest-voice-example.glitch.me

Over to you...

We’re going to show you how to get started with TwilioQuest!

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Registering for TwilioQuest

TwilioQuest is an interactive, self-paced game that teaches you how to use Twilio.

We're going to help you register and start using TwilioQuest, then leave you to start fulfilling Missions!

TwilioQuest

Head to this URL and let’s begin!

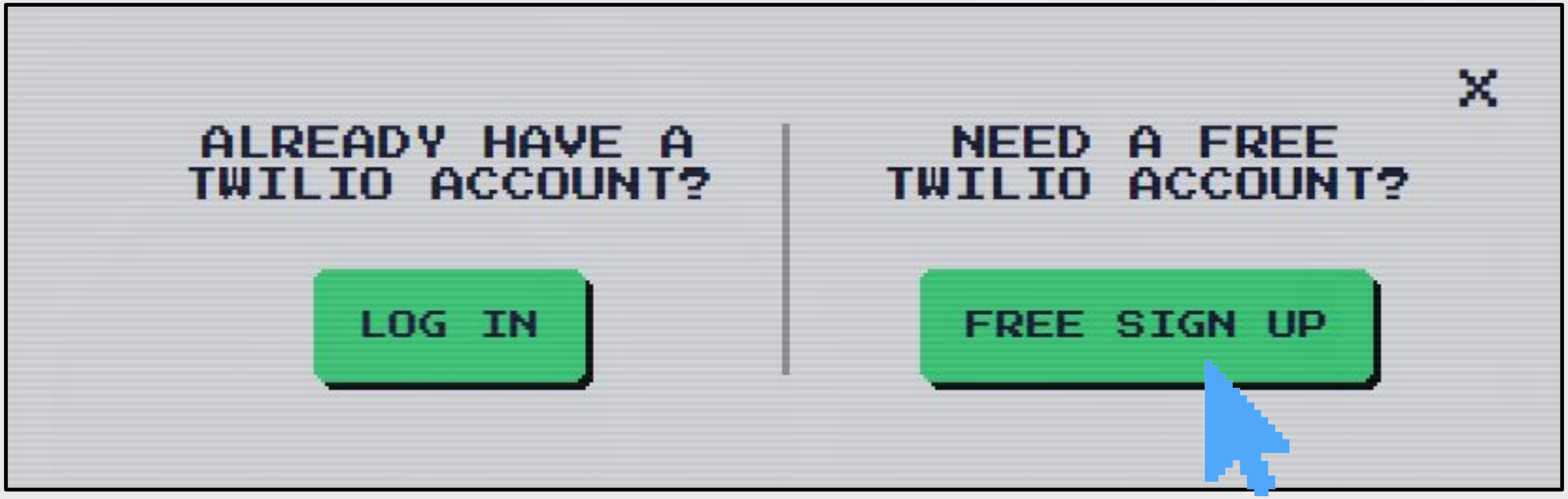
http://twilio.com/quest

Press **Enter** on your keyboard.

PRESS ENTER TO START

TwilioQuest: Log In

Click **Sign Up** and sign up for Twilio!

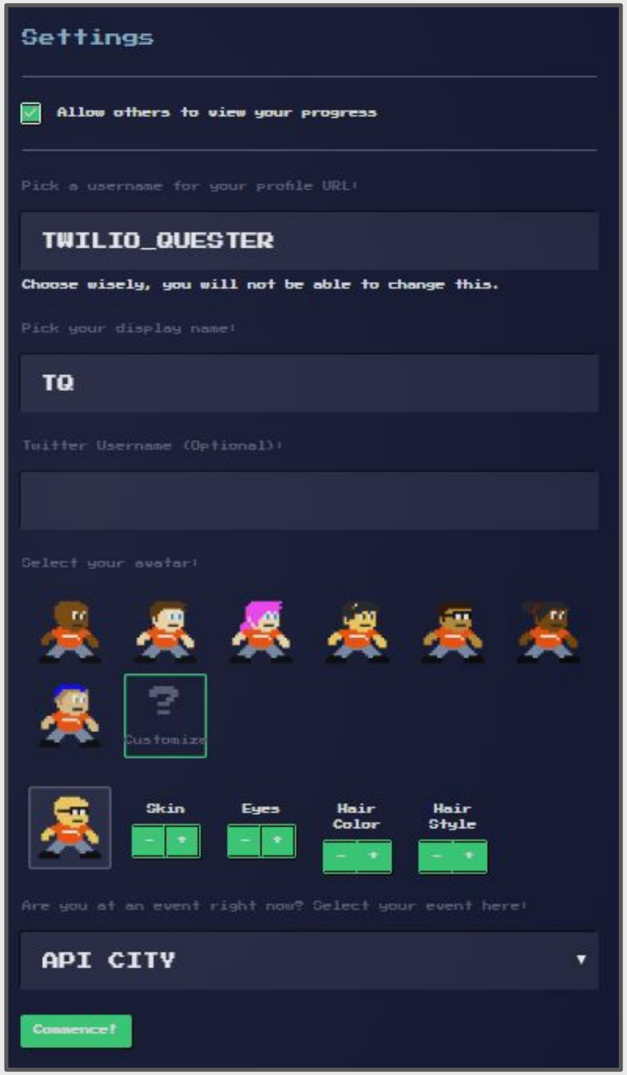


ALREADY HAVE A TWILIO ACCOUNT?

NEED A FREE TWILIO ACCOUNT?

After signing up, you'll be redirected back to TwilioQuest.

TwilioQuest: Log In



Settings

☑ Allow others to view your progress

Pick a username for your profile URL!

TWILIO_QUESTER

Choose wisely, you will not be able to change this.

Pick your display name!

TQ

Twitter Username (Optional)!

Select your avatar!

Are you at an event right now? Select your event here!

API CITY ▾

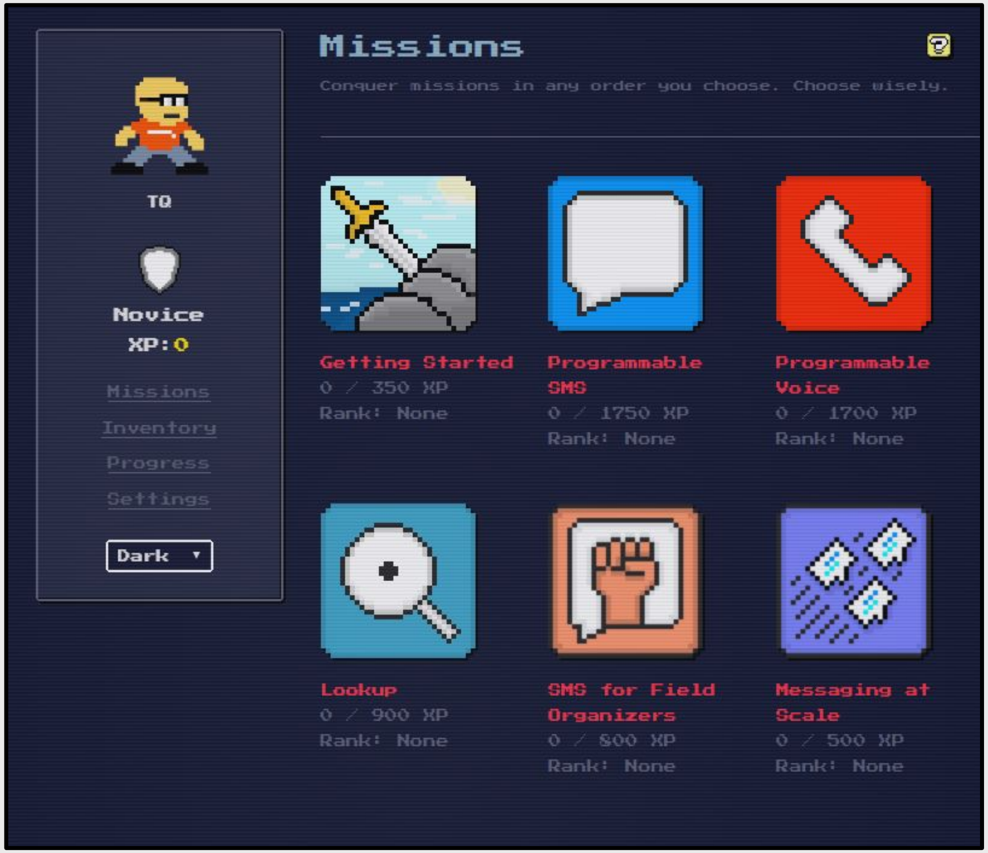
- Tick ‘**Allow others to view your progress’**
- Type a username and a display name
- Pick or customize an avatar
- Select **MLH Localhost 2019** as your event
- Click **Commence!**

TwilioQuest: Your Dashboard

From your dashboard, you can choose missions and learn new Twilio Skills on the way.

The **Getting Started** and **Programmable SMS** missions will take you through what we've demoed already.

Let's start gaining XP!



TQ

Novice
XP: 0

Missions

Conquer missions in any order you choose. Choose wisely.

Getting Started
0 / 350 XP
Rank: None

Programmable SMS
0 / 1750 XP
Rank: None

Programmable Voice
0 / 1700 XP
Rank: None

Lookup
0 / 900 XP
Rank: None

SMS for Field Organizers
0 / 800 XP
Rank: None

Messaging at Scale
0 / 500 XP
Rank: None

Your turn! You have _____ minutes to journey through your Quest!

Let's Check out the Leaderboard

https://www.twilio.com/quest/leaderboard/mlh-localhost-2019

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That was awesome! Let's celebrate!

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twilio

Let's recap quickly...

1 Twilio is a PaaS platform which allows you add communication functionality to your projects.

2 You can set up automatic responses to SMS and calls by writing **TwiML** code.

3 You can learn more about Twilio by playing **TwilioQuest!**

What did you learn today?

We created a fun quiz to test your knowledge and see what you learned from this workshop.

http://mlhlocal.host/quiz

twilio

Where to go from here...

1. Think about what kind of applications you could build to make use of your new Twilio knowledge

2. Host the MLH Memes: Build Your Own Twilio App module: mlhlocal.host/apply

3. **Complete the additional practice problems.** *These problems & way more are in your email!*

Learning shouldn't stop when the workshop ends...

Check your email for access to:

- These workshop slides
- Practice problems to keep learning
- Deeper dives into key topics
- Instructions to join the community
- More opportunities from MLH!

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