CITIZEN SCIENCE WEB CREATOR

Step by Step Guide

In this document, you find a step by step guide on how to set up, use and deploy your own citizen science web application.

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1.0 General information

The general information section explains in general terms the web application and the purpose for which it is intended.

This web creator tool is suitable for designing and deploying input forms with reference to the field of citizen science. This promotes information gathering through the deployment of dynamic web forms.

Please keep in mind that the functionality of this web application is entirely dependant on Heroku and MongoDB Atlas services.

1.1 Required Downloads/Sign-ups

Download and install the following:

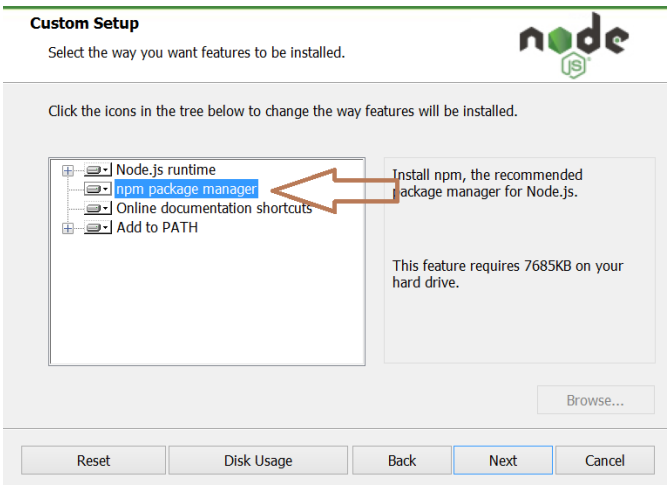
1. NodeJs - https://nodejs.org/en/download/
2. GitHub Desktop - https://desktop.github.com/

Sign-up for the following:

1. GitHub - https://github.com/
2. Heroku - https://heroku.com/
3. MongoDB Atlas - https://www.mongodb.com/cloud/atlas

1.2 Important note while installing NodeJs

When installing NodeJs, please make sure that you choose the second option named “npm package manager”, as shown in the image below. This will make sure both npm and node.js are installed on your computer.



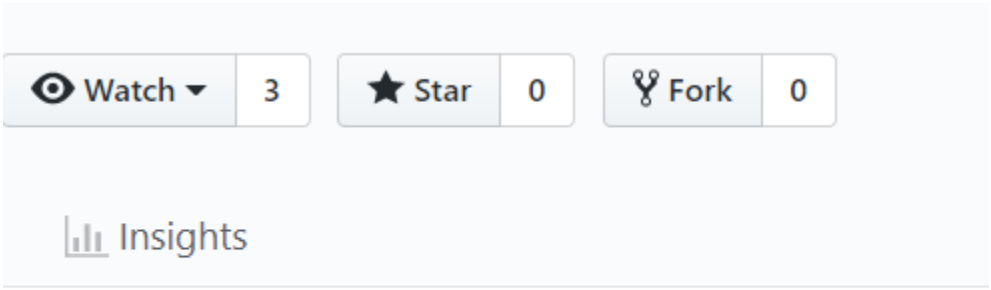
2.0 Forking GitHub repository to one's GitHub Account

Step 1

Visit GitHub through the following link https://github.com/ and make sure you are signed in.

Step 2

Visit the following link https://github.com/DomGarg/Citizen-Science-Web-Creator---Front-end and click the "Fork" button on the top right corner of the page, as shown in the image below. This will create a copy of the front-end repository used in the project and move it into your account.



Step 3

Repeat the previous step with the following link https://github.com/DomGarg/Citizen-Science-Web-Creator---Back-end. This will create a copy of the back-end repository used in the project and move it into your account.

*The front-end and back-end repositories are the working parts of the citizen science web application that will be deployed to the Heroku servers. More on this later.

3.0 Set up back-end and run web application

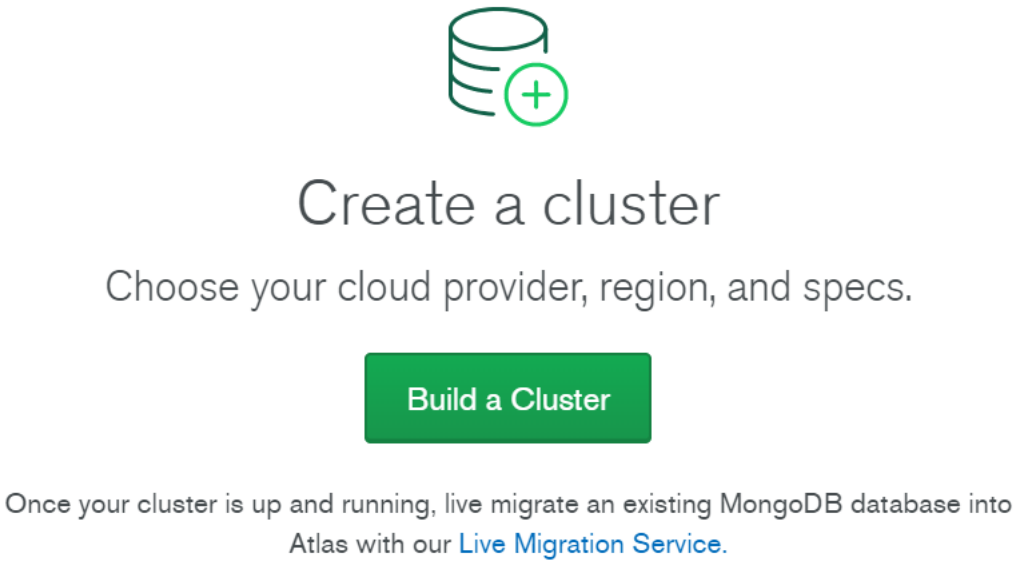
3.1 Set up MongoDB Atlas database and create collection

Step 1

Visit MongoDB Atlas through the following link https://www.mongodb.com/cloud/atlas and sign-in.

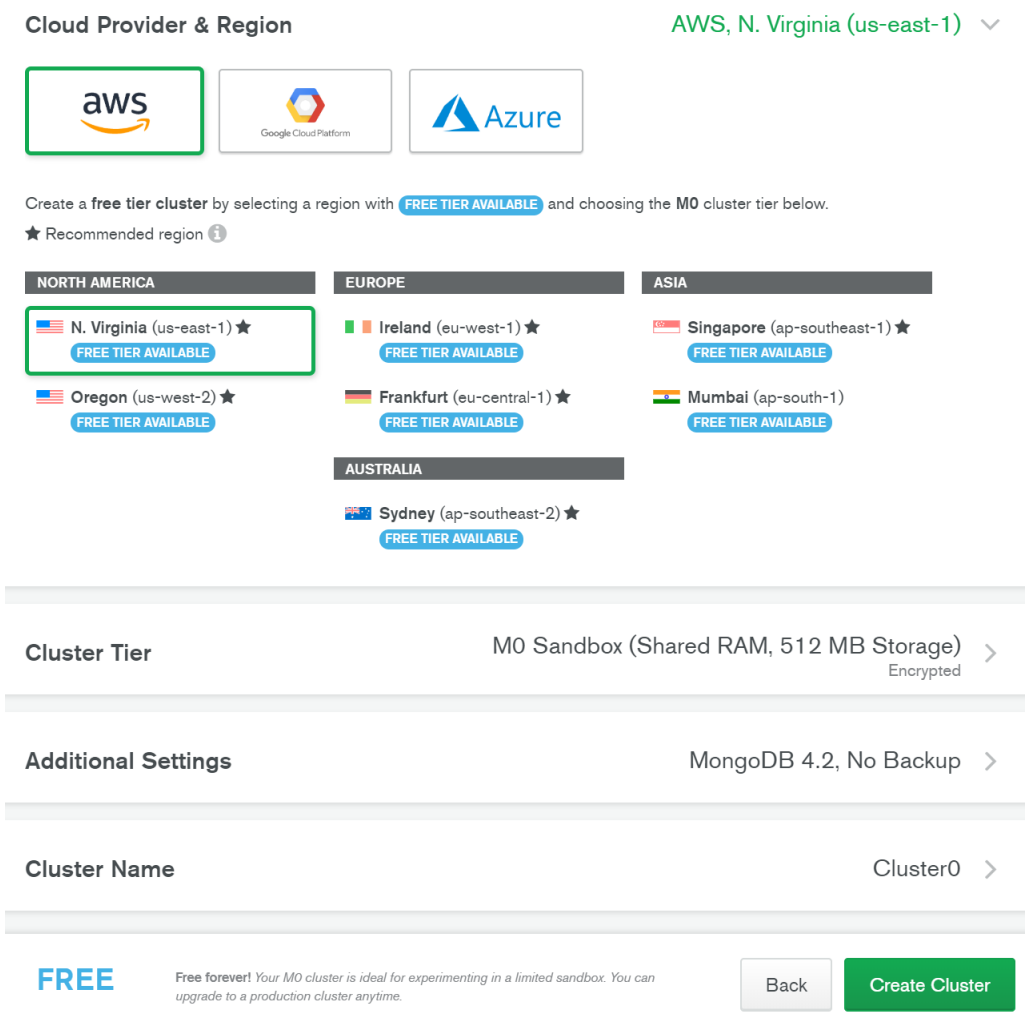
Step 2

Next, on the "Clusters" tab, click the button "Build a Cluster", as shown in the image below.



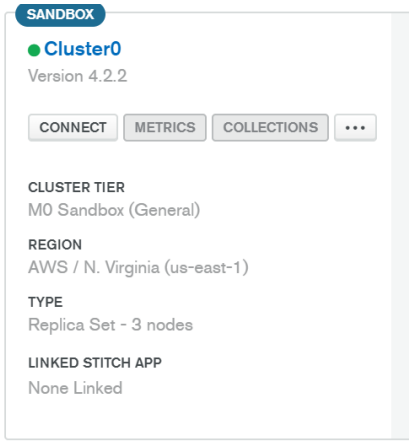
Step 3

From there, click on the free starter cluster option and continue through the creation page with the options shown in the image below or to your preference.



Step 4

From there, you will be redirected to the “Clusters” tab. You should see a cluster named “Cluster0”, click the “Connect” button as shown in the image below.

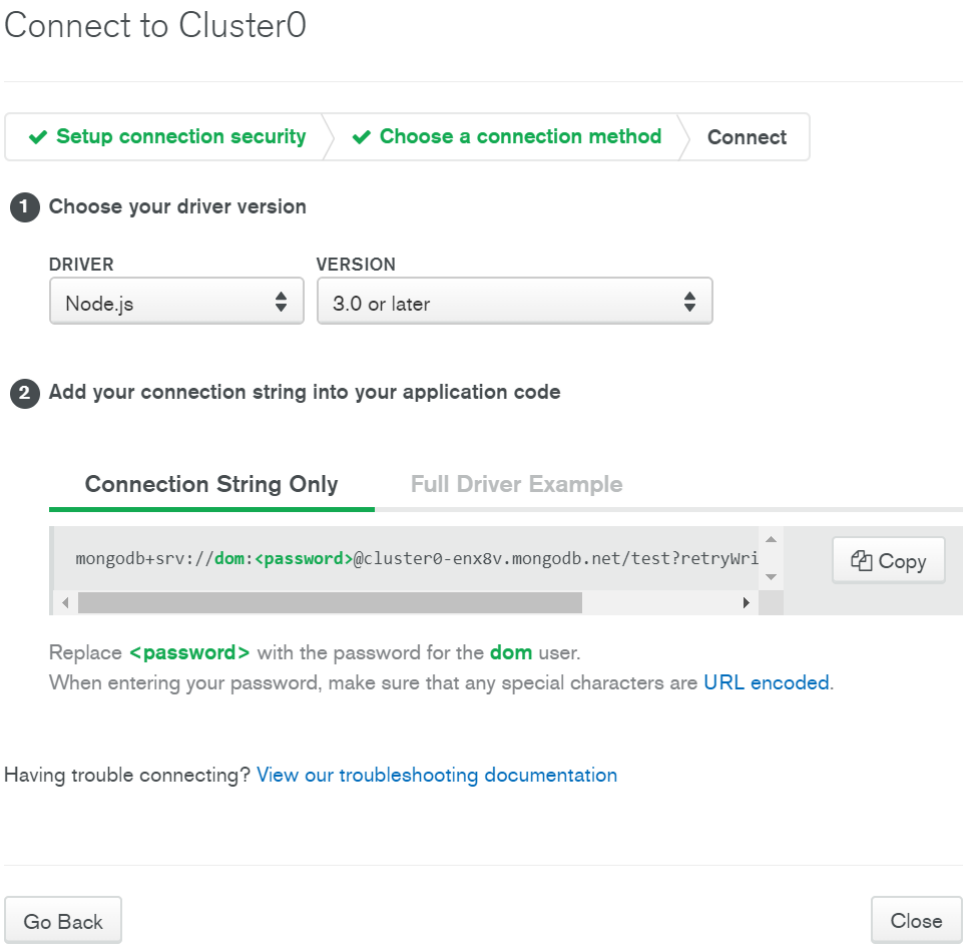


Step 5

A window will pop up that will require you to set up connection security. Follow the instruction to “Add Your Current IP Address” followed by inputting a username and password (keep this in mind) to create a MongoDB user. Once completed, click the button on the bottom right labeled “Choose a connection method”.

Step 6

The next window will pop up, proceed to click the second option labeled “Connect Your Application”. You will now see options for driver versions and a text box containing a connection string. Make sure the driver is set to “Node.js” and version “3.0 or later”, as shown in the image below. Now, copy the connection string using the “Copy” button or using Ctrl-C.

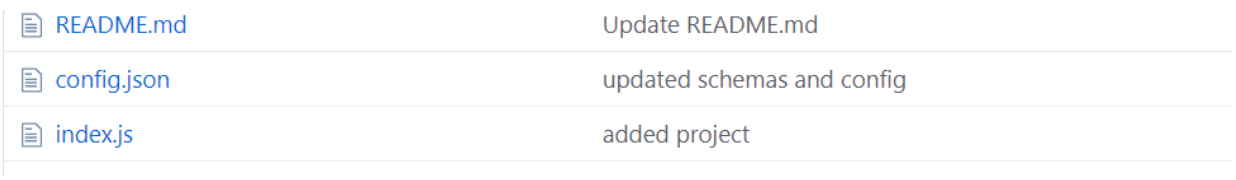


Step 7

Visit GitHub https://github.com/ and locate the forked Citizen-Science-Web-Creator---Back-End repository found by clicking your profile on the top right corner of the page and then clicking “Your Repositories”. Make sure the repository is under your profile name.

Step 8

Locate the file “config.json” as shown in the image below and click it. On the right, click the edit button represented by the pencil icon.



Step 9

Use Ctrl-V to paste the connection string copied from MongoDB Atlas in between the quotation marks found after the “connectionString” label. The result should look like the image below. From there, replace the word <password> in the connection string with the password used when creating the MongoDB user in step 5. At the bottom of the page, click “Commit Changes”.

*Make sure not to include the “<” and “>” symbols in the final string. (Example: mongodb+srv://dom:admin1@cluster0…..)

```
{
    "connectionString": "mongodb+srv://dom:<password>@cluster0-enx8v.mongodb.net/test?retryWrites=true&w=majority",
```

Step 10

Go back to the MongoDB Atlas Home page, click the "Network Access” tab on the left followed by the “+Add Ip Address” on the right. It will open up a window and from there, click the “Allow Access From Anywhere” button to allow database access from admin accounts located anywhere. Click “Confirm” to finish.

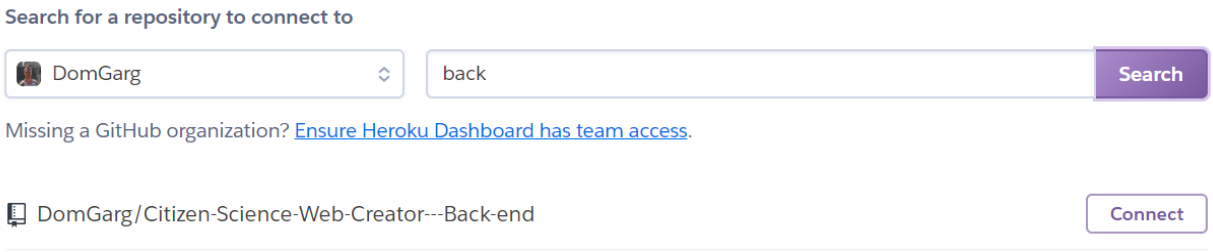
3.2 Deploy the back-end portion of the application

Step 1

Visit Heroku https://heroku.com/ and log-in. On your personal dashboard, click the button labeled “Create new app”. Name your application (this name is not necessarily important) and choose the United States region, then click “Create”.

Step 2

On your app page, under “Deployment Method”, click the GitHub option. Proceed to connect your GitHub account and then in the search bar, type in “back” and click “Search”. You will be presented with the back-end repository, as shown in the image below. Click “Connect” on the repository with Back-end listed in its name. It should take a few seconds to connect.

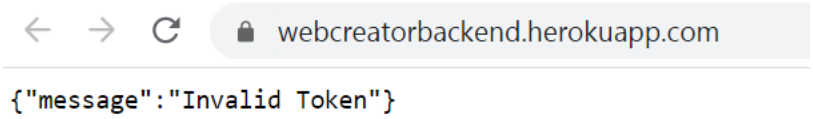


Step 3

Scroll down to the bottom of the page and under “Manual Deploy”, click the button labeled “Deploy Branch”. You should see a console log show. This process will take around 1 minute to complete. Once completed, click “View”.

Step 4

You will see a new web page pop up with information, as shown in the image below. Keep the link to this page in mind or copied somewhere because it will be used later.



3.3 Downloading project files onto your local computer

Step 1

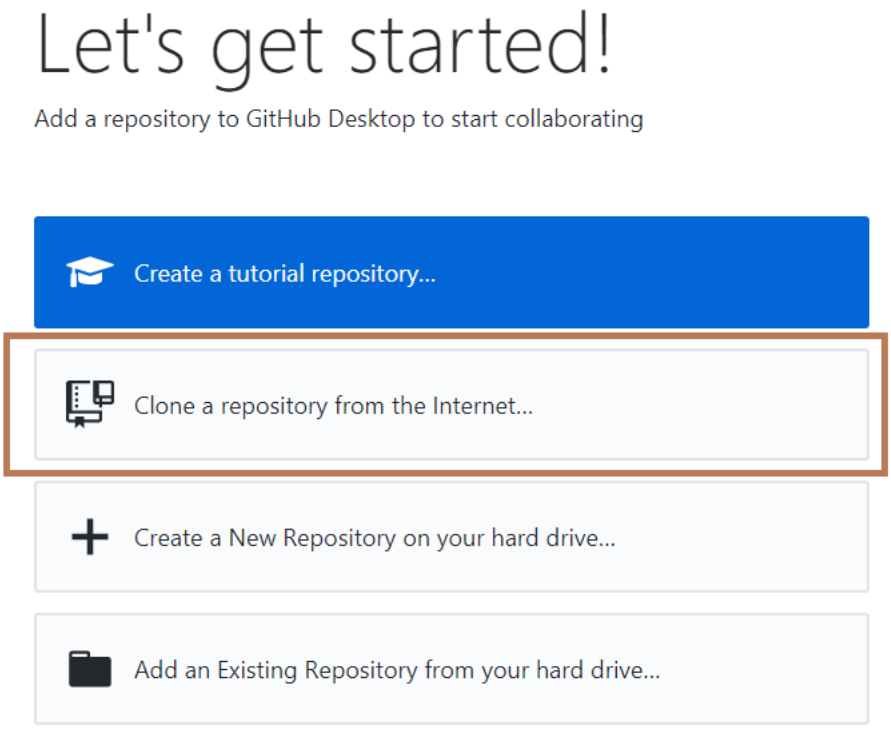
Locate GitHub Desktop (1.1 Required downloads) on your computer and run it.

Step 2

Log-in using your GitHub credentials.

Step 3

From there, you will see an introduction page with multiple options/buttons. Click the second button with the label “Clone a repository from the Internet”, as shown in the image below.



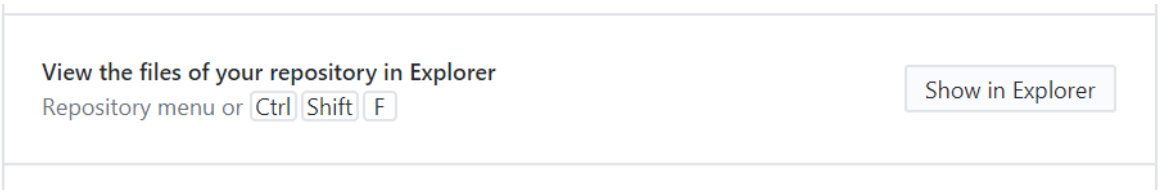
Step 4

You will see a pop up come up with a list of your repositories on your GitHub profile. Select the GitHub repository called “Citizen Science Web Template Front-End” and click “Clone”.

3.4 Locate and run web application

Step 1

On GitHub Desktop, with your Citizen-Science-Web-Creator---Front-End repository opened, click the “Show in Explorer” button to locate the project on your local computer, as shown in the image below. Locate and run the CitizenScienceWebCreator file. Give it a few seconds to open. Make sure to NOT close the black console window that pops up.



Step 2

Once the application is opened, locate the “Make Edits” button on the main window of the application and click it. From there, another window will pop up. Click the “Add Back End URL” button and paste the link (copied from section 3.2, step 4) into the empty line edit. Click “Save Changes”.

Step 3

Exit the current window by using the “Close” button to get back to the main window. Locate the “Install Package” button on the main window of the application and click it. Wait at least 1 minute before moving to the next step.

Step 4

Locate the “Open in Web Browser” button on the main window of the application and click it. Please wait while it starts.

Step 5

Allow enough time for the web application to open a tab in your default browser. In this tab, you will observe a login screen.

3.5 Create an admin account

Step 1

Click the “Register” button and proceed to put in personal credentials. When Admin Access Code is reached, enter “admin1234” and proceed to submit. From there, you will be redirected to the login page where you can login with these credentials. To improve security of the collected data, please proceed to Step 2.

Step 2

With the main window of the application open, click the “Make Edits” button to open another window.

Step 3

From there, click the “Change Admin Code” button which brings you to a window with an input line and save button. Proceed to type in your custom admin code and save. This will only allow users with this specific admin code to access all the data submitted to the database.

Step 4

Proceed to log-in.

4.0 Make edits to web application

4.1 Make edits to input form

Step 1

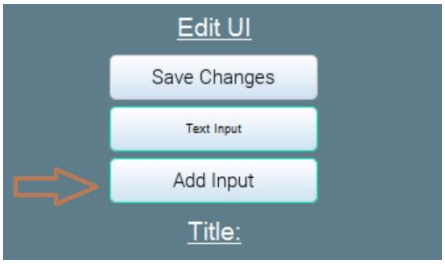
On the main window of the application, click the “Make Edits” button to open another window.

Step 2

From here, click on the “Edit Interface” button which brings you to a window with multiple options.

Step 3

Now, you can add inputs to the form using the dropdown button to select an input and then clicking the “Add Input” button as shown in the image below. To delete an input, click on the “X” button located beside the input options.



Step 4

To see the changes you made, click on the “Save Changes” button as shown in the image below. This will refresh the web page tab and show the new changes to the input form.

Step 5

To make any font/color changes to the input form, in the “Make Edits” window click on the “Style Form” button to explore these options.

4.2 Make edits to web page

Step 1

On the main window of the application, click the “Make Edits” button to open another window.

Step 2

From here, you will see buttons such as “Change Lower Image” and “Change Lower Text”. These correspond to changes that can be made to the lower section of the web page.

Additionally, there is a button “Change Background” which corresponds to the background image behind the input form. Note that when pasting an image link, be sure that it is large enough to the fit the entire background (preferably 1920x1080 pixels).

5.0 Deploy the web application

5.1 Push changes to repository

Step 1

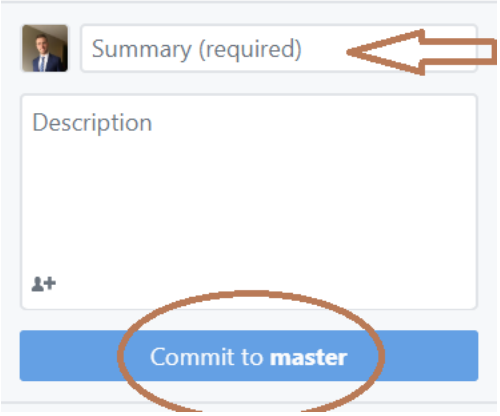
If not running already, locate GitHub Desktop on your computer and run it.

Step 2

Log-in if not already logged in.

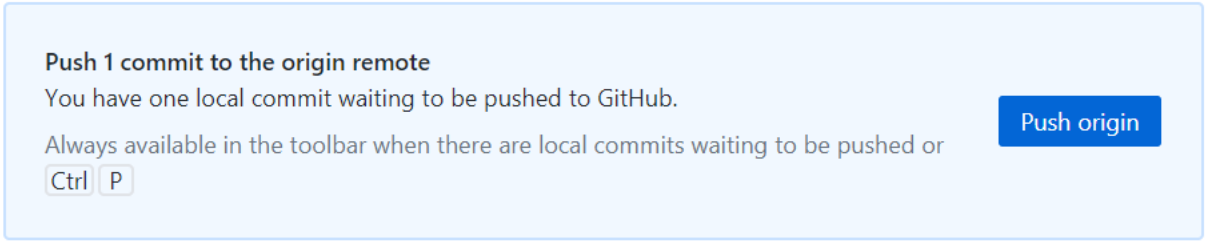
Step 3

From there, you should be redirected to your Citizen-Science-Web-Creator-Front-end repository and on the left, there should be a list of changes made that you are going to push back to GitHub. To do this, on the bottom left type anything (Ex: “Update”) in the “Summary (required)” text box and then click the button labelled “Commit to Master”, as shown in the image below.



Step 4

Now, you should see a light blue highlighted box appear in the middle of the window. Inside this box, click the blue button labelled “Push origin”, as shown in the image below.



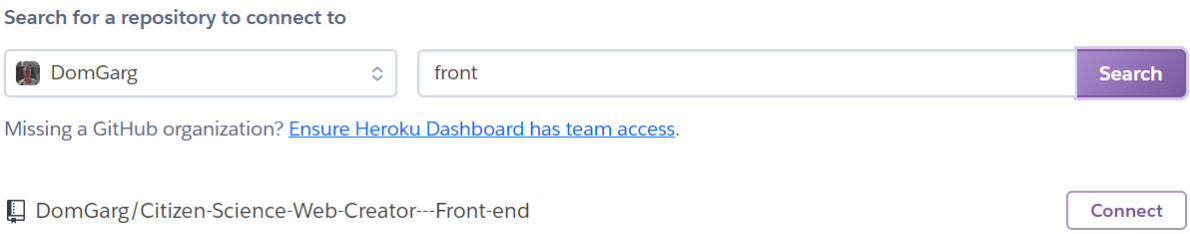
5.2 Deploy the front-end portion of the application

Step 1

Visit Heroku https://heroku.com/ and log-in, if not already logged in. On your personal dashboard, click the button labeled “New” and then click “Create new app”. **Name your application** (this name will be shown in the link you send out) and choose the United States region, then click “Create”.

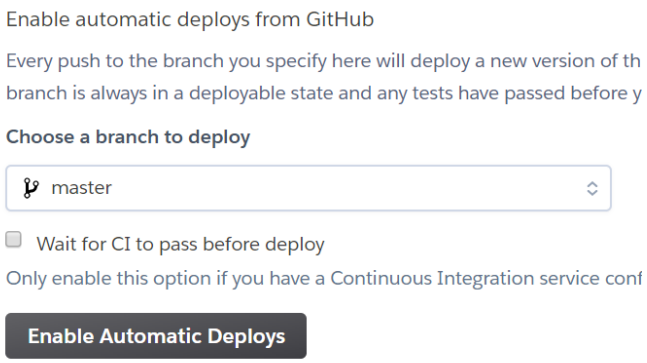
Step 2

On your app page, under “Deployment Method”, click the GitHub option. Proceed to connect your GitHub account and then in the search bar, type in “front” and click “Search”. You will be presented with your front-end portion, as shown in the image below. Click “Connect” on the repository with Front-end listed in its name. It should take a few seconds to connect.



Step 3

Scroll down and under “Automatic deploys”, click the button labeled “Enable Automatic Deploys”, as shown in the image below.



Step 4

Scroll down to the bottom of the page and under “Manual Deploy”, click the button labeled “Deploy Branch”. You should see a console log show. This process will take around 1 minute to complete. Once completed, click “View”.

Step 5

You will see the web application pop up in another tab. The link to this will be the link you send out for others to register, login and fill out the input form you just designed!

Step 6

To view data submitted, you need to log-in with your admin account and click the “All History” tab at the top of the page. From there, you can view the data or download as a CSV.

6.0 Making edits to your web application later

Step 1

Repeat steps 1, 4 and 5 in section 3.4.

Step 2

Repeat steps in section 4.0 to make edits to your web page and input form.

Step 3

Repeat all steps in section 5.1 to push changes to your web application. Since you check marked the option to “Enable Automatic Deploys” on Heroku, pushing changes should trigger your web application to automatically update. This can take a couple of minutes so give it some time.

If you notice the changes were not reflected on your web application, proceed to section 5.2, visit the Heroku website and go through steps 4-6.