# From Harvard to Heroku

CSCI P-14300
July 5, 2019

Brian Yu
brian@cs.harvard.edu

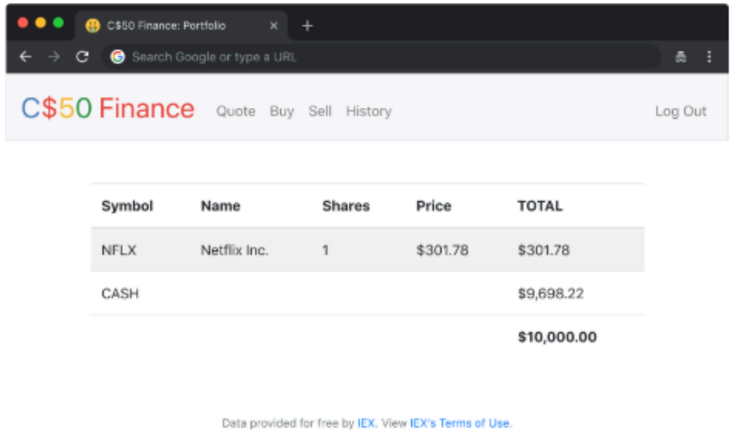
C$50 Finance - CS50 Lab

https://lab.cs50.io/cs50/labs/cscip14300/finance/

Apps Gradescope Tools

# C$50 Finance

In this project, you'll implement a website via which users can "buy" and "sell" stocks, a la the below.




Next

## Background

If you're not quite sure what it means to buy and sell stocks (i.e., shares of a company), head to http://www.investopedia.com/university/stocks/ for a tutorial.

CS50 Lab

Logged in as **brianyu28**. Log out.

Reset

static
templates
application.py
finance.db
helpers.py
requirements.txt

application.py

```
1 import os
2
3 from cs50 import SQL
4 from flask import Flask, flash, jsonify,
  redirect, render_template, request, session
5 from flask_session import Session
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Terminal

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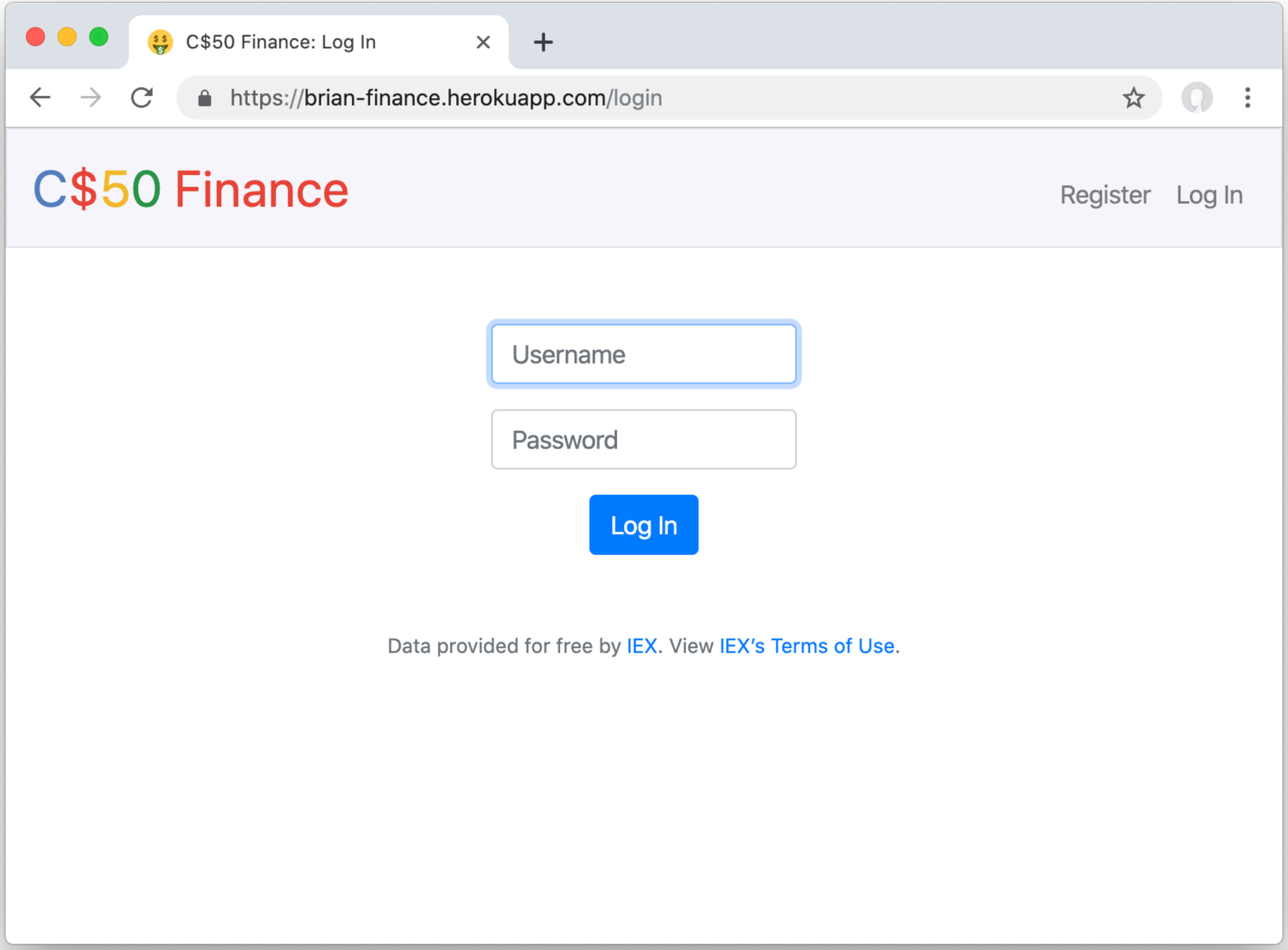
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https://brian-finance.herokuapp.com/login
C$50 Finance
Register
Log In
Username
Password
Log In
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heroku

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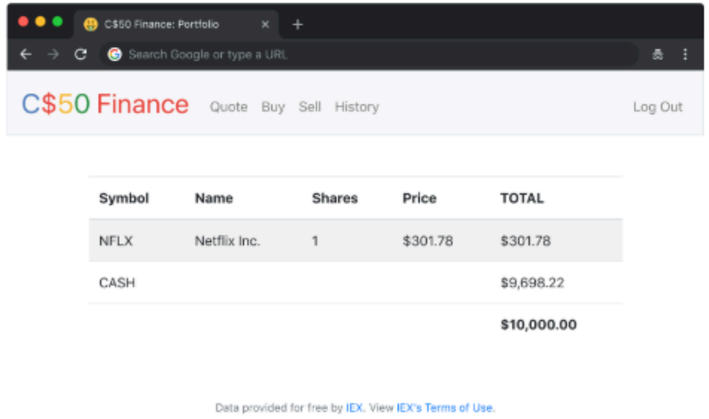


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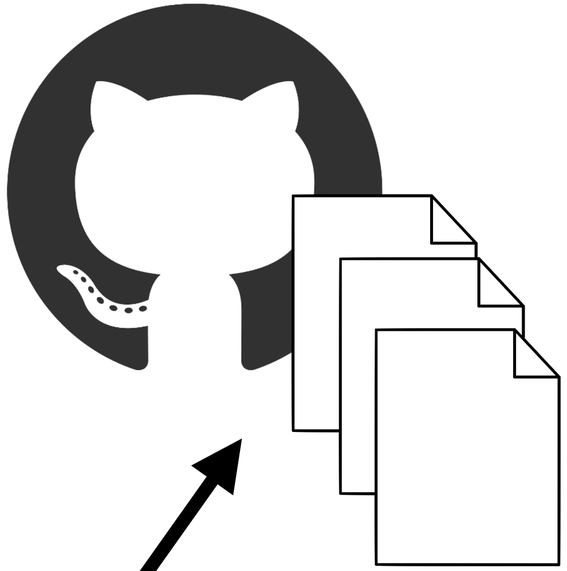
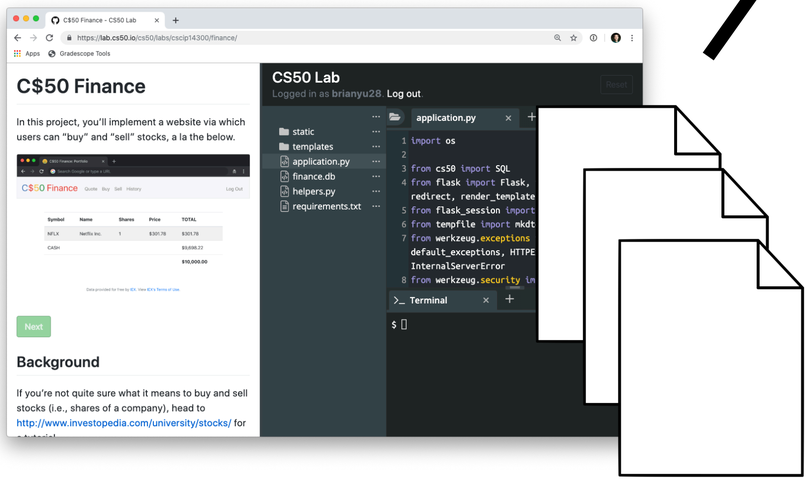


Push code to GitHub.

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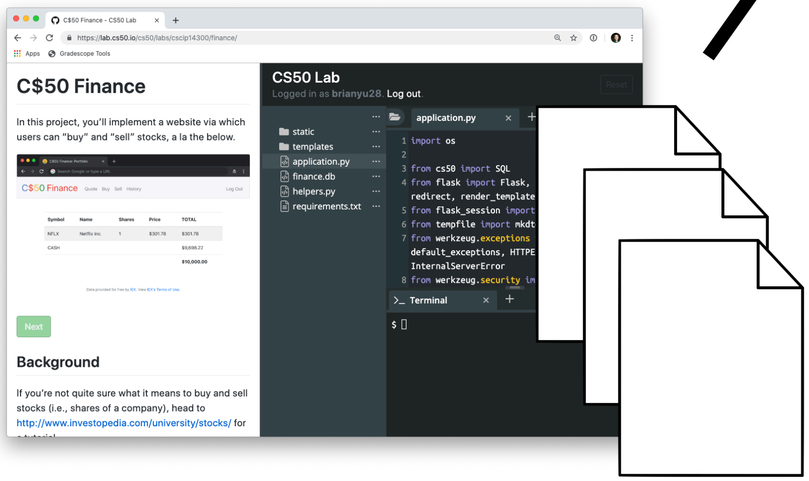
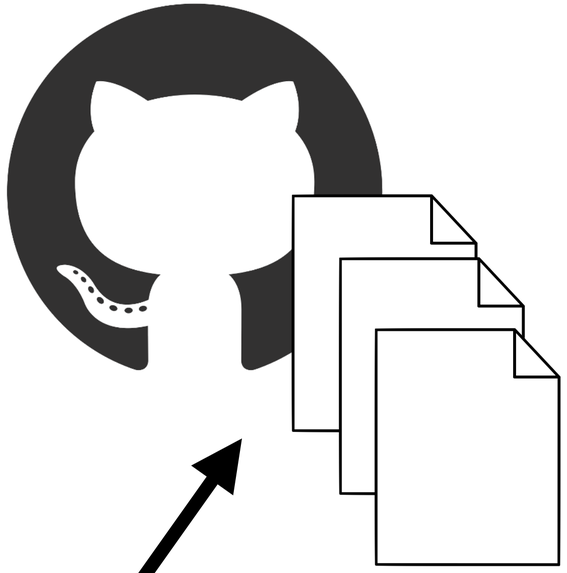
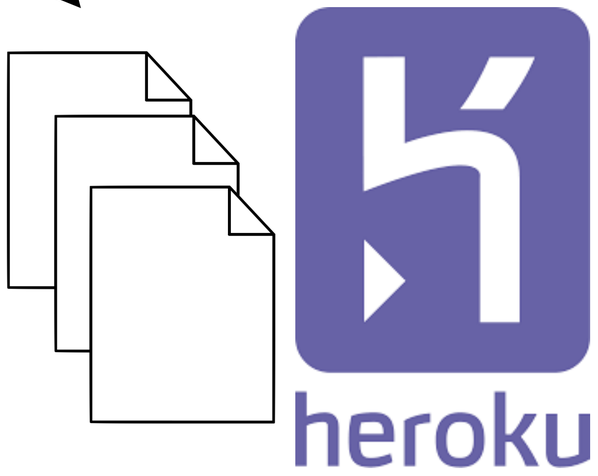
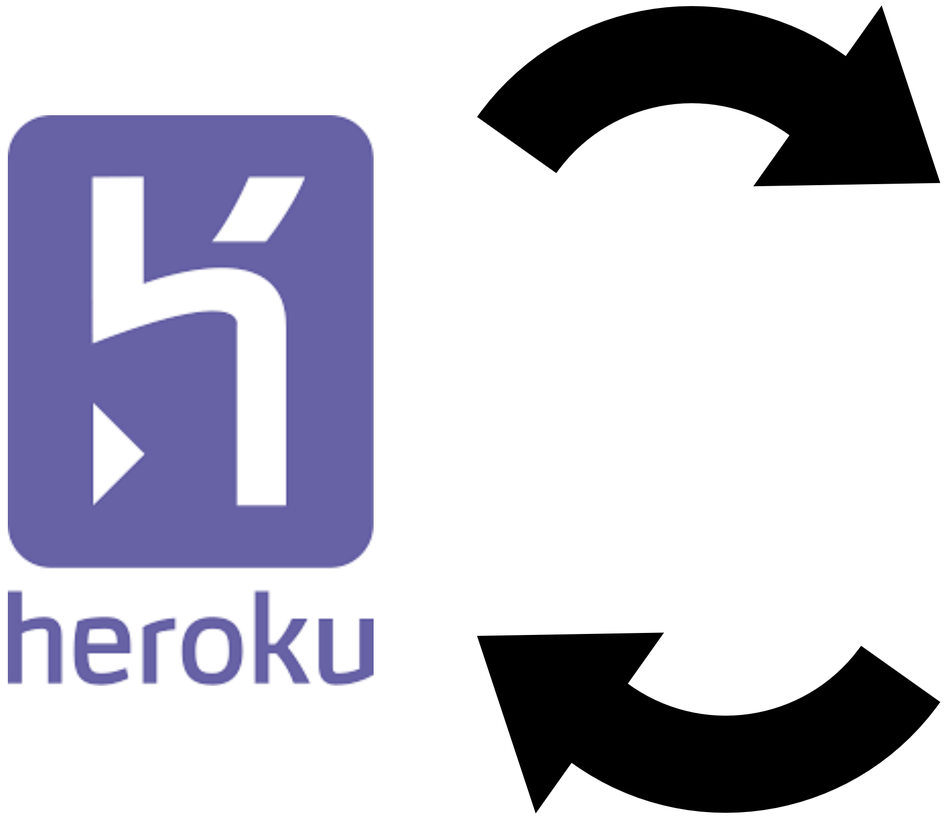
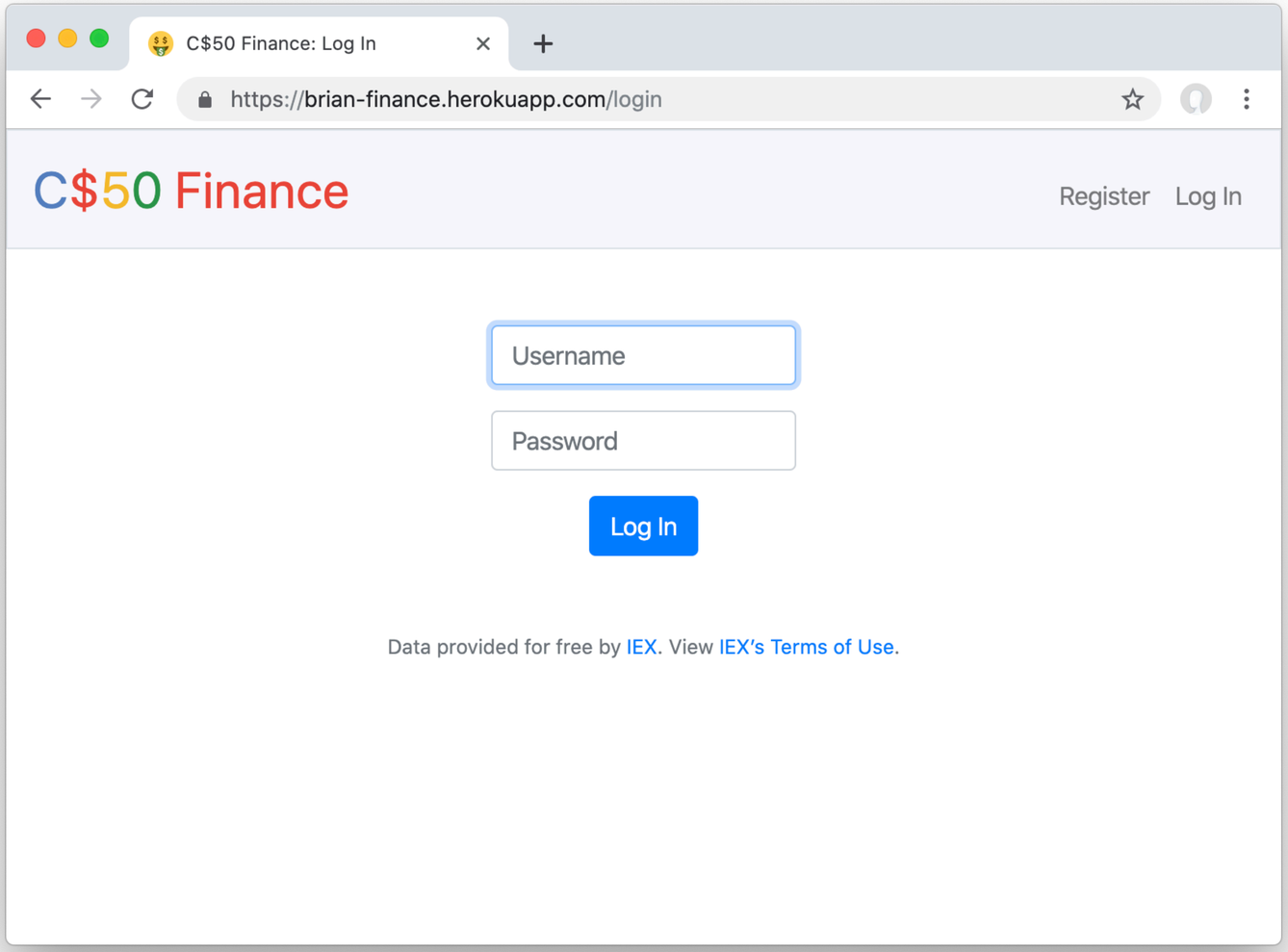


Heroku pulls code from GitHub.




heroku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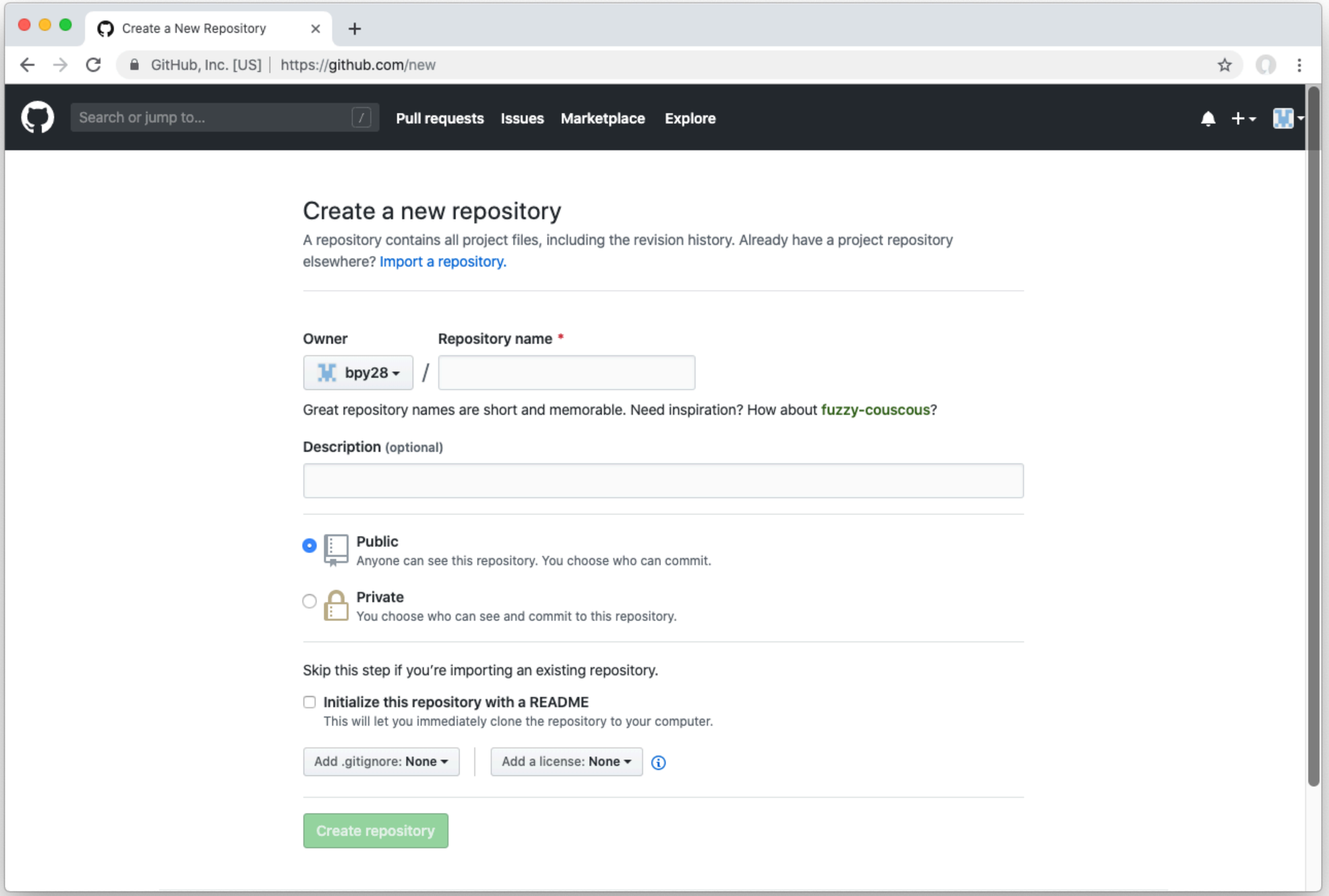
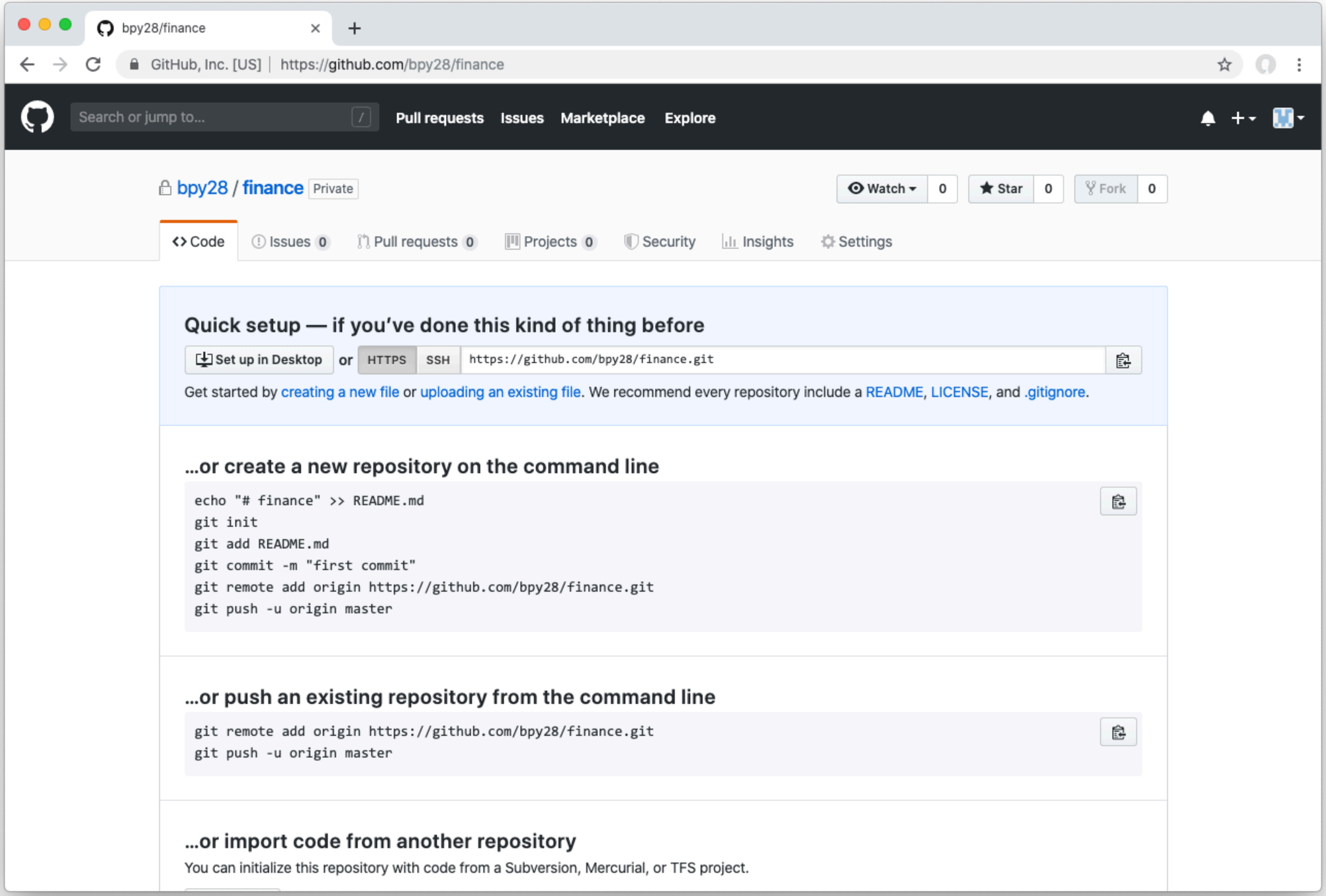
# Deploying to Heroku

# Create a GitHub repository

https://github.com/new


Create a New Repository
GitHub, Inc. [US] | https://github.com/new
Search or jump to...
Pull requests
Issues
Marketplace
Explore
Create a new repository
A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.
Owner
Repository name *
bpy28
/
Great repository names are short and memorable. Need inspiration? How about fuzzy-couscous?
Description (optional)
Public
Anyone can see this repository. You choose who can commit.
Private
You choose who can see and commit to this repository.
Skip this step if you're importing an existing repository.
Initialize this repository with a README
This will let you immediately clone the repository to your computer.
Add .gitignore: None
Add a license: None
Create repository


bpy28/finance
GitHub, Inc. [US] | https://github.com/bpy28/finance
Search or jump to...
Pull requests
Issues
Marketplace
Explore
bpy28 / finance
Private
Watch 0
Star 0
Fork 0
Code
Issues 0
Pull requests 0
Projects 0
Security
Insights
Settings
Quick setup — if you've done this kind of thing before
Set up in Desktop
or
HTTPS
SSH
https://github.com/bpy28/finance.git
Get started by creating a new file or uploading an existing file. We recommend every repository include a README, LICENSE, and .gitignore.
...or create a new repository on the command line
echo "# finance" >> README.md
git init
git add README.md
git commit -m "first commit"
git remote add origin https://github.com/bpy28/finance.git
git push -u origin master
...or push an existing repository from the command line
git remote add origin https://github.com/bpy28/finance.git
git push -u origin master
...or import code from another repository
You can initialize this repository with code from a Subversion, Mercurial, or TFS project.

# Push code to GitHub

https://lab.cs50.io/cs50/labs/cscip14300/finance/

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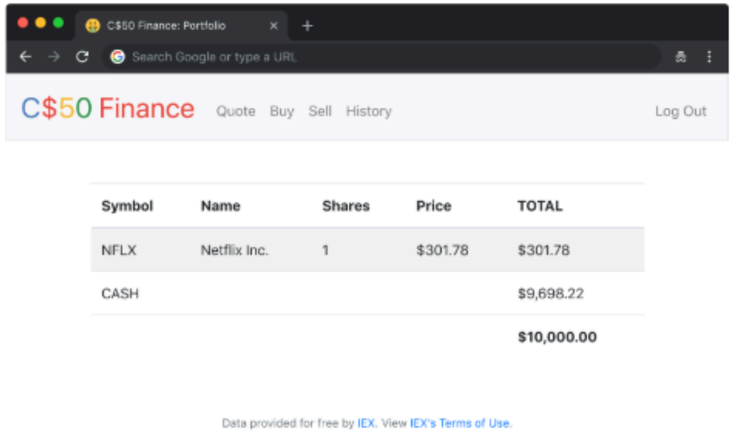


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8 from werkzeug.security import
```

Terminal

$

```
$ git init
```
Make this a git repository.

```
$ git add *
```
Add all files.

```
$ git commit -m "First commit"
```
Save changes.

```
$ git remote add origin
  https://github.com/USERNAME/REPO.git
```
Link to GitHub.

```
$ git push -u origin master
```
Push code online.

# Add `Procfile` to repository

gunicorn

# Procfile

```
web: gunicorn -w 1 application:app
```

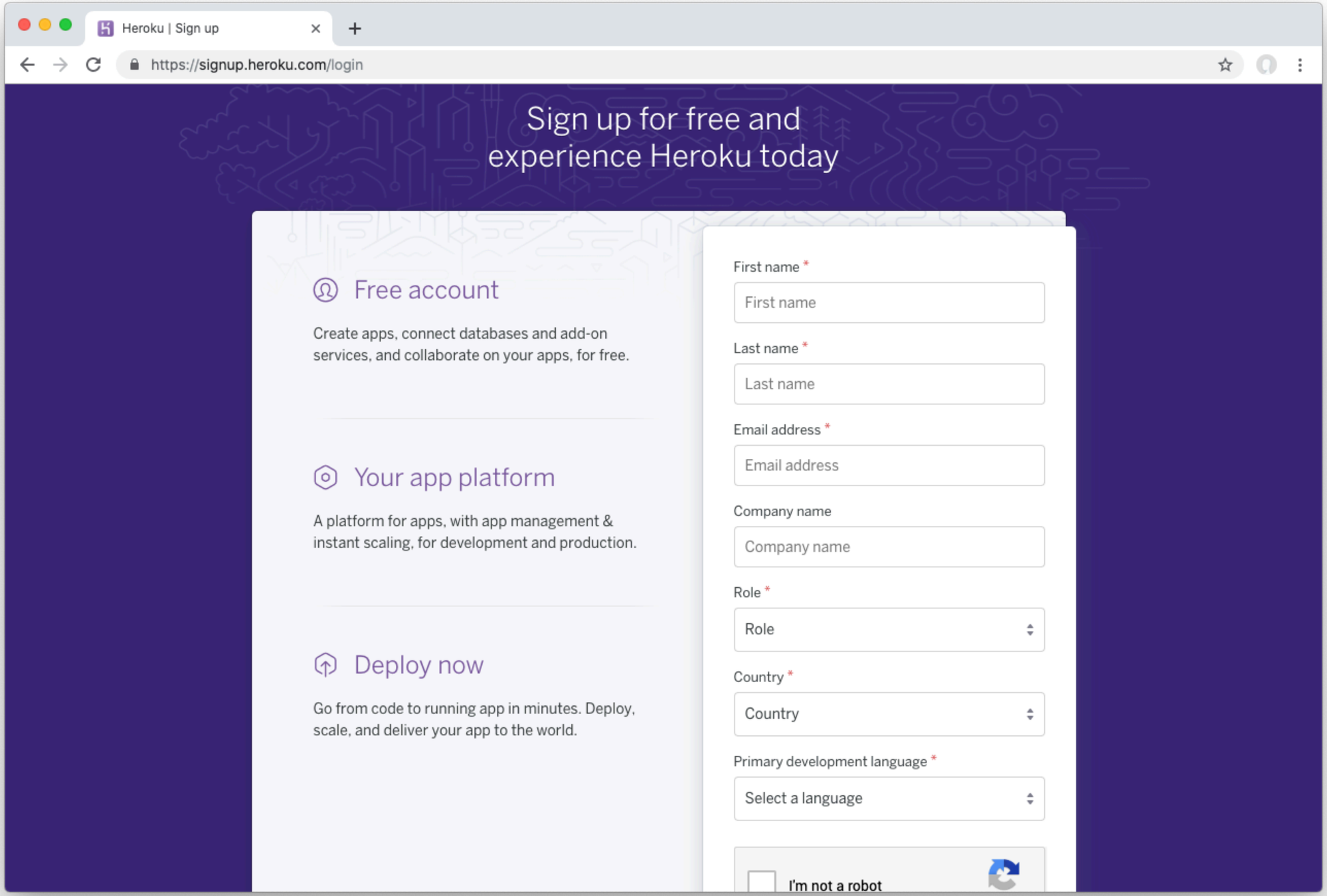
# requirements.txt

```
...
gunicorn
...
```

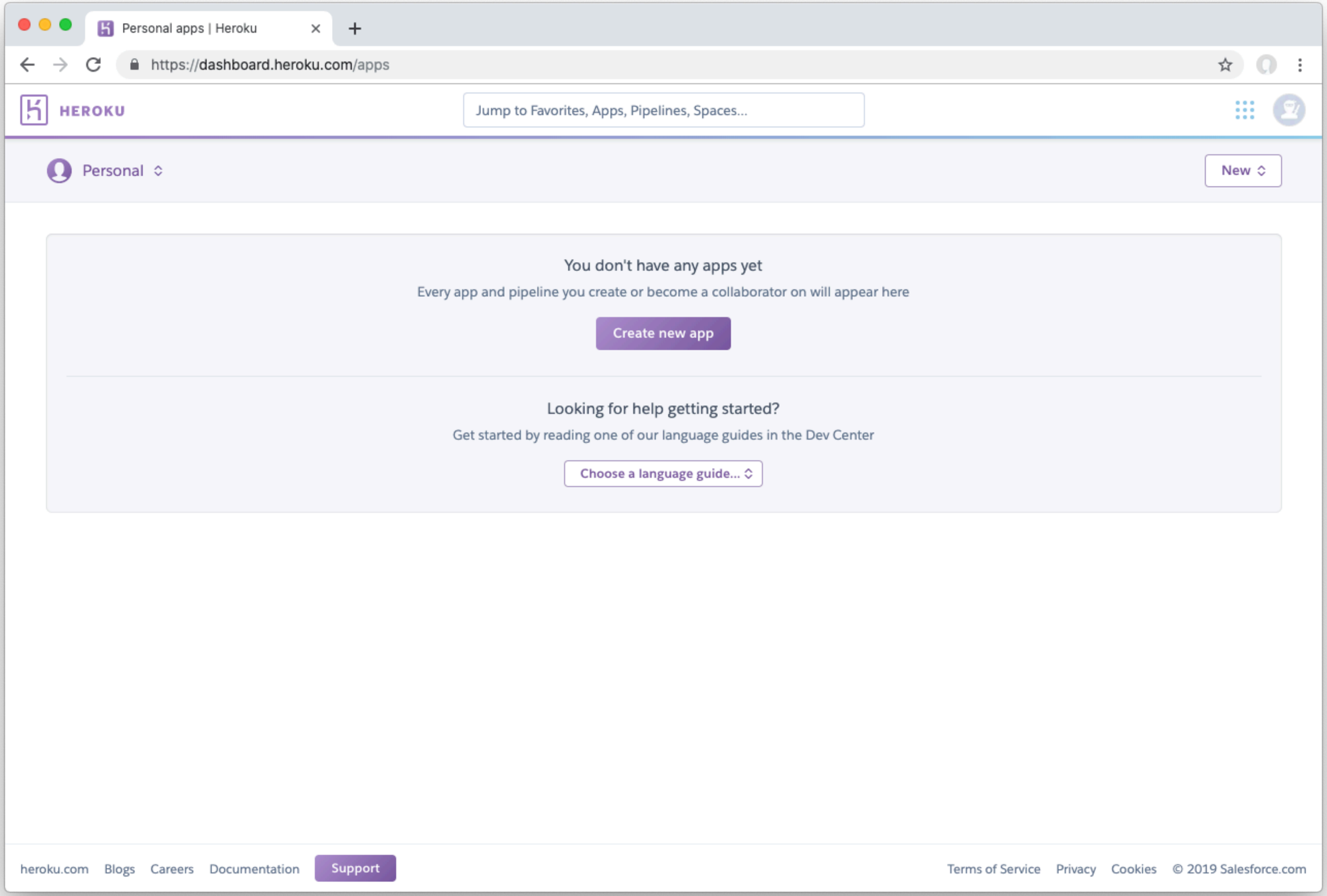
```
$ git add Procfile
$ git add requirements.txt
$ git commit -m "Add Procfile"
$ git push
```

# Sign up for Heroku

https://signup.heroku.com/


Heroku | Sign up
https://signup.heroku.com/login
Sign up for free and experience Heroku today
Free account
Create apps, connect databases and add-on services, and collaborate on your apps, for free.
Your app platform
A platform for apps, with app management & instant scaling, for development and production.
Deploy now
Go from code to running app in minutes. Deploy, scale, and deliver your app to the world.
First name *
First name
Last name *
Last name
Email address *
Email address
Company name
Company name
Role *
Role
Country *
Country
Primary development language *
Select a language
I'm not a robot

# Create a Heroku app


Personal apps | Heroku
https://dashboard.heroku.com/apps
HEROKU
Jump to Favorites, Apps, Pipelines, Spaces...
Personal
New
You don't have any apps yet
Every app and pipeline you create or become a collaborator on will appear here
Create new app
Looking for help getting started?
Get started by reading one of our language guides in the Dev Center
Choose a language guide...
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Blogs
Careers
Documentation
Support
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Privacy
Cookies
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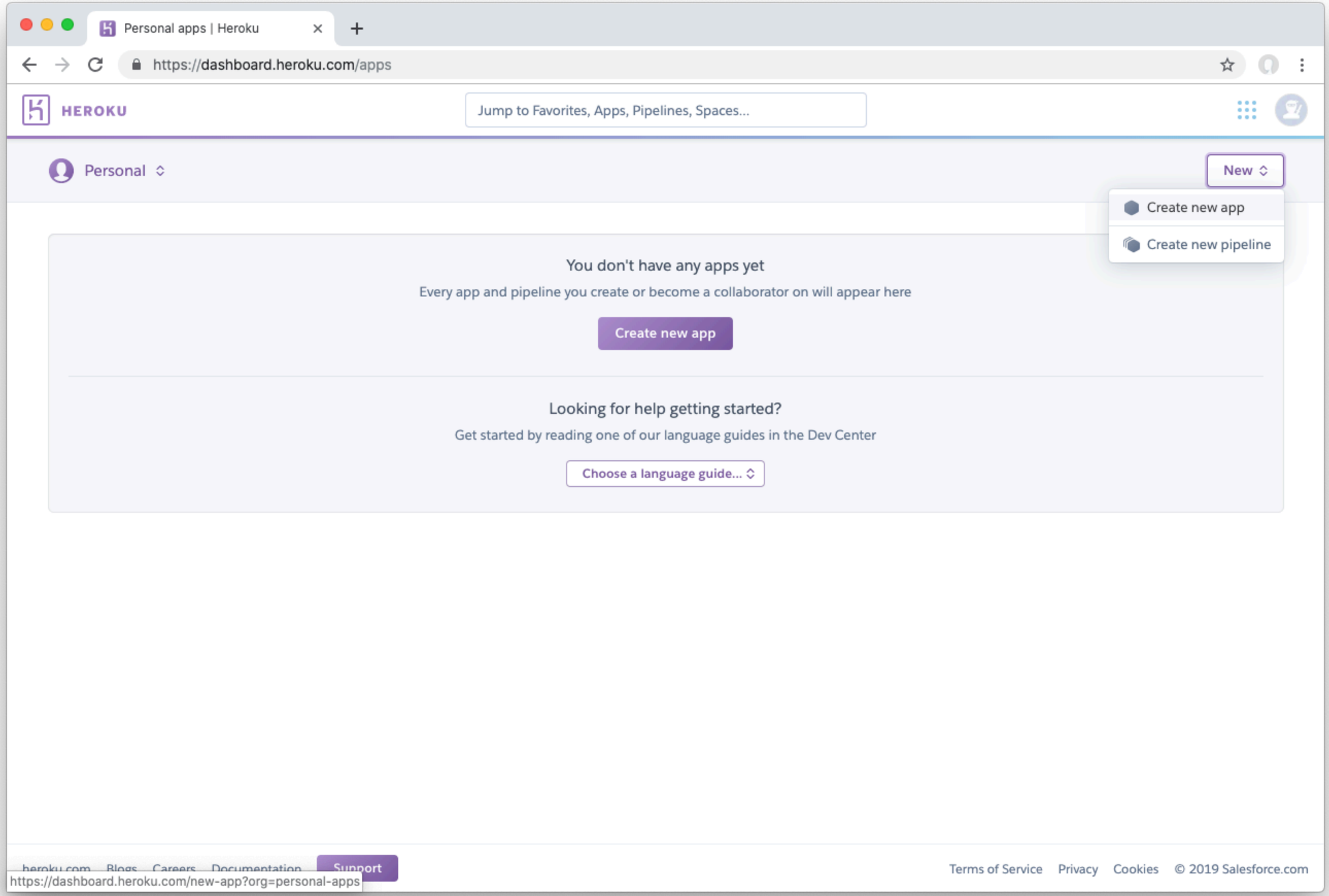
Personal apps | Heroku
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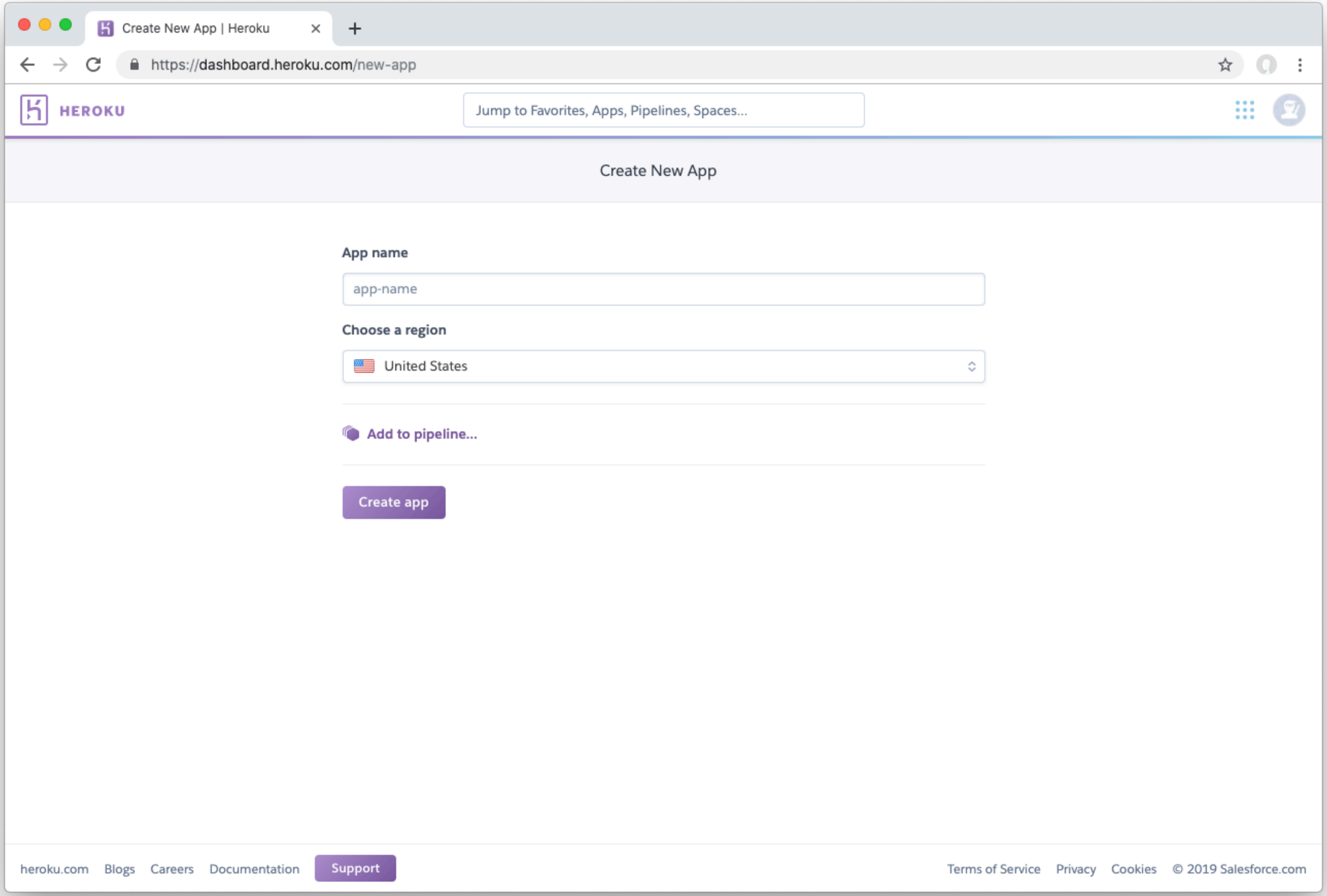
HEROKU
Jump to Favorites, Apps, Pipelines, Spaces...
Personal
New
Create new app
Create new pipeline
You don't have any apps yet
Every app and pipeline you create or become a collaborator on will appear here
Create new app
Looking for help getting started?
Get started by reading one of our language guides in the Dev Center
Choose a language guide...
heroku.com Blogs Careers Documentation Support
Terms of Service Privacy Cookies © 2019 Salesforce.com
https://dashboard.heroku.com/new-app?org=personal-apps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HEROKU
Jump to Favorites, Apps, Pipelines, Spaces...
Create New App
App name
app-name
Choose a region
United States
Add to pipeline...
Create app
heroku.com
Blogs
Careers
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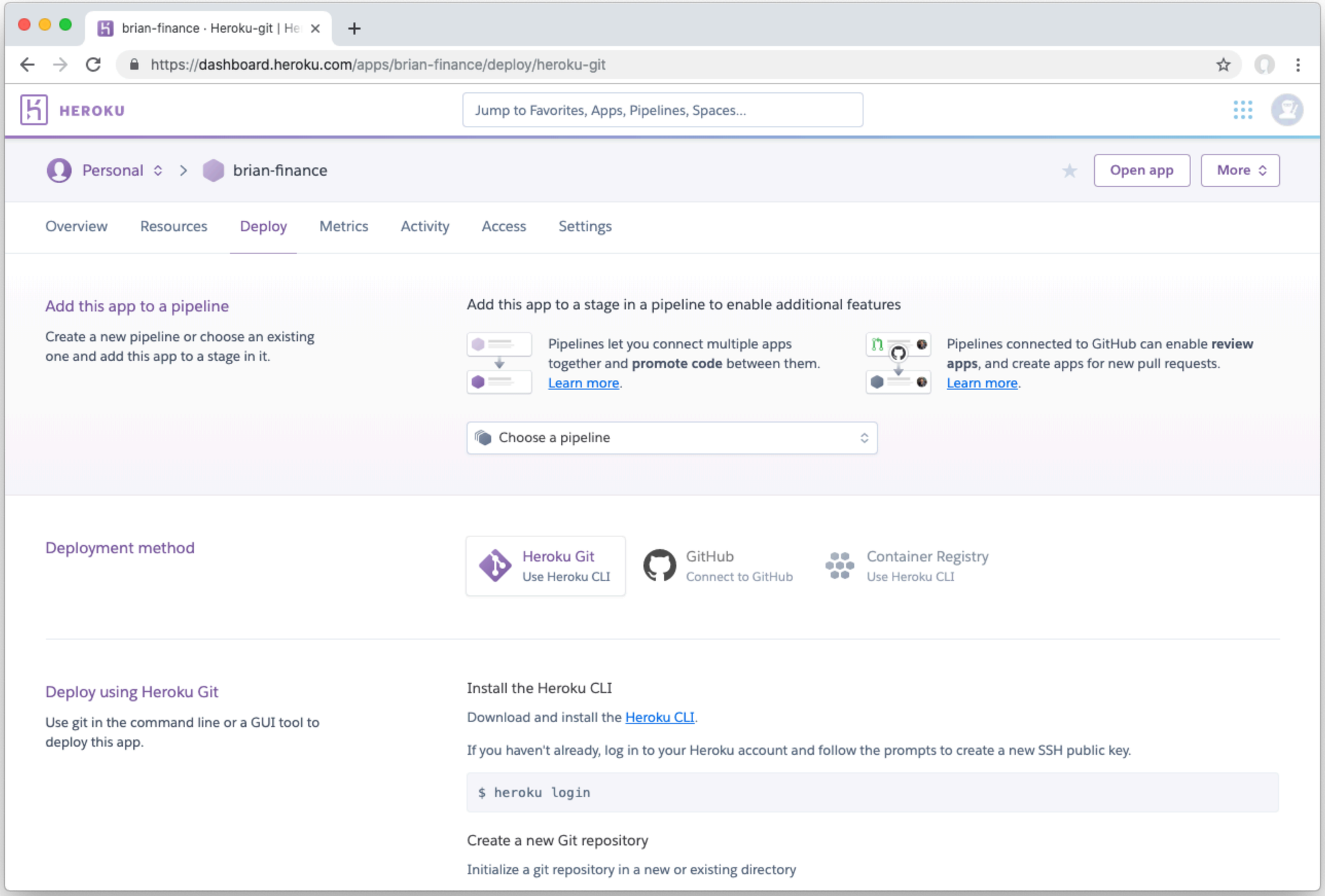
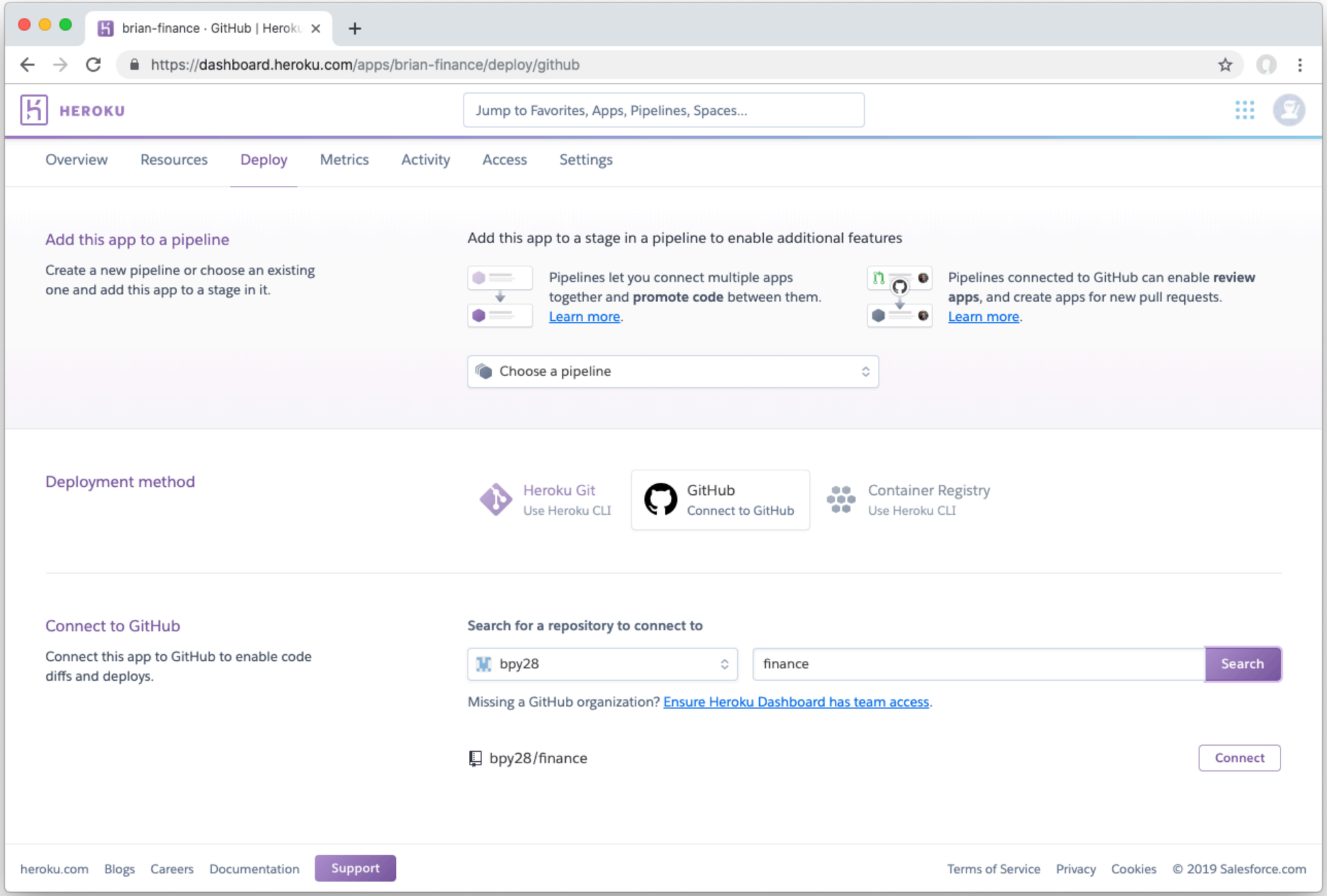
# Connect Heroku to GitHub


brian-finance · Heroku-git | He
https://dashboard.heroku.com/apps/brian-finance/deploy/heroku-git
HEROKU
Jump to Favorites, Apps, Pipelines, Spaces...
Personal
brian-finance
Open app
More
Overview
Resources
Deploy
Metrics
Activity
Access
Settings
Add this app to a pipeline
Create a new pipeline or choose an existing one and add this app to a stage in it.
Add this app to a stage in a pipeline to enable additional features
Pipelines let you connect multiple apps together and promote code between them. Learn more.
Pipelines connected to GitHub can enable review apps, and create apps for new pull requests. Learn more.
Choose a pipeline
Deployment method
Heroku Git
Use Heroku CLI
GitHub
Connect to GitHub
Container Registry
Use Heroku CLI
Deploy using Heroku Git
Use git in the command line or a GUI tool to deploy this app.
Install the Heroku CLI
Download and install the Heroku CLI.
If you haven't already, log in to your Heroku account and follow the prompts to create a new SSH public key.
$ heroku login
Create a new Git repository
Initialize a git repository in a new or existing directory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Heroku Git
Use Heroku CLI
GitHub
Connect to GitHub
Container Registry
Use Heroku CLI
Connect to GitHub
Connect this app to GitHub to enable code diffs and deploys.
Search for a repository to connect to
bpy28
finance
Search
Missing a GitHub organization? Ensure Heroku Dashboard has team access.
bpy28/finance
Connect
heroku.com
Blogs
Careers
Documentation
Support
Terms of Service
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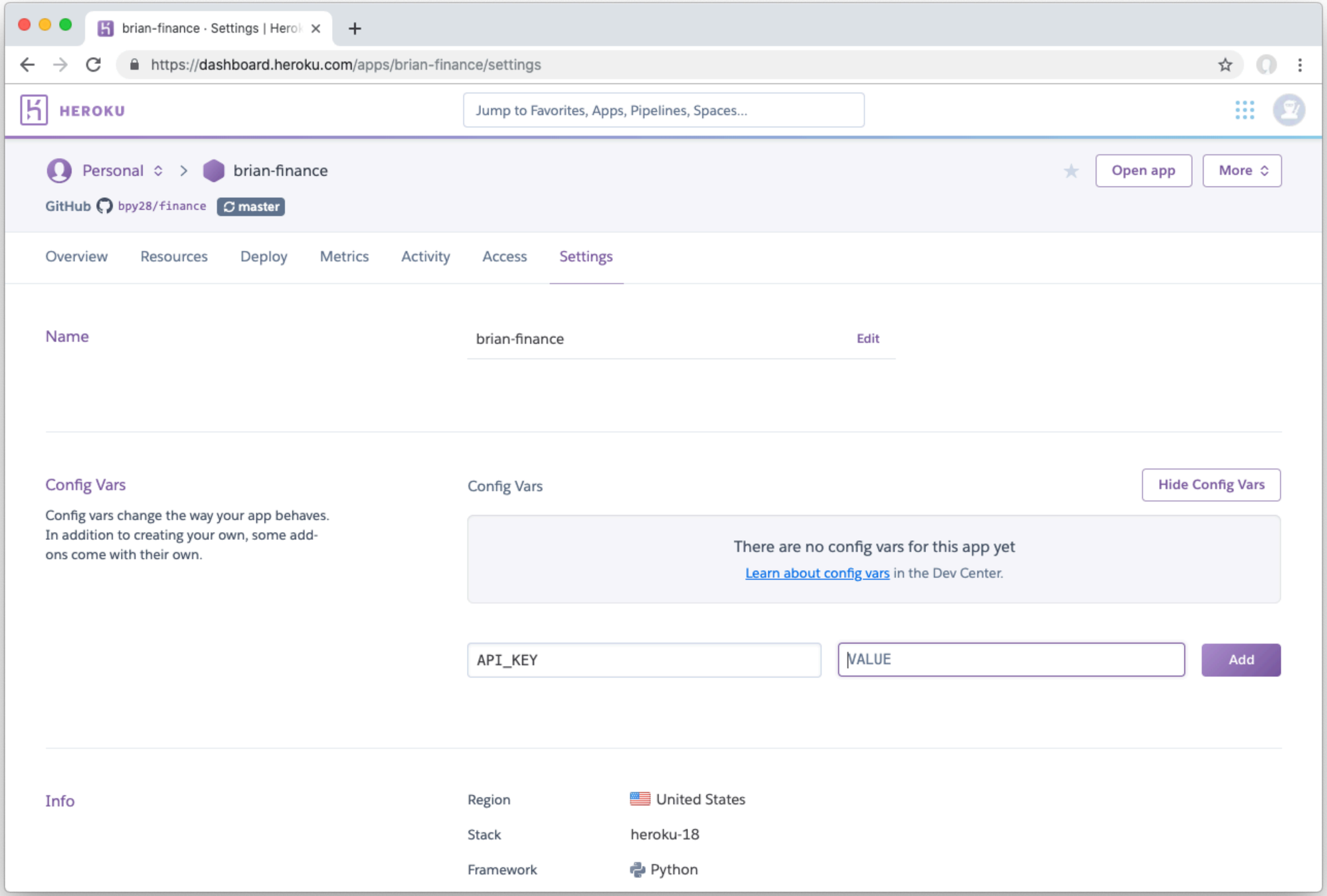
# Add `API_KEY` to Heroku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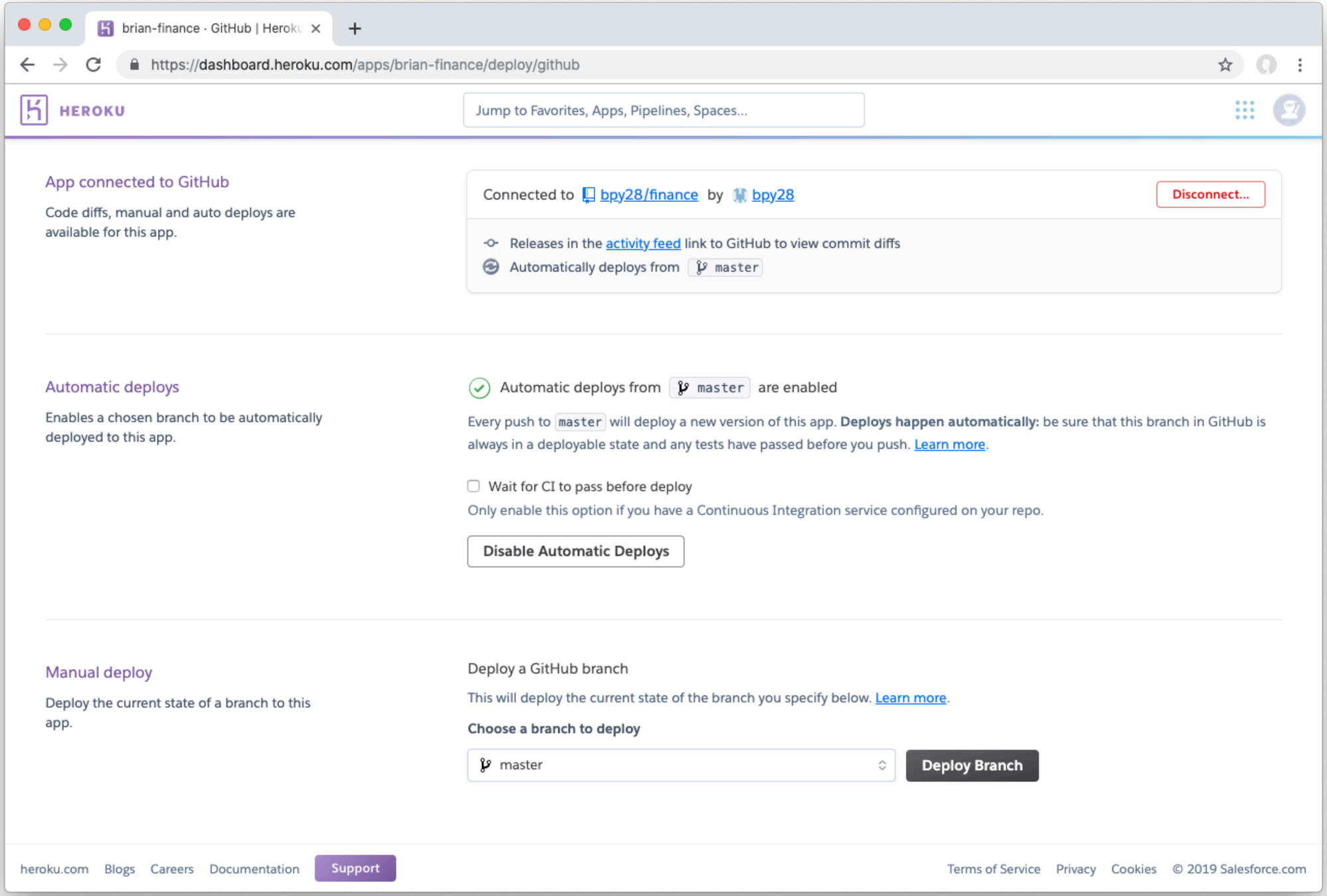
Personal
brian-finance
Open app
More
GitHub bpy28/finance
master
Overview
Resources
Deploy
Metrics
Activity
Access
Settings
Name
brian-finance
Edit
Config Vars
Config vars change the way your app behaves. In addition to creating your own, some add-ons come with their own.
Config Vars
Hide Config Vars
There are no config vars for this app yet
Learn about config vars in the Dev Center.
API_KEY
VALUE
Add
Info
Region
United States
Stack
heroku-18
Framework
Python

# Deploy application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HEROKU
Jump to Favorites, Apps, Pipelines, Spaces...
App connected to GitHub
Code diffs, manual and auto deploys are available for this app.
Connected to bpy28/finance by bpy28
Disconnect...
Releases in the activity feed link to GitHub to view commit diffs
Automatically deploys from master
Automatic deploys
Enables a chosen branch to be automatically deployed to this app.
Automatic deploys from master are enabled
Every push to master will deploy a new version of this app. Deploys happen automatically: be sure that this branch in GitHub is always in a deployable state and any tests have passed before you push. Learn more.
Wait for CI to pass before deploy
Only enable this option if you have a Continuous Integration service configured on your repo.
Disable Automatic Deploys
Manual deploy
Deploy the current state of a branch to this app.
Deploy a GitHub branch
This will deploy the current state of the branch you specify below. Learn more.
Choose a branch to deploy
master
Deploy Branch
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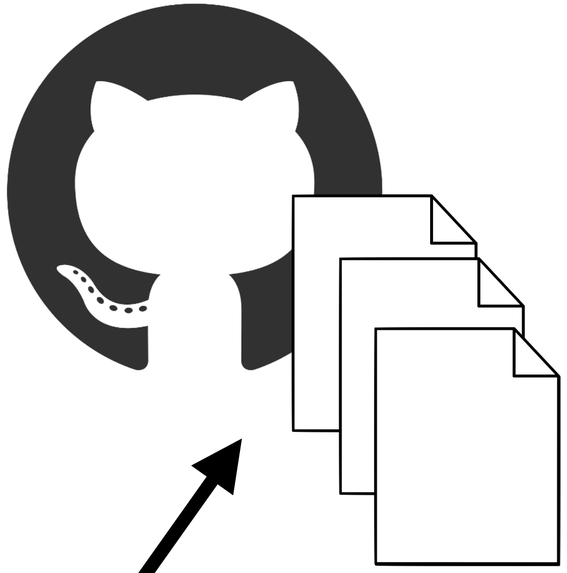

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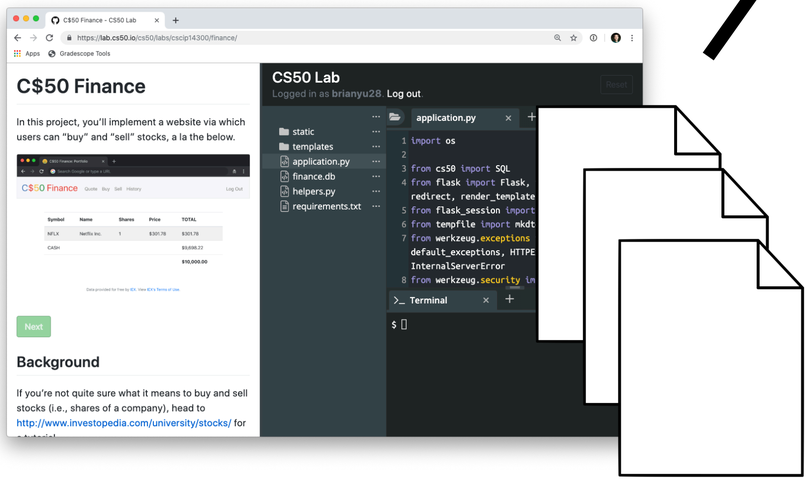
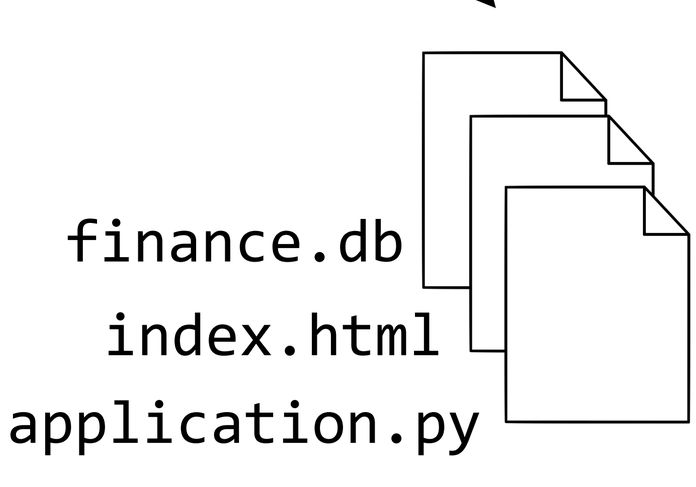
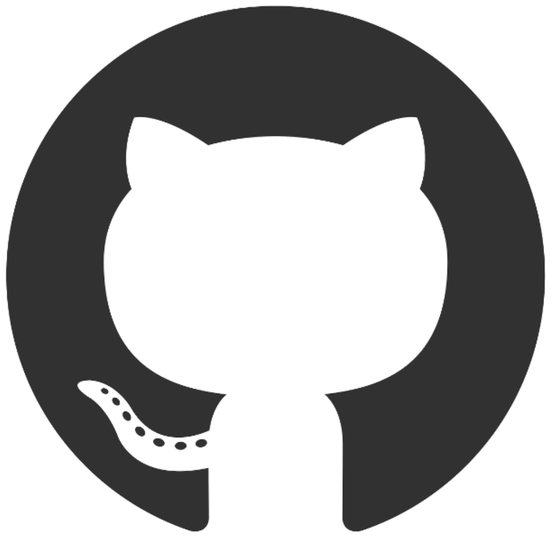
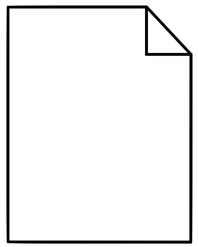
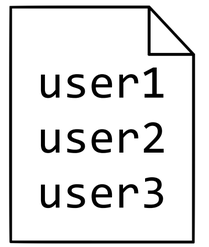






finance.db

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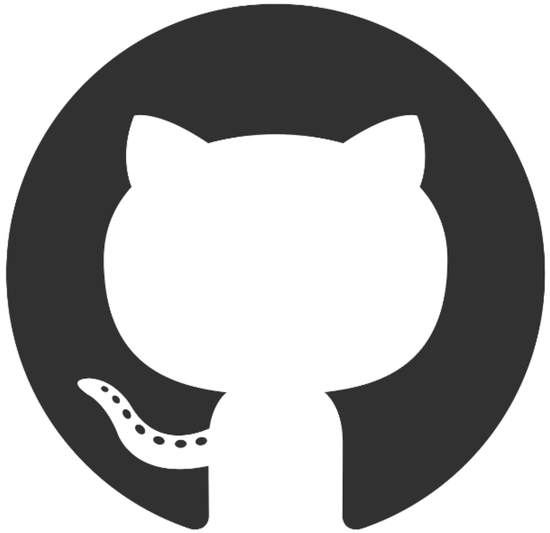

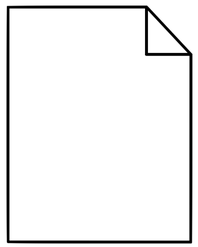

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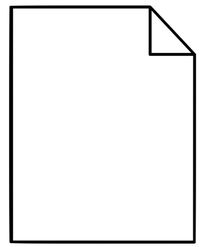
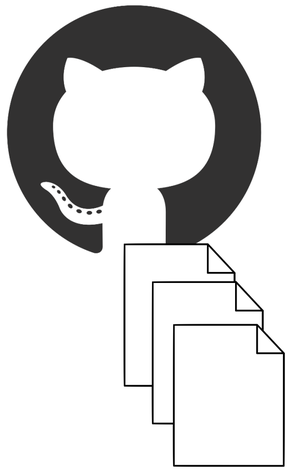
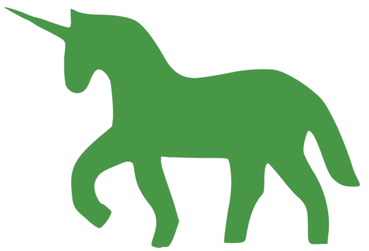
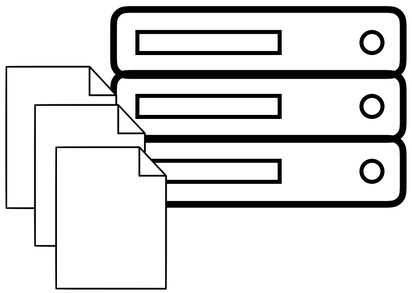
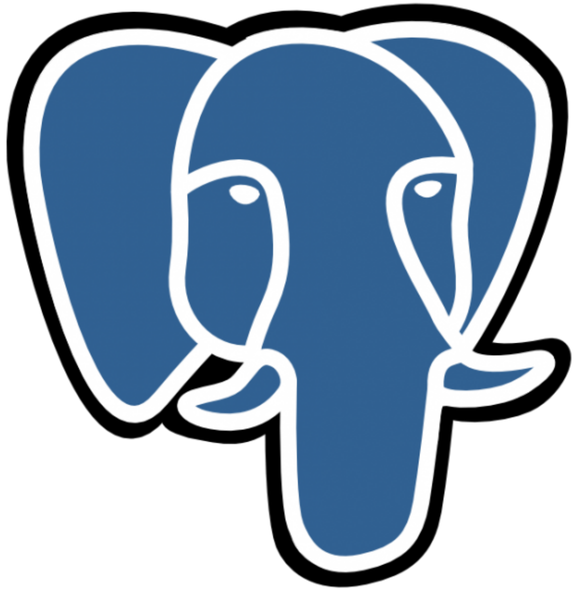


finance.db









PostgreSQL

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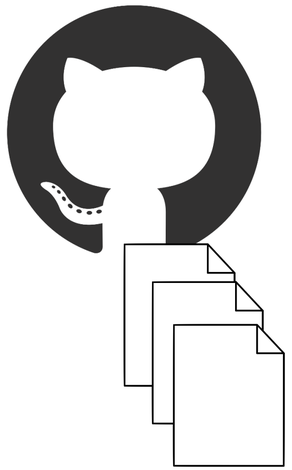

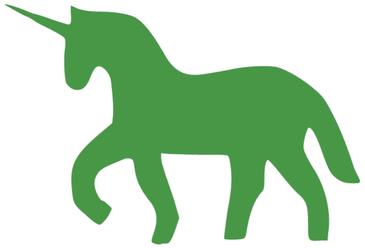

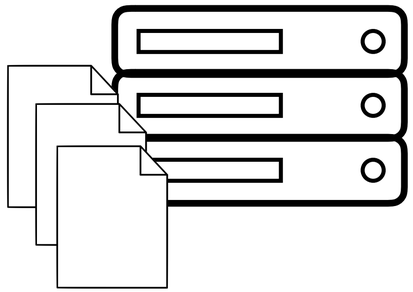

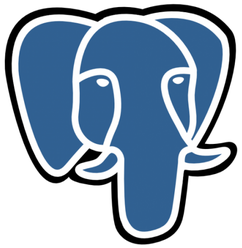

PostgreSQL

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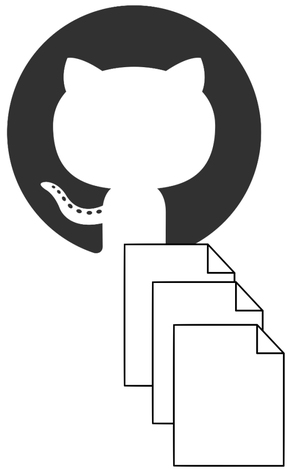

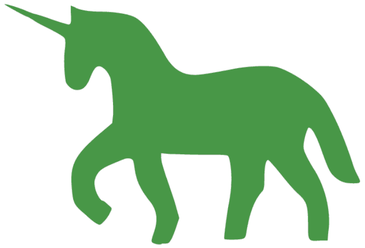

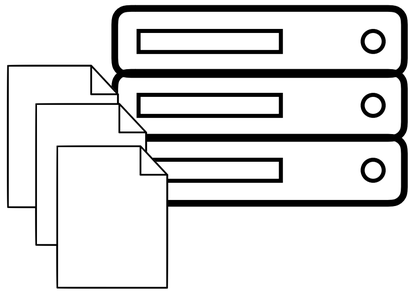

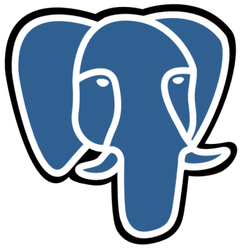

PostgreSQL

# Setting up PostgreSQL

- Create a new PostgreSQL database in Heroku's Add-Ons.
- Add tables to the database.
- Have your application use the PostgreSQL database instead of SQLite.

# From Harvard to Heroku

CSCI P-14300
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