Hop on the server less adventure

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WHAT IS

SERVERLESS?

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"Serverless architectures refer to applications that significantly depend on third-party services (known as Backend as a Service or "BaaS") or on custom code that's run in ephemeral containers (Function as a Service or "FaaS")"

-Martin Fowler

Codepen by awesome @sarah_edo
https://t.co/PvqK1M2Pwz

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- Reacts to events
- Autoscales
- ‘Pay as you go’

Serverless Cost Calculator (beta)

Calculating cost for AWS Lambda, Azure Functions, Google Cloud Functions, and IBM OpenWhisk

10000 — Number of Executions

300000 — Estimated Execution Time (ms)

1024MB — Memory Size

Include Free-Tier: (•) True ( ) False

HTTP Requests: (•) True ( ) False

Vendor	Request Cost	Compute Cost	Total
AWS Lambda	$0.00	$43.34	$43.34
Azure Functions	$0.00	$41.60	$41.60
Google Cloud Functions	$0.00	$46.50	$46.50
IBM OpenWhisk	$0.00	$44.20	$44.20

http://serverlesscalc.com/

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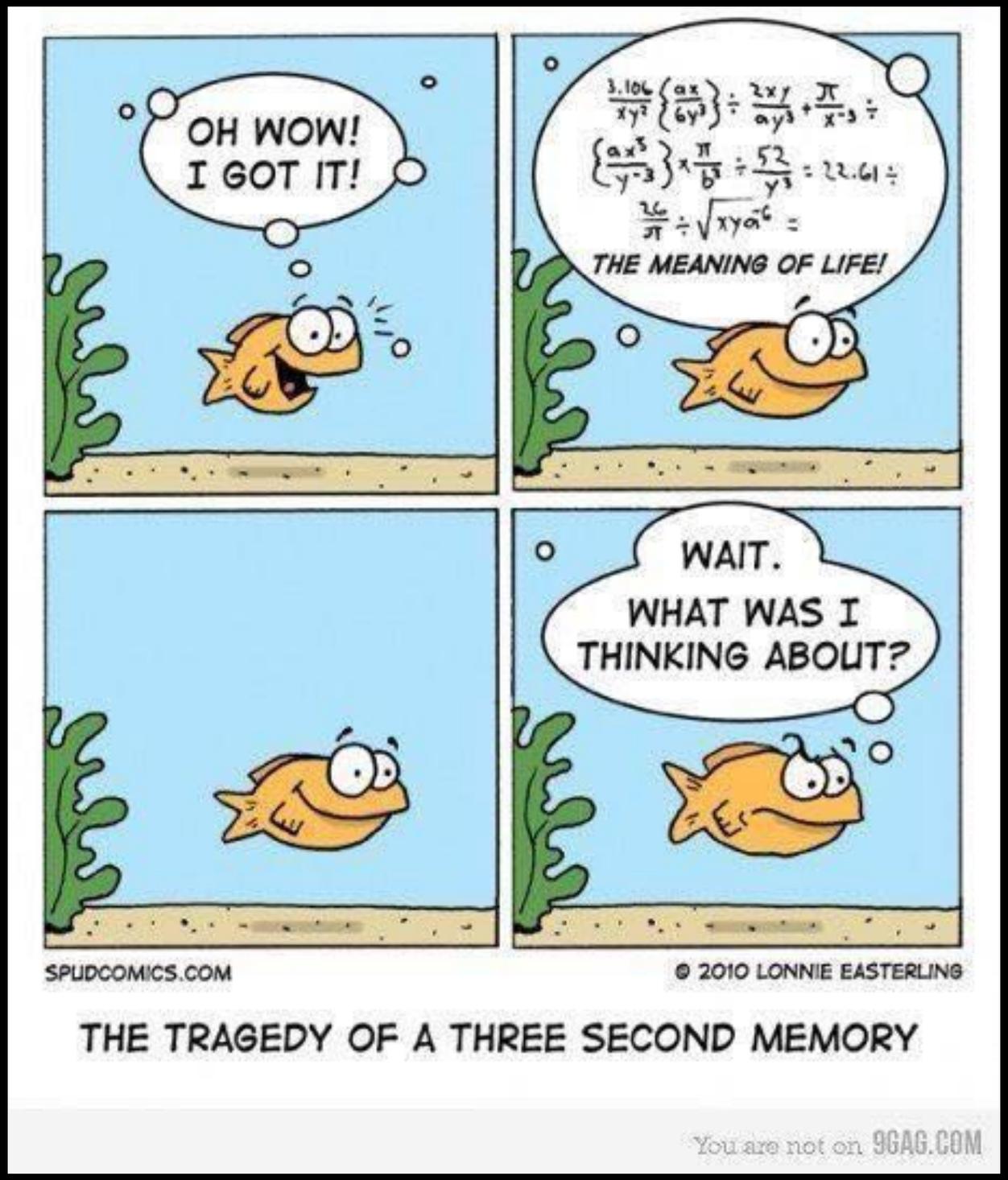
Photo by Charlotte Coneybeer on Unsplash

Execution time limit

Photo by Uroš Jovičić on Unsplash

Functions are stateless



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Cold start

"Serverless computing has made its way into the enterprise because it simplifies deployment and allows developers to focus more on application features than on tasks such as provisioning VMs. Emerging uses for serverless technology include image processing, task management, workflows and notifications."

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Why Node.js?

Because it's awesome!

Why Node.js?

- Javascript has a rich ecosystem of libraries and tools
- Enable FE developers to build scalable backends
- Large use base - javascript is the English of languages

Why Node.js?

- Lightweight - helps reduce cold start
- Commonly run in a distributed, horizontally scaled fashion
- Scripting means no compilation required to start from a portal
- Runs equally easy on most OS's

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Serverless providers

- Azure Functions
- Amazon Lambda
- Google Cloud Functions
- Auth0 Webtask
- Ibm Openwhisk

What can I do with serverless?

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Hello world

```
module.exports.hello = function(context) {
  context.log(`JavaScript HTTP trigger function
    processed a request.`);

  context.res = {
    body: `Go Serverless v1.x!
      Your function executed successfully!Yay`
  };

  context.done();
};
```

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Timer

Run background tasks

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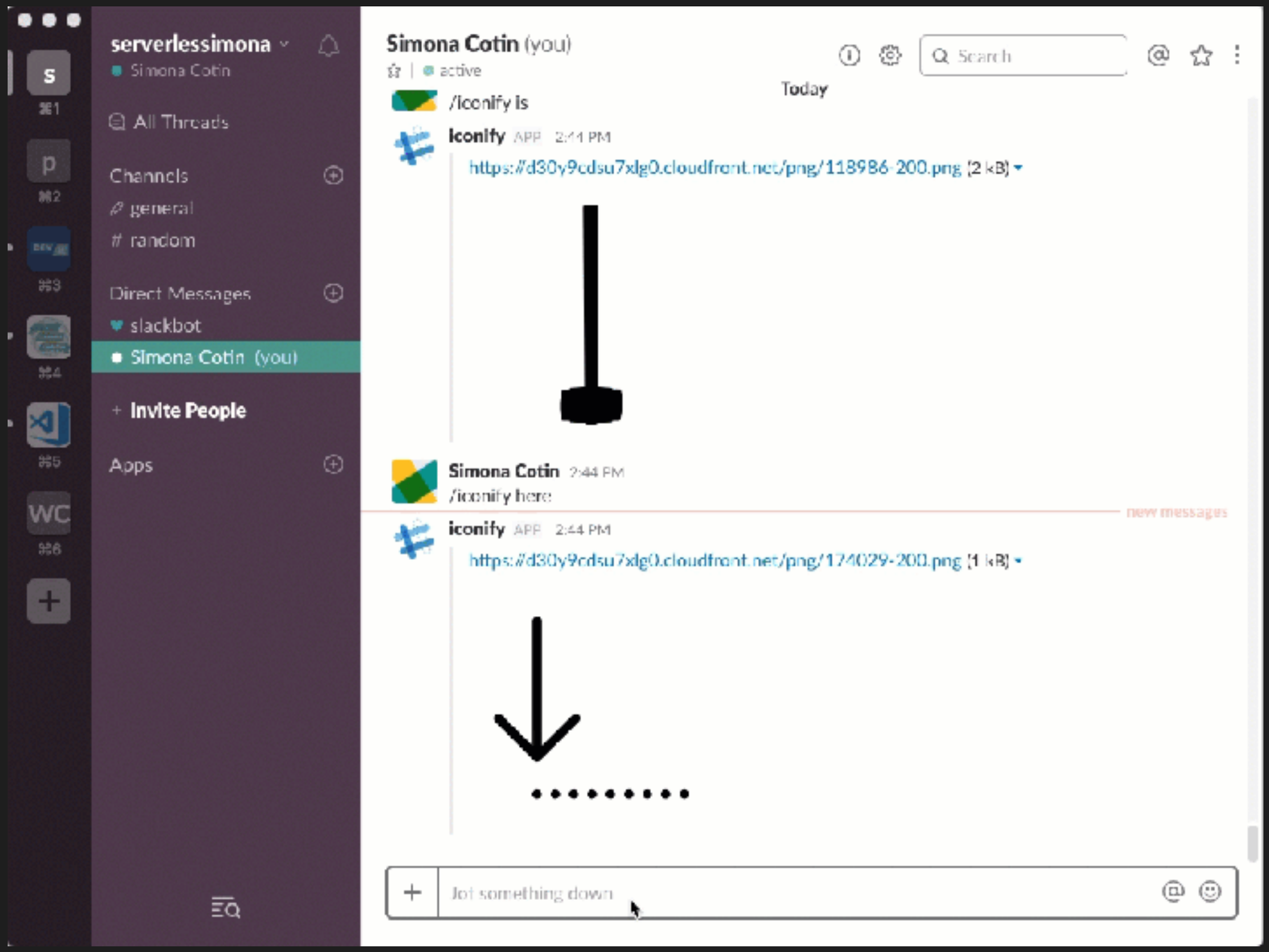
Web hook


serverlessimona
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All Threads
Channels
general
random
Direct Messages
slackbot
Simona Cotin (you)
Invite People
Apps
Simona Cotin (you)
active
Search
Today
/iconify is
Iconify APP 2:41 PM
https://d30y9cdsu7xlg0.cloudfront.net/png/118986-200.png (2 kB)
Simona Cotin 2:44 PM
/iconify here
new messages
iconify APP 2:44 PM
https://d30y9cdsu7xlg0.cloudfront.net/png/174029-200.png (1 kB)
Jot something down

```
var NounProject = require('the-noun-project');
var qs = require('querystring');
module.exports = function(context, req) {
  const body = qs.parse(req.body);
  nounProject = new NounProject({
    key: process.env.NounApiKey,
    secret: process.env.NounApiSecret
  });
  nounProject.getIconsByTerm(body.text, { limit: 5 }, (err, data) => {
    const slack_res = {};
    const attachments = [];
    for (icon of data.icons) {
      attachments.push({ image_url: icon.preview_url, text: icon.preview_url });
    }
    if (!err) {
      slack_res = {
        response_type: 'in_channel',
        attachments: attachments
      };
      context.log(data.icons);
    } else {
      context.log(`Error: ${err}`);
      slack_res = {
        response_type: 'ephemeral',
        text: "Sorry, that didn't work. Please try again."
      };
    }
    context.res = {
      body: slack_res
    };
    context.done();
  });
};
```

Web API

Implement CRUD operations

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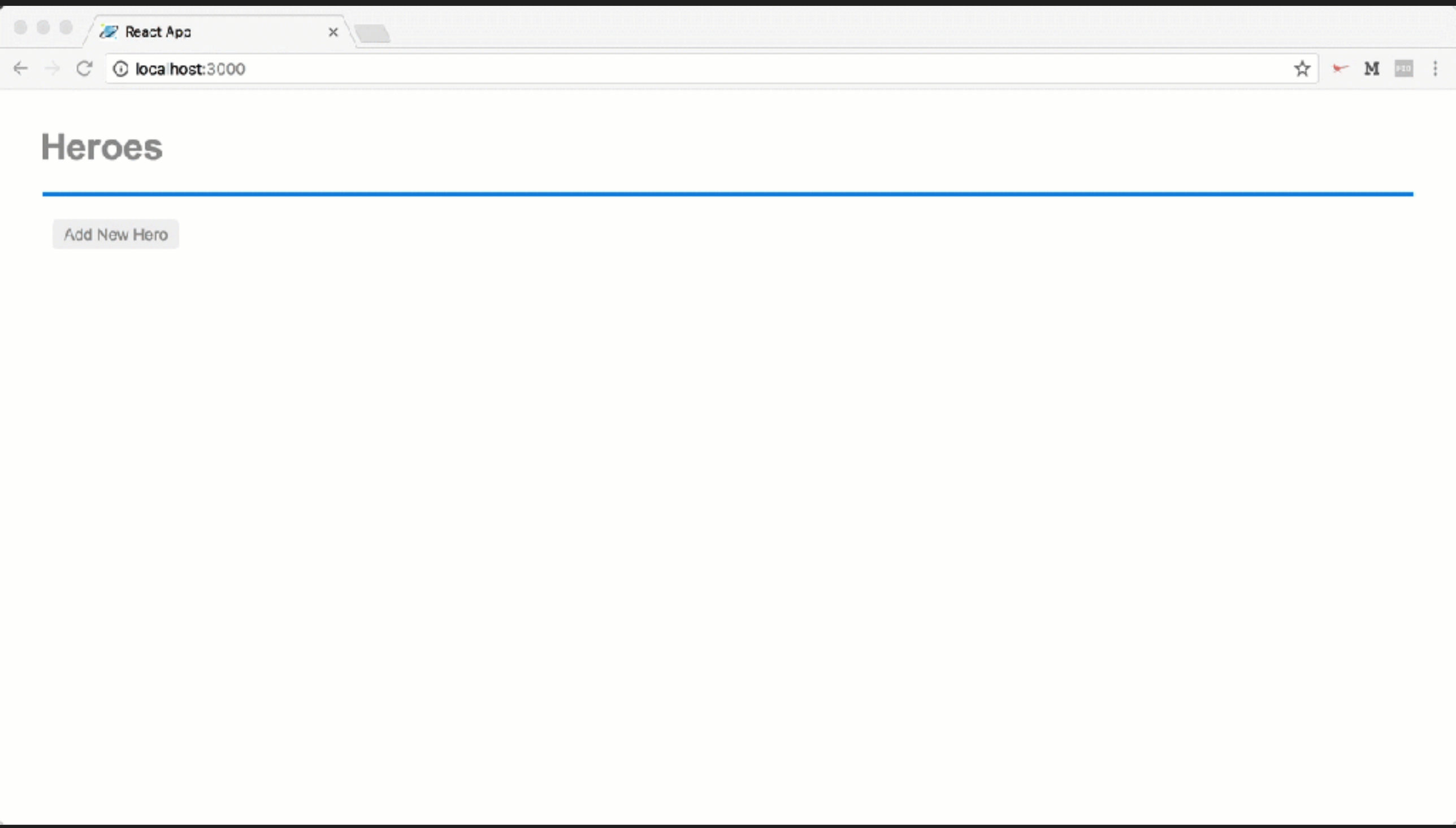
Web API



Web API

Pluralsight course with John Papa

https://aka.ms/pbp

GitHub repo

https://aka.ms/pbp-serverless

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Data processing

Cloud Developer Advocate Speaking

Microsoft Azure

Filter By

Name	Conference	From	To	Location
Abel Wang	Visual Studio Live	3/13/2017	3/17/2017	Las Vegas
Abel Wang	Tech Summit 2017 Amsterdam	3/20/2017	3/21/2017	Amsterdam
Abel Wang	Tech Summit 2017 Milan	3/20/2017	3/21/2017	Milan
Abel Wang	TechSummit 2017 Seoul	4/26/2017	4/27/2017	Seoul
Abel Wang	Velocity	6/19/2017	6/21/2017	San Jose
Abel Wang	VSLive Redmond	8/15/2017	8/16/2017	Redmond
Abel Wang	Jenkins World	8/29/2017	8/31/2017	San Francisco
Abel Wang	Minneapolis Azure Conference	9/7/2017	9/7/2017	Minneapolis
Abel Wang	Visual Studio Partner Summit	9/20/2017	9/21/2017	Redmond
Abel Wang	MSIgnite 2017	9/24/2017	9/29/2017	Orlando, FL
Abel Wang	Minnesota Developer Conference	10/2/2017	10/2/2017	Minneapolis
Abel Wang	AppConn - Budapest	10/10/2017	10/11/2017	Budapest
Abel Wang	VS Live -Anaheim	10/16/2017	10/17/2017	Anaheim
Abel Wang	AppConn - Houston	11/1/2017	11/2/2017	Houston, TX

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Data processing

Demo by Sarah Drasner

(follow her on Twitter!!)

Article: https://css-tricks.com/exploring-data-with-serverless-and-vue-part-i/

How do I get started?

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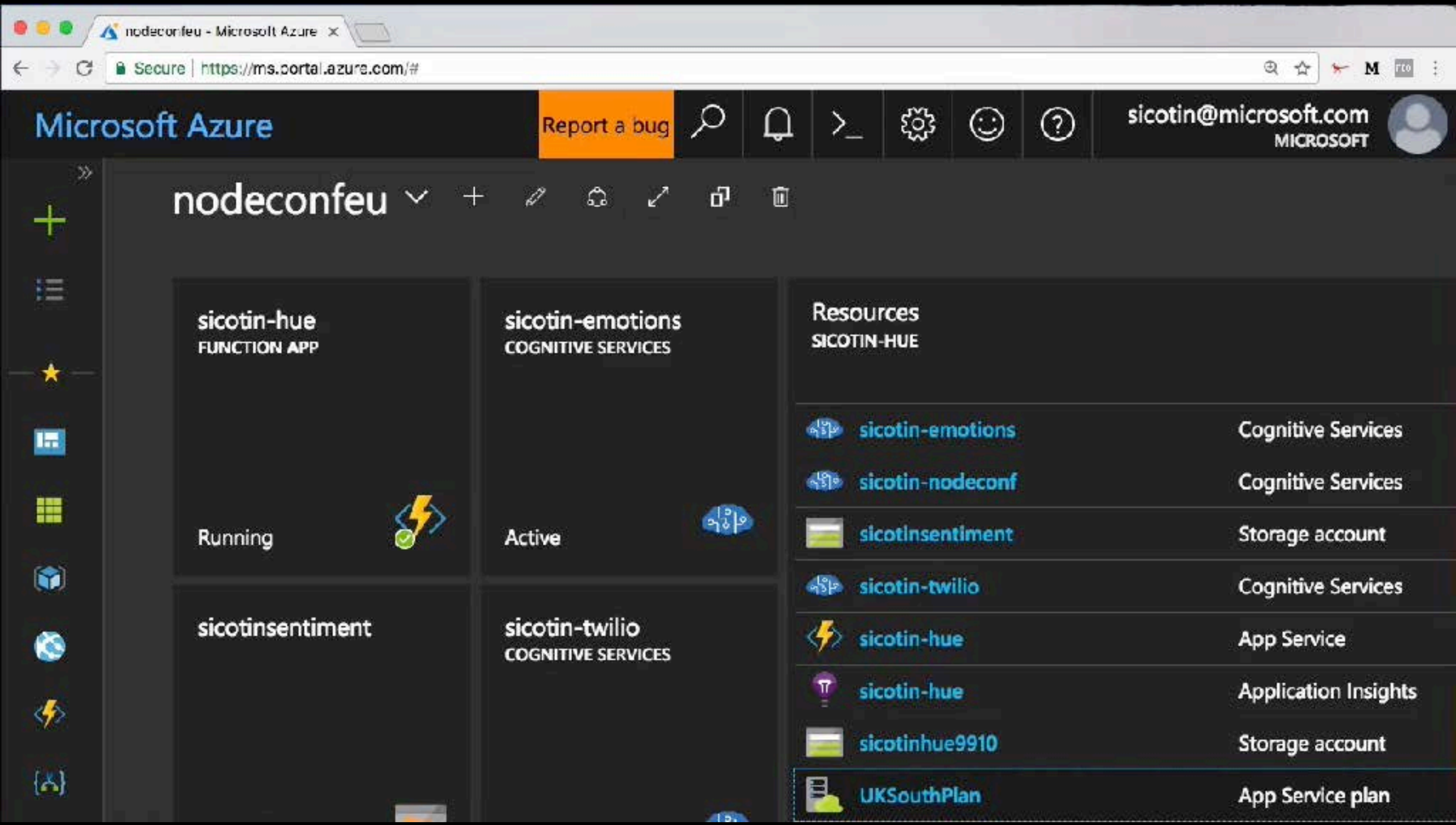
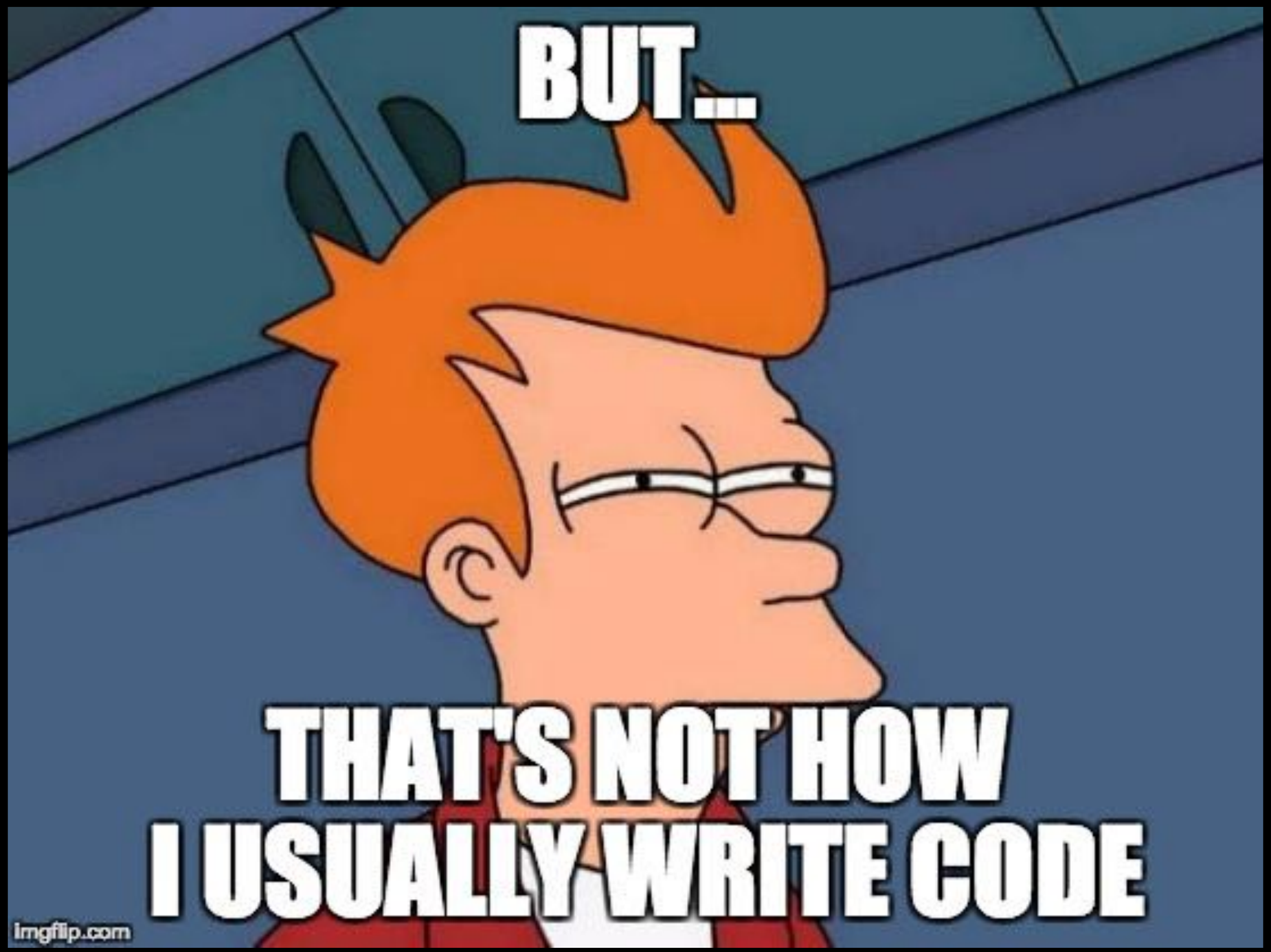
Create function - portal





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Local debugging - prerequisites

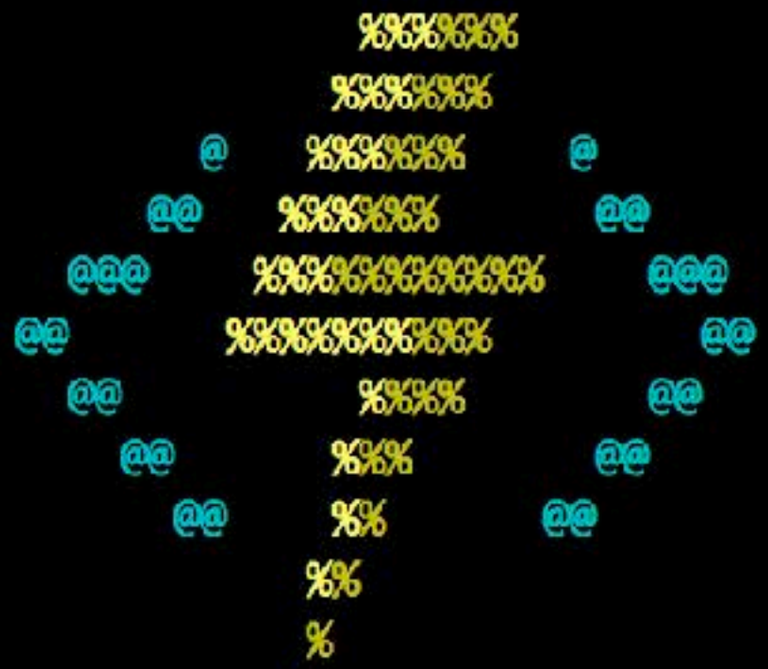
- Node v8.0+
  - Older versions of node will be supported soon.
- .NET Core 2.0
- Azure Core Function Tools 2.0

npm install --global azure-functions-core-tools@core

Local debugging

1. bash

```
Simonas-MBP:~ simonacotin$ func
```



```
Azure Functions Core Tools (2.0.0)
Function Runtime Version: 2.0.11280.0
Usage: func [context] [context] <action> [-/--options]

Contexts:
azure       Commands to log in to Azure and manage resources
function    Commands for creating and running functions locally
host        Commands for running the Functions host locally
settings    Commands for managing environment settings for the local Functions host
```

Create function - cli

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Create function - cli

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Publish function

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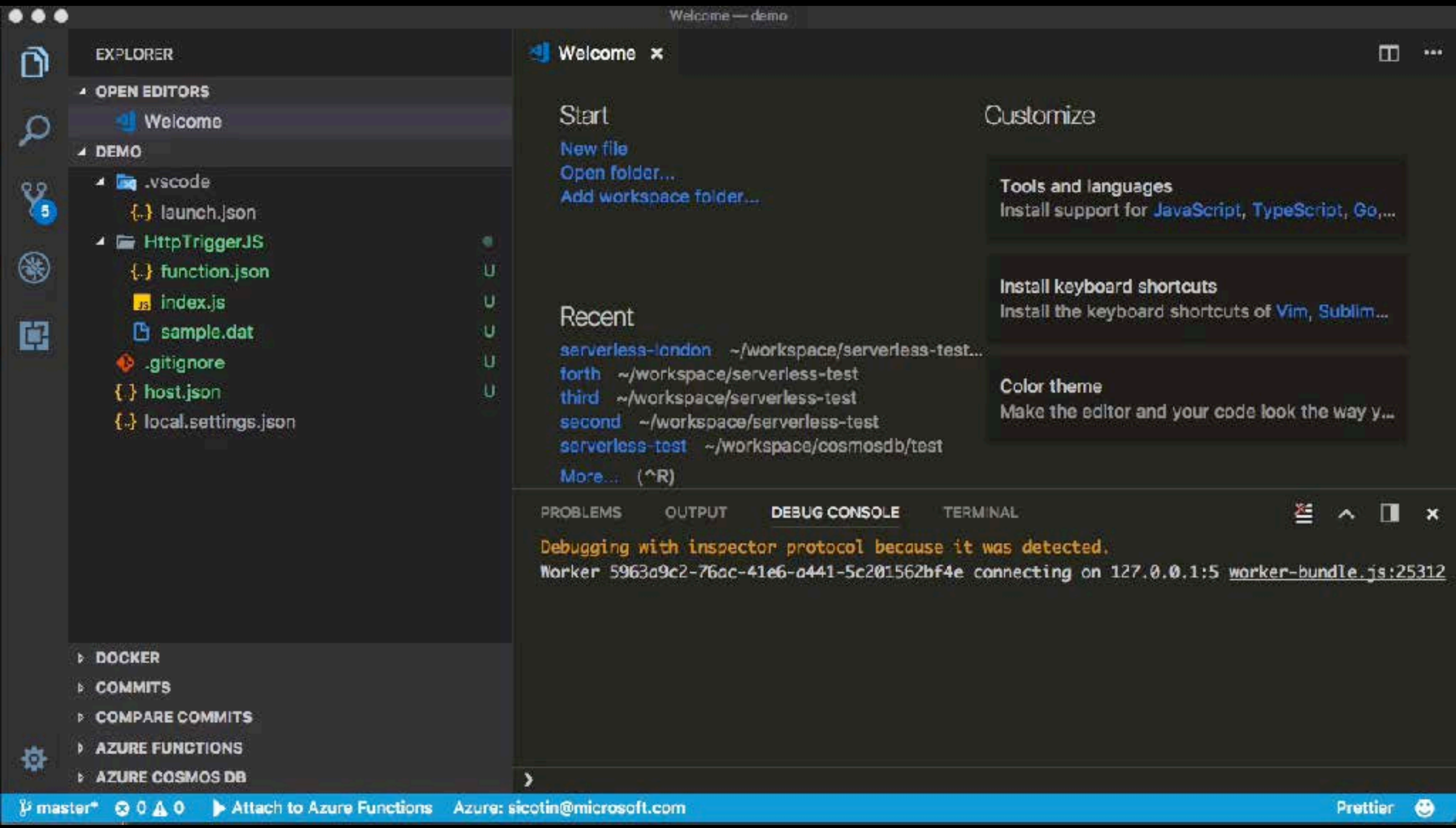
Publish function



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Git deployment

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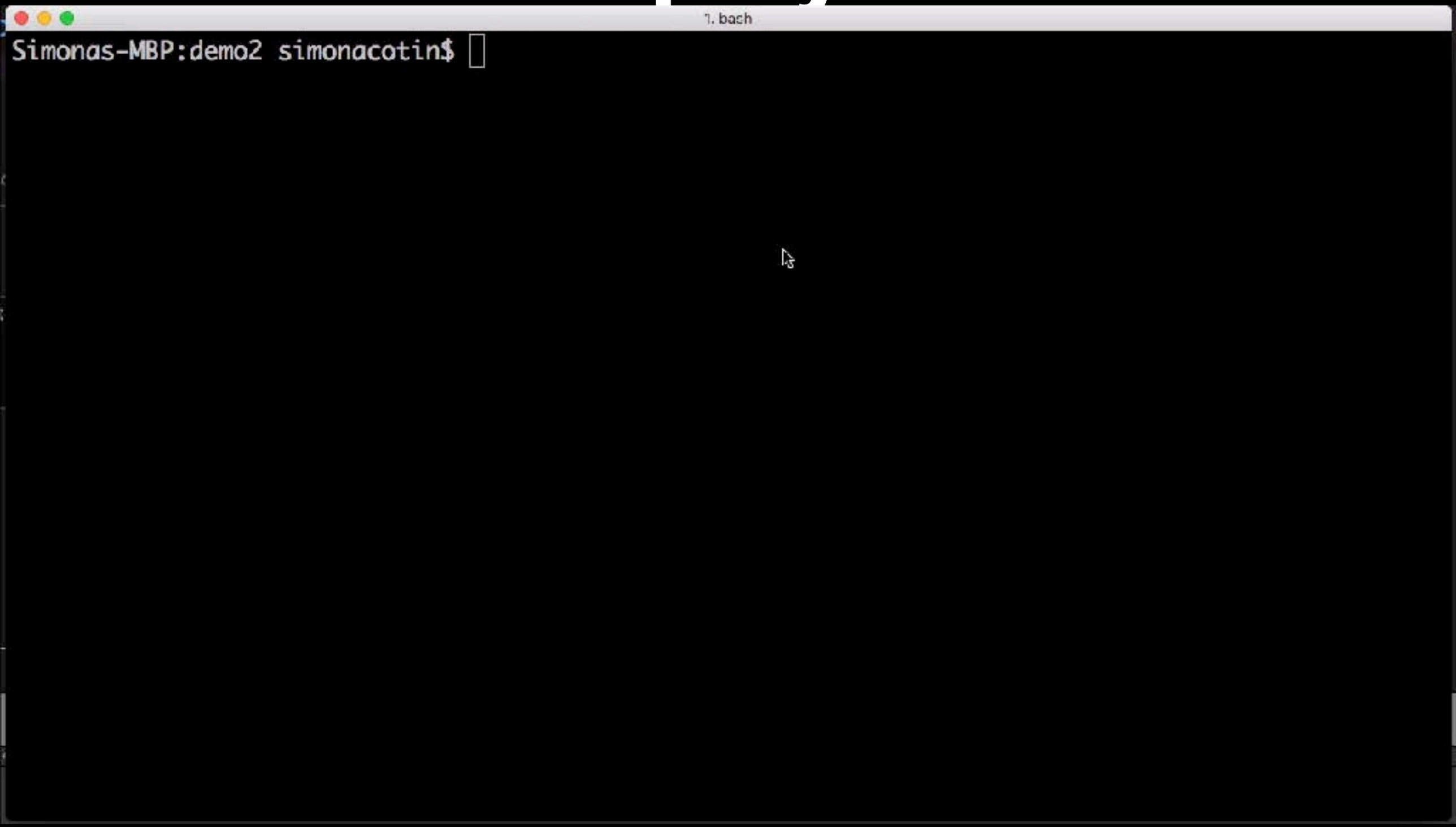
Git deployment



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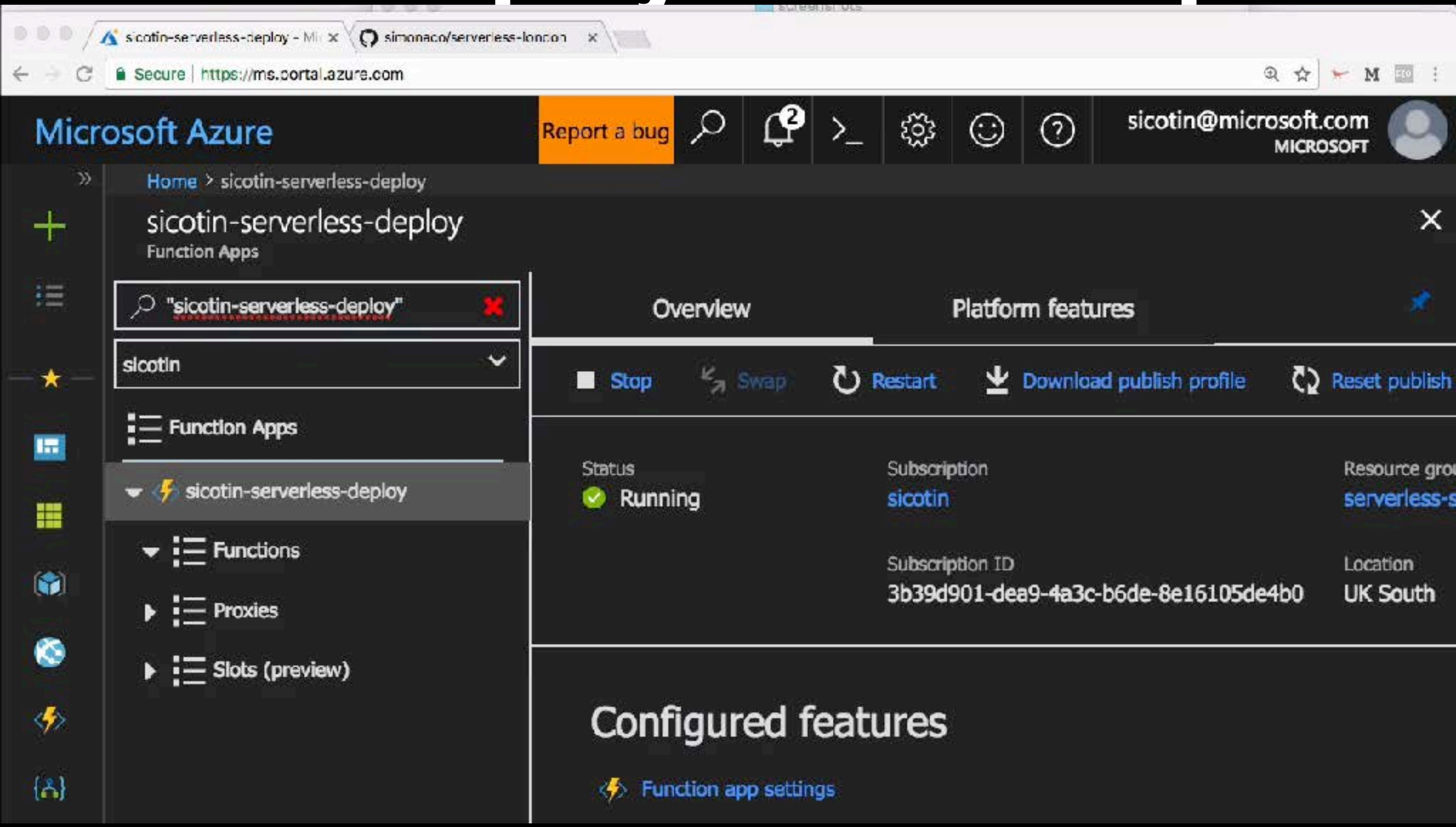
Git deployment - setup

Git deployment - setup



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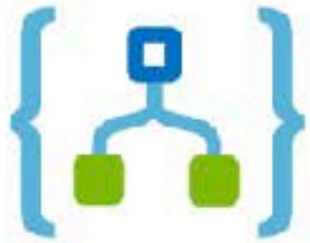
&



An open source set of common use cases for Azure Functions & Logic Apps that are ready to deploy into your Azure Subscription!

OpenALPR License Plate Reader

App for reading license plate info from a photo. (Function in C#)

deploy | chart | src

Stripe Payment Service

Allows for incorporating Stripe payment functionality as a callable web service. (Function in NodeJS)

deploy | blog | chart | src

LIFX Light Bulb color changer

Timers that set the color of an LIFX bulb based on the outside temperature. (Function in NodeJS)

deploy | chart | src

Deploy Git Hosted Azure Function

Deploys an Azure Function(s) via a git Repository URL. (Function in C#)

deploy | chart | src

HTTP CRUD on CosmoDB

An HTTP API for CRUD operations against CosmosDB. (So boring, why would you write it yourself?!!) (Function in NodeJS)

deploy | chart | src

What to Bring

Returns a list of what items you should bring when traveling to certain cities. (Function in NodeJS)

deploy | blog | chart | src

Search

–https://aka.ms/serverless-demos

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- Event driven code
- Autoscales
- Only pay for what you're using/Pay as you go

Resources

- https://github.com/anaibol/awesome-serverless
- https://aka.ms/functions
- https://github.com/simonaco/pbp-serverless
- https://css-tricks.com/exploring-data-with-serverless-and-vue-part-i/
- https://github.com/simonaco/property-suggester

– *https://london.serverlessdays.io/*

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“the thing that distinguishes the best, fastest, most efficient engineering organizations is how little code they actually write”

–Joe Emison