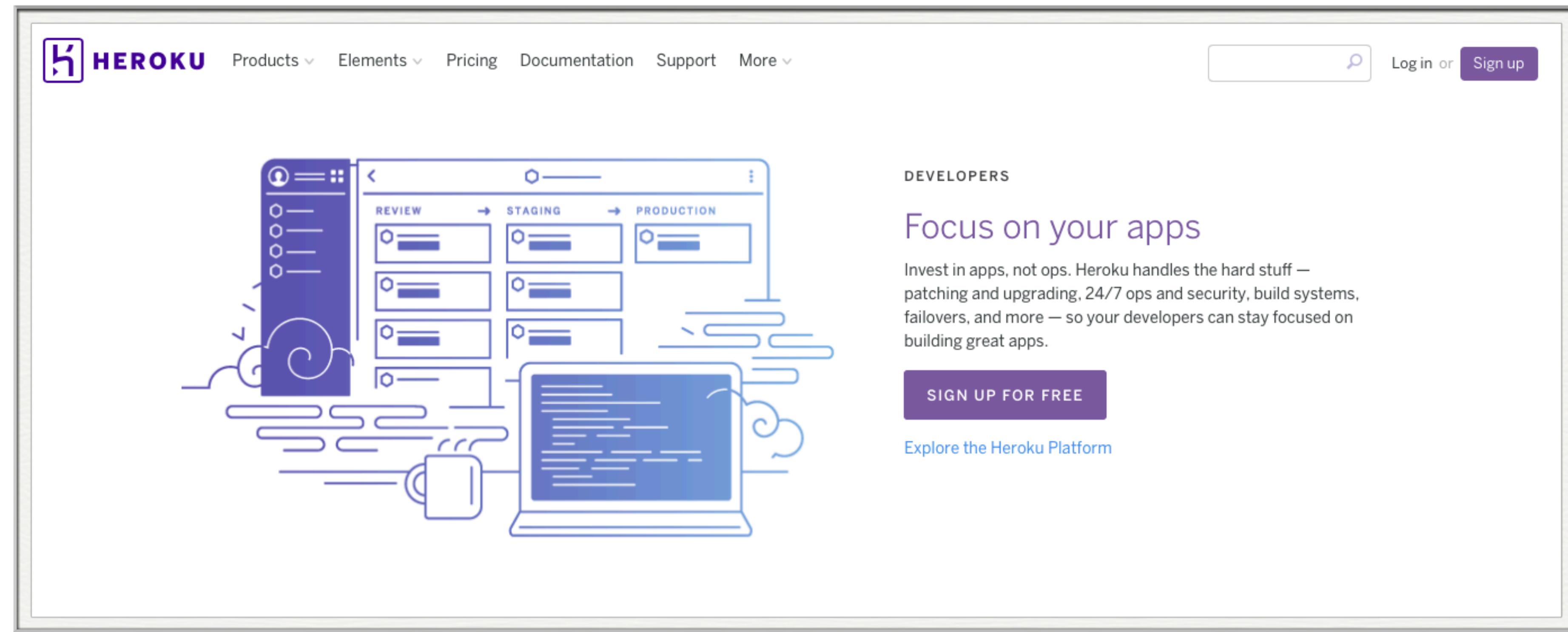


# Deployment

## Lab 05b Deployment



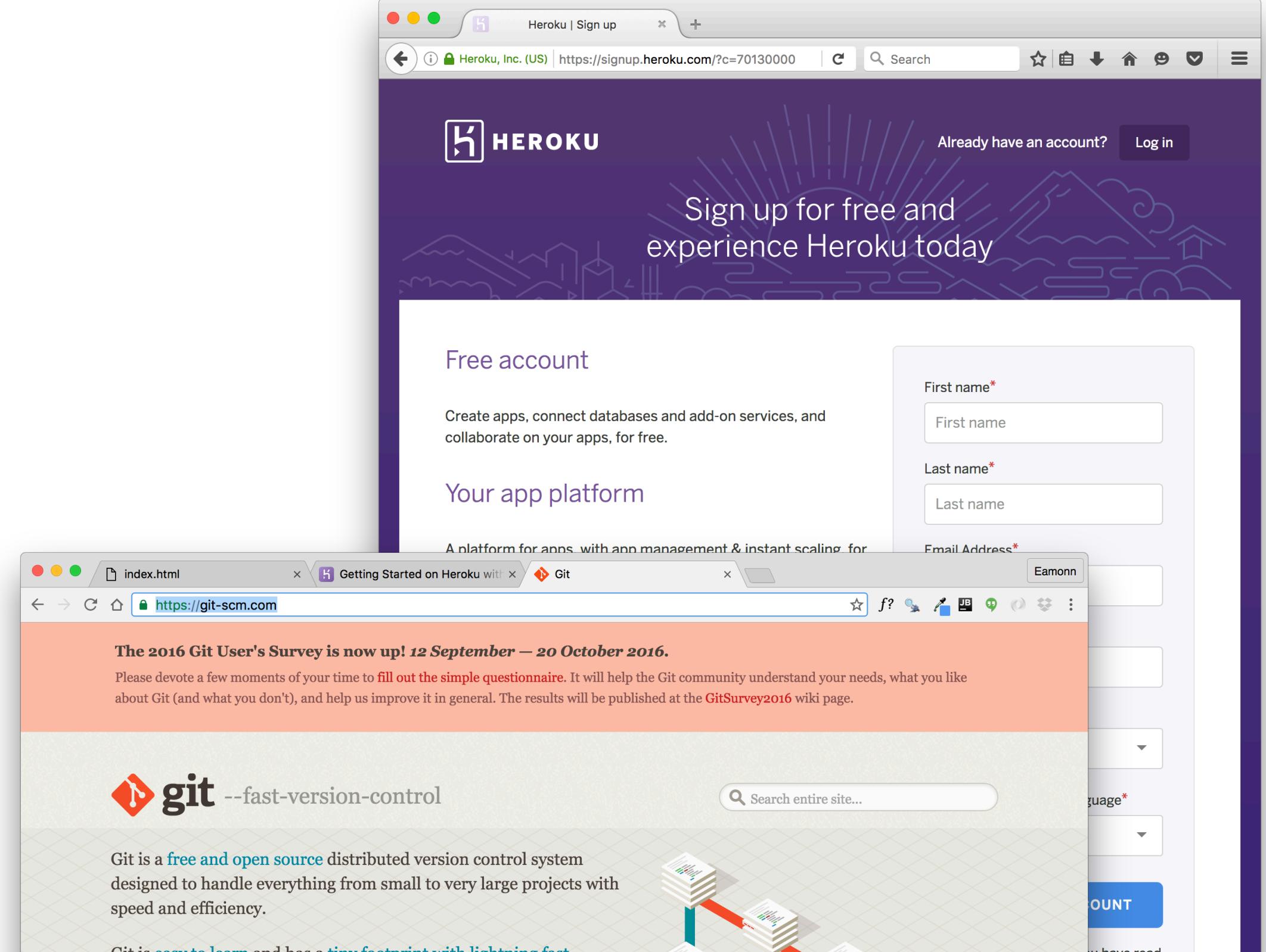
Deploy the application + the mongo database, to an application server.



- Platform as a Service (PaaS).
- Offers simplified node.js application deployment & management

# Requirements

- Sign up for a free account on heroku
- Install Git
- Install Heroku Command Line



## Set up

In this step you will install the Heroku Command Line Interface (CLI), formerly known as the Heroku Toolbelt. You will use the CLI to manage and scale your applications, to provision add-ons, to view the logs of your application as it runs on Heroku, as well as to help run your application locally.

 Download the Heroku CLI for...

Once installed, you can use the `heroku` command from your command shell.

Log in using the email address and password you used when creating your Heroku



PLANS + FEATURES PRICING DOCS + SUPPORT

SIGN UP

LOG IN

# Requirements

- Sign up for free mLab account

## Trusted. Loved. Most widely deployed.

mLab's Database-as-a-Service proudly powers over **350,000** MongoDB deployments on AWS, Azure, and Google



Thousands of companies trust mLab with their data



The  
New York  
Times



CONDÉ NAST



### MongoDB in your choice of cloud. It's this easy.



Provision MongoDB on-demand on AWS, Azure, or Google.

```
7 var mongo = require('mongodb').MongoClient;
9 var uri = mongodb://muser:mypass@ds02...
10 mongo.connect(uri, function(err, db) {
11   if(err) {
12     console.log("Error: unable to connect to data");
13     return;
14   }
15   // your code here
16 }
17
18
```

2 Paste its connection URI

Copy and paste the connection string into your code.



Focus on your product instead of operations.

## Deployment: 6 Steps

1. Create an application using the heroku command line
2. Provision a MongoDB database
3. Prepare application for deployment
4. Commit project to git
5. Push the application to heroku remote
6. Monitor the Heroku Logs

# 1: Create an application using the heroku command line

The screenshot shows the Heroku web interface. At the top, there's a purple header bar with the Heroku logo and a search bar labeled "Jump to Favorites, Apps, Pipelines, Spaces...". Below the header, the user is logged in under "Personal" and is viewing the "serene-brushlands-60288" application. The main navigation menu includes "Overview", "Resources", "Deploy", "Metrics", "Activity", "Access", and "Settings". The "Overview" tab is selected. Under "Installed add-ons", it says "\$0.00/month" and has a "Configure Add-ons" button. A message box states "There are no add-ons for this app" and provides a link to "Learn more". Under "Dyno formation", it also says "\$0.00/month" and has a "Configure Dynos" button. On the right side, there's a "Latest activity" section showing two recent events: a deployment and a build success, both performed by "edeleastar@gmail.com" on February 5 at 4:05 PM.

Now log in to your heroku account:

```
heroku login
```

This will open a browser to complete the login - and will report back on the command line that you are logged in successfully.

```
heroku create
```

This will respond with a new name in a few seconds:

```
Creating app... ⚡ calm-brushlands-29225
https://calm-brushlands-29225.herokuapp.com/ | https://git.heroku.com/calm-brushlands-29225.git
```

## 2: Create Mongo Database on MongoLab

- Create Database + Create Special User for database
- Extract ‘Connection String’

The screenshot shows the MongoLab interface for a database named 'donation'. At the top, there are connection instructions for the mongo shell and a MongoDB URI. Below this, a warning message states: 'Sandbox databases do not have redundancy and therefore are not suitable for production. Visit our [guide to running in production](#) for more info.' A navigation bar below includes tabs for Collections, Users, Stats, Backups, and Tools. The Collections section shows '[None at this time]'. The System Collections section lists 'system.indexes' with 0 documents and 0.00 KB size.

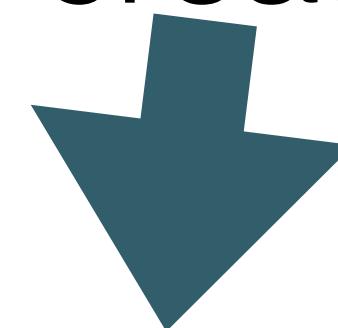
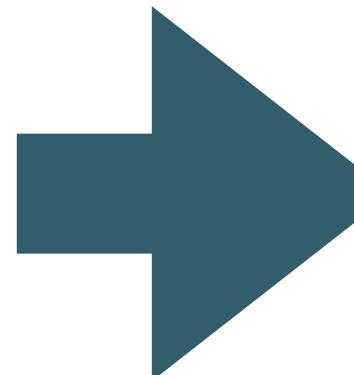
.env

```
# db=mongodb://localhost/donation
db=mongodb://donationuser:donationuser@ds055626.mlab.com:55626/donation
```

- Copy connection string into .env

### 3: Prepare application for deployment

- define ‘start’ script
- Change server creation in index.js



```
const server = Hapi.server({  
  port: process.env.PORT || 3000,  
});
```

```
{  
  "name": "donation-web",  
  "version": "1.0.0",  
  "description": "",  
  "main": "index.js",  
  "scripts": {  
    "start": "node index.js",  
    "test": "echo \\\"Error: no test specified\\\" && exit 1"  
  },  
  "author": "",  
  "license": "ISC",  
  "dependencies": {  
    "boom": "^7.3.0",  
    "dotenv": "^6.2.0",  
    "handlebars": "^4.0.12",  
    "hapi": "^18.0.0",  
    "hapi-auth-cookie": "^9.1.0",  
    "inert": "^5.1.2",  
    "joi": "^14.3.1",  
    "mais-mongoose-seeder": "^1.0.7",  
    "mongoose": "^5.4.7",  
    "vision": "^5.4.4"  
  },  
  "devDependencies": {  
    "prettier": "^1.16.0"  
  },  
  "prettier": {  
    "singleQuote": true,  
    "printWidth": 120  
  }  
}
```

## 4: Commit project to git

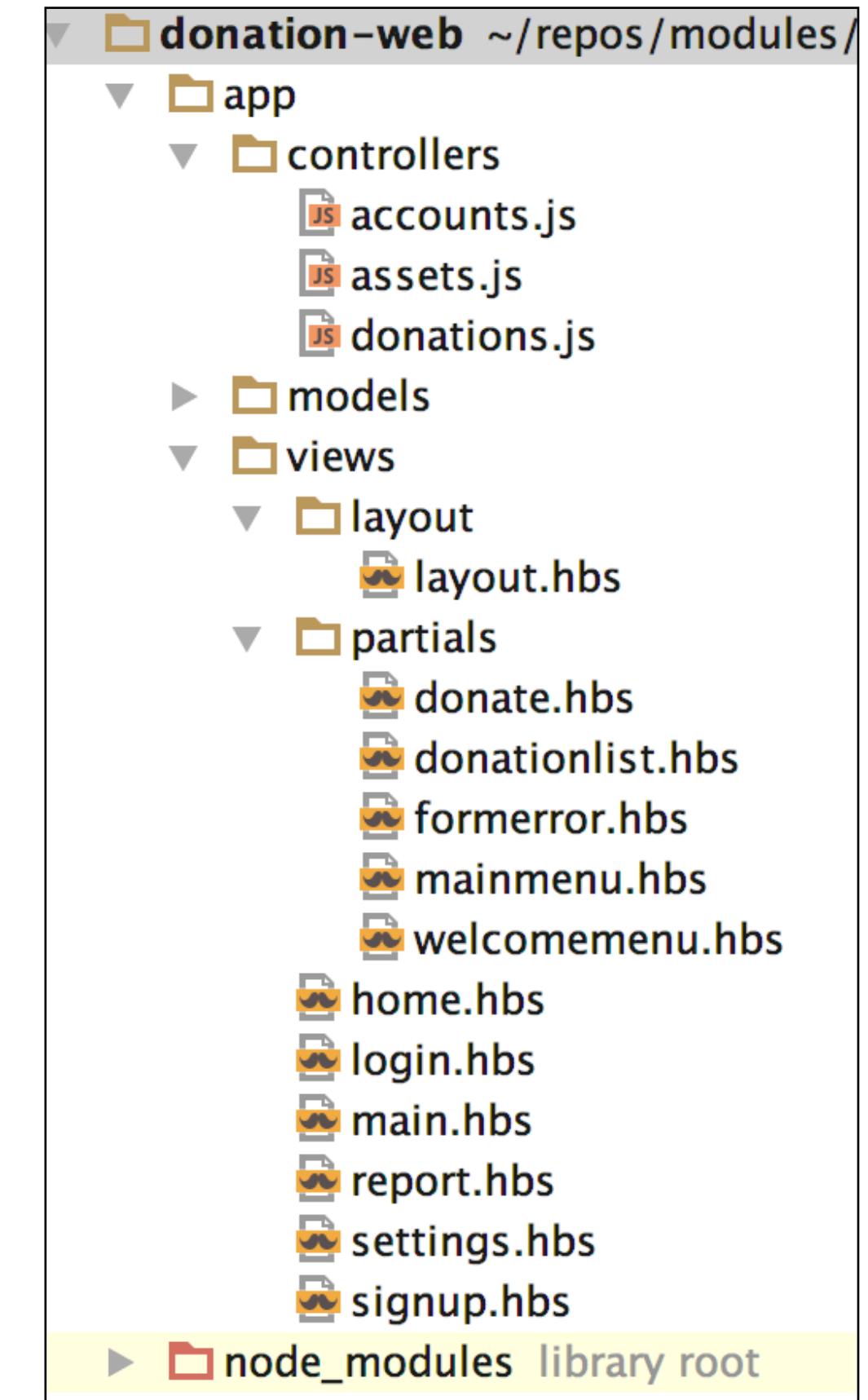
```
git init
```

```
git add .
```

```
git commit -m "first commit"
```

If project already in git,  
consider creating a separate  
project/repo just for heroku  
deployment

- add all files
- commit all files
- remove .env file



### .gitignore

```
.idea
node_modules
//.env
```

# 5: Push the application to heroku remote

```
git push heroku master
```

```
heroku open
```

- Use git to transmit app sources to heroku
- Browse to the deployed url

```
Counting objects: 240, done.  
Delta compression using up to 4 threads.  
Compressing objects: 100% (224/224), done.  
Writing objects: 100% (240/240), 528.80 KiB | 15.55 MiB/s, done.  
Total 240 (delta 106), reused 0 (delta 0)  
remote: Compressing source files... done.  
remote: Building source:  
remote:  
remote: -----> Node.js app detected  
remote:  
remote: -----> Creating runtime environment  
remote:  
remote: NPM_CONFIG_LOGLEVEL=error  
remote: NODE_ENV=production  
remote: NODE_MODULES_CACHE=true  
remote: NODE_VERBOSE=false  
remote:  
remote: -----> Installing binaries  
remote: engines.node (package.json): unspecified  
remote: engines.npm (package.json): unspecified (use default)  
remote:  
remote: Resolving node version 10.x...  
remote: Downloading and installing node 10.15.1...  
remote: Using default npm version: 6.4.1  
remote:  
remote: -----> Building dependencies  
remote: Installing node modules (package.json + package-lock)  
remote: added 74 packages from 63 contributors and audited 222 packages in 4.241s  
remote: found 0 vulnerabilities  
remote:  
remote: -----> Caching build  
remote: - node_modules  
remote:  
remote: -----> Pruning devDependencies  
remote: removed 1 package and audited 221 packages in 1.125s  
remote: found 0 vulnerabilities  
remote:  
remote: -----> Build succeeded!  
remote: ! This app may not specify any way to start a node process  
remote: https://devcenter.heroku.com/articles/nodejs-support#default-web-process-type  
remote:  
remote: -----> Discovering process types  
remote: Procfile declares types      -> (none)  
remote: Default types for buildpack -> web  
remote:  
remote: -----> Compressing...  
remote: Done: 21.1M  
remote: -----> Launching...  
remote: Released v3  
remote: https://serene-brushlands-60288.herokuapp.com/ deployed to Heroku  
remote:  
remote: Verifying deploy... done.  
To https://git.heroku.com/serene-brushlands-60288.git  
 * [new branch]      master -> master
```

## 6: Monitor the Heroku Logs

```
heroku logs --tail
```

```
2019-02-05T17:09:16.563323+00:00 heroku[router]: at=info method=GET path="/images/homer3.png" host=intense-ravine-98431.herokuapp.com request_id=2019-02-05T17:09:18.535939+00:00 heroku[router]: at=info method=GET path="/logout" host=intense-ravine-98431.herokuapp.com request_id=b5300470-e320-4f2d-88f558e4-5feb-4fd2019-02-05T17:09:18.656533+00:00 heroku[router]: at=info method=GET path="/" host=intense-ravine-98431.herokuapp.com request_id=88f558e4-5feb-4fd2019-02-05T17:09:18.772422+00:00 heroku[router]: at=info method=GET path="/images/homer.png" host=intense-ravine-98431.herokuapp.com request_id=1
```

## Connect Robo 3T to mLab

- The database we are now using is in the cloud - and it might be useful to be able to browse directly to it.
- For this url

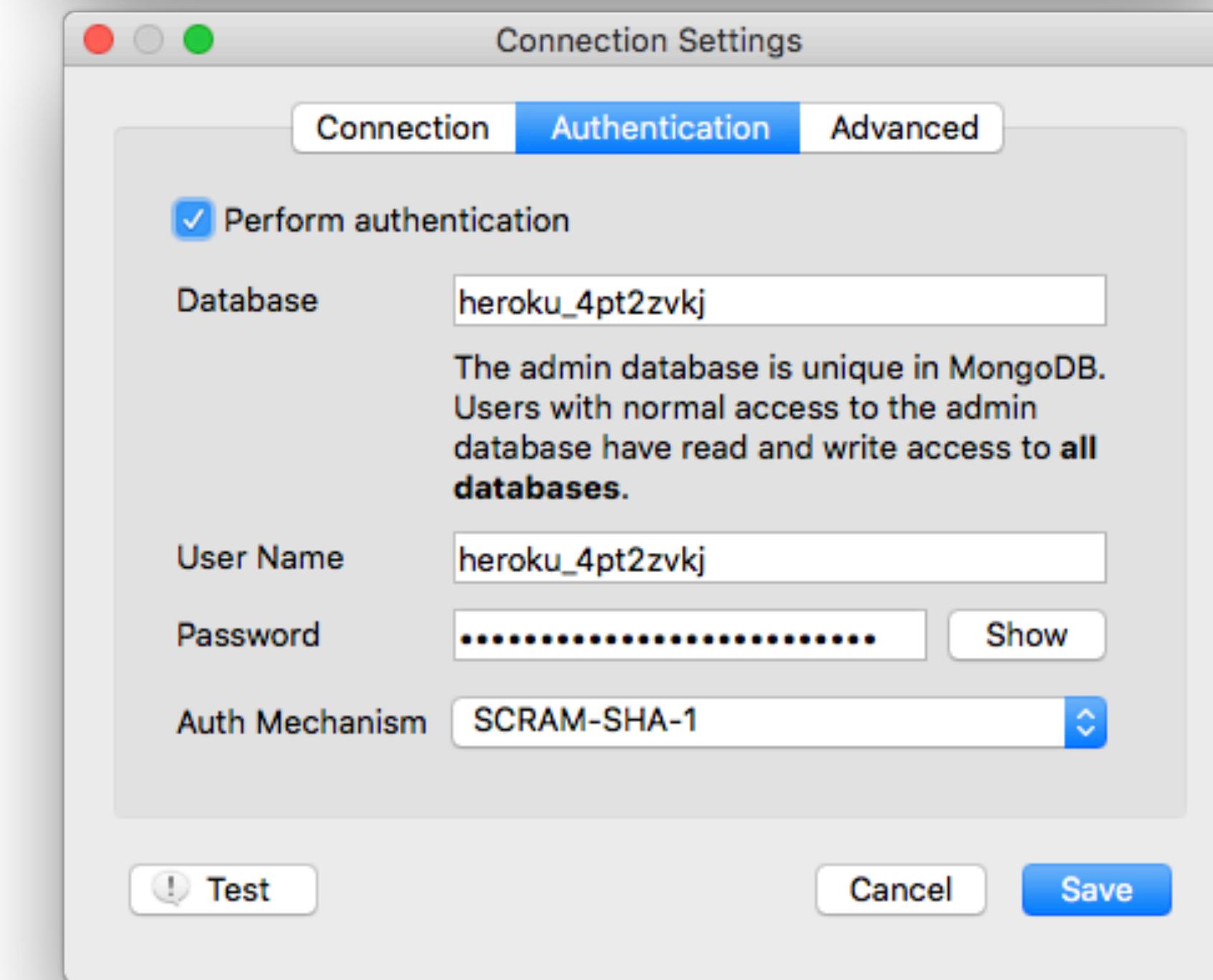
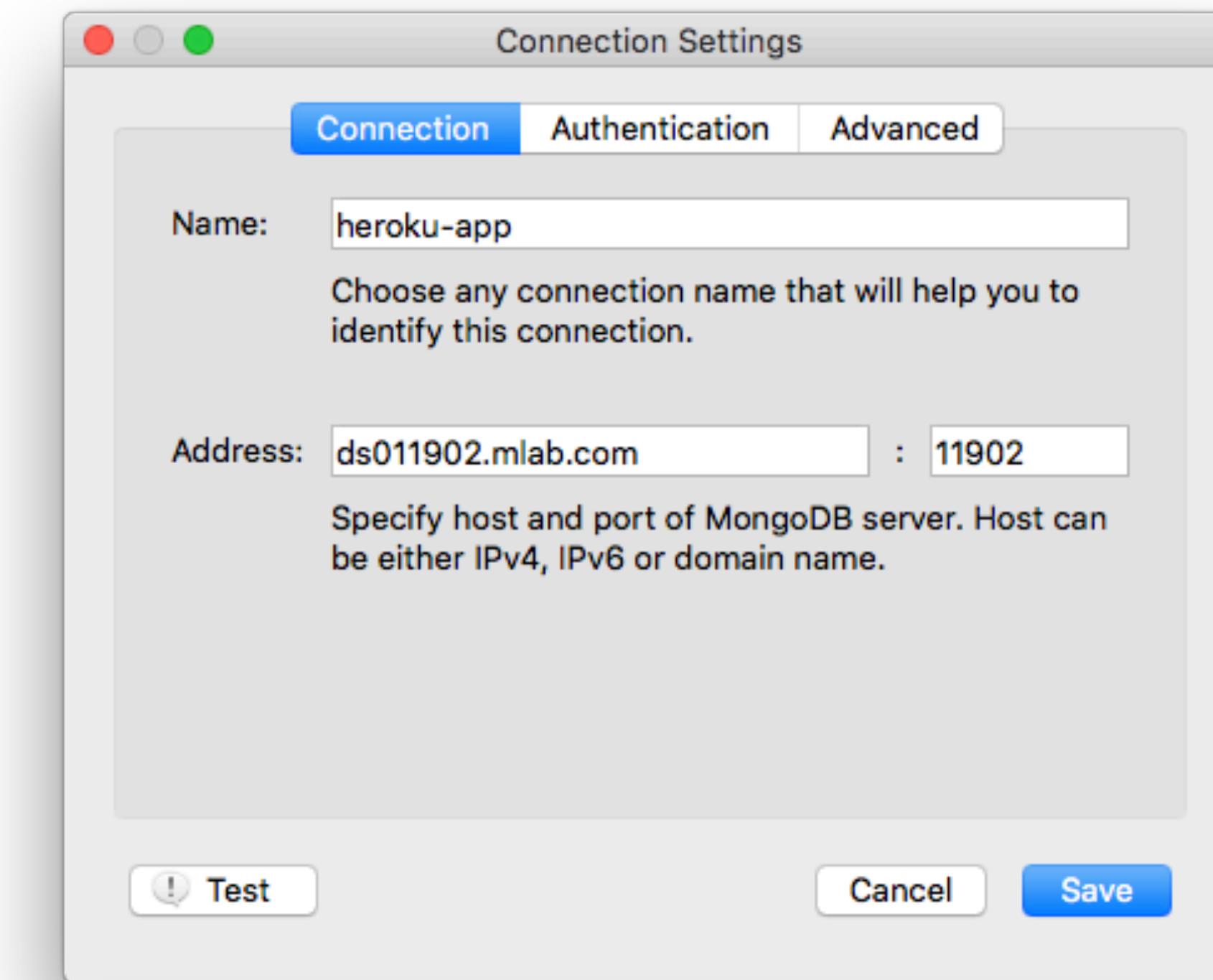
```
mongodb://heroku_4pt2zvkj:omev5e4sctvbiaa0i1t5cbstdj@ds011902.mlab.com:11902/heroku_4pt2zvkj
```

- This encodes the following connection settings:

|                                      |
|--------------------------------------|
| address: ds011902.mlab.com           |
| port: 11902                          |
| database: heroku_4pt2zvkj            |
| password: omev5e4sctvbiaa0i1t5cbstdj |

# Robo 3T Connection

```
address: ds011902.mlab.com
port: 11902
database: heroku_4pt2zvkj
password: omev5e4sctvbiaa0i1t5cbstdj
```



Robomongo 0.9.0-RC7

New Connection (2)

heroku-app (1)

heroku\_4pt2zvkj

Collections (3)

- System
- donations
- Indexes

users

Functions

Users

heroku-app ds011902.mlab.com:11902 heroku\_4pt2zvkj

db.getCollection('users').find({})

users 0.114 sec.

| Key                        | Value                            | Type     |
|----------------------------|----------------------------------|----------|
| 1 ObjectId("5725d5dd6...") | { 6 fields }                     | Object   |
| _id                        | ObjectId("5725d5dd680385110...") | ObjectId |
| firstName                  | homer                            | String   |
| lastName                   | simpson                          | String   |
| email                      | homer@simpson.com                | String   |
| password                   | secret                           | String   |
| _v                         | 0                                | Int32    |

Logs

# Deployment to Glitch

wit-hdip-comp-sci-2018... ▾ 66

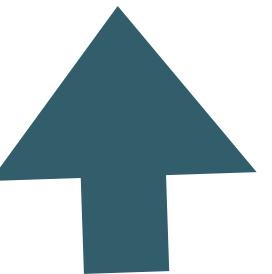
< New Project ✨

hello-webpage  
Your very own basic web page, ready for you to customize.

hello-express  
A simple Node app built on Express, instantly up and running.

hello-sqlite  
A simple Node app with a SQLite database to hold app data.

Clone from Git Repo



Clone new project directly from GitHub

wit-hdip-comp-sci-2018... ▾ Show Live app/controllers/accounts.js

Share + New File assets

app/controllers/accounts.js  
app/controllers/donations.js  
app/models/db.js  
app/models/donation.js  
app/models/user.js  
app/views/layouts/layout.hbs  
app/views/partials/donate.hbs  
app/views/partials/donationlist.hbs  
app/views/partials/error.hbs  
app/views/partials/mainmenu.hbs  
app/views/partials/welcomemenu.hbs  
app/views/home.hbs  
app/views/login.hbs  
app/views/main.hbs  
app/views/report.hbs  
app/views/settings.hbs  
app/views/signup.hbs  
public/images/homer.png  
public/images/homer2.png  
public/images/homer3.png  
public/images/homer4.jpeg  
public/images/homer5.jpg

dependencies:

- + boom 7.3.0
- + dotenv 6.2.0
- + handlebars 4.1.0
- + hapi 18.1.0
- + hapi-auth-cookie 9.1.0
- + inert 5.1.2
- + joi 14.3.1
- + mongoose 5.4.11
- + vision 5.4.4

devDependencies:

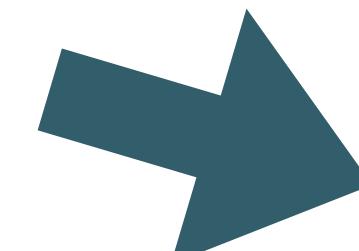
- + prettier 1.16.4

Total install time: 7635ms

(node:163) DeprecationWarning: current URL string parser is deprecated, and will be removed in a future to MongoClient.connect.

Server running at: http://33c7ca0f098c:3000

database connected to donation on ds055626.mlab.com



Monitor logs

Create .env file

