# App Feature: Deploying the app

Topics to covered:

- What is hosting?
- Run a project locally : Backend App - http://localhost:8080
- Creating Repositories in Github
- Intro to Heroku
- Intro to Atlas

What is hosting?

- Hosting means making our application available to the users via the internet.
- Many cloud service providers help us rent their server where our application code runs 24/7.
- These services are provided based on a free trial and price-based model for individuals and organizations. For example, Amazon AWS, Heroku, Microsoft Azure, Google Cloud, etc.

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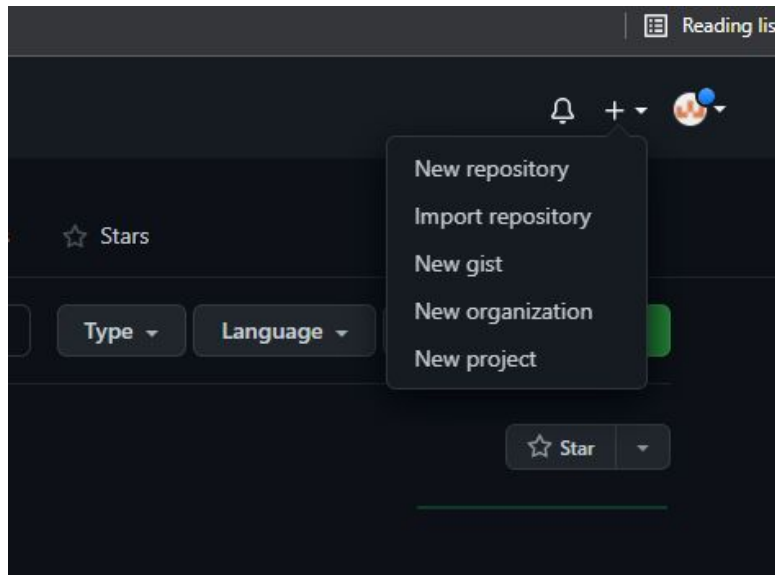# Run a project locally : Backend App - http://localhost:8080
npm start
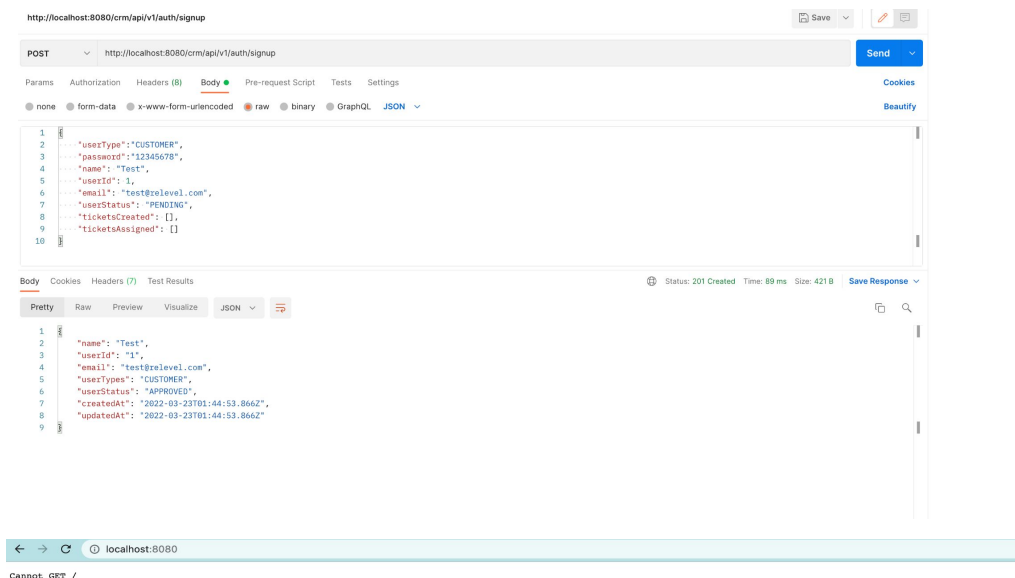
Creating Repositories

Using Web Interface:

- Go to Repositories click on "New" or on the "+" icon in the top-right corner.
- Click on New repository

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Name the repo, create it.

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 ***

Gtgstg ▾   /   crm-backend   ✓

Great repository name~~s are short and memorab~~le. Need inspiration? How about **bookish-couscous**?

crm-backend is available.

Description (optional)

[   ]

◉ 📖 **Public**
       Anyone on the internet can see this repository. You choose who can commit.

○ 🔒 **Private**
       You choose who can see and commit to this repository.

Initialize this repository with:
Skip this step if you're importing an existing repository.

☐ **Add a README file**
       This is where you can write a long description for your project. Learn more.
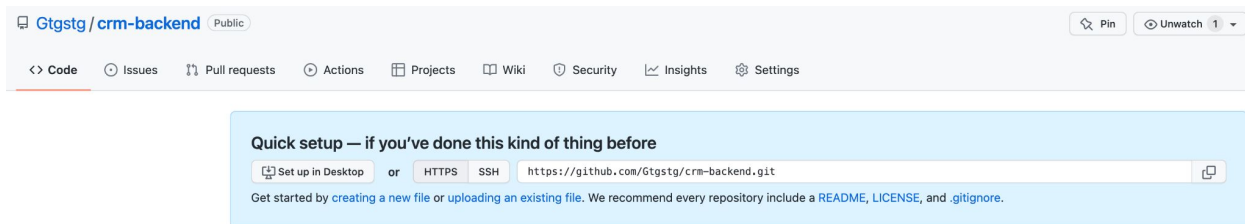
☐ **Add .gitignore**
       Choose which files not to track from a list of templates. Learn more.

☐ **Choose a license**
       A license tells others what they can and can't do with your code. Learn more.

Create repository

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Clone it to local, open cmd in the desired directory and write command
git clone <urlname>

If you have existing code in the local machine that you want to push to Github it can be done by pasting the folders/files in this cloned directory and we can commit and push the files to the remote repo, using command line.

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Using the Command line:

- Create a directory in local or open cmd for the root directory of an existing project .

- Type git init this will make our current directory as a local git repository.

- We can add and commit the existing project files to the remote repository.

- Type **git add .** (to add all the files) or just **git add <file_name>** you want to push.
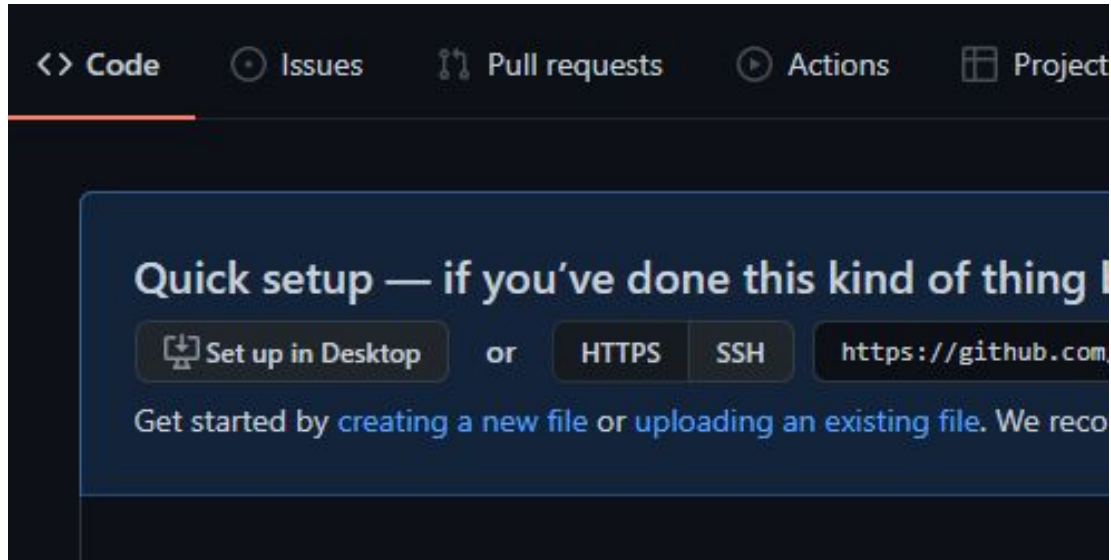
Using the Command line:

- Type **git commit -m <commit message>** where commit message is a string that informs why this commit happens and its purpose.

- Now we have to connect it to GitHub:
  git remote add origin
  git@github.com:username/<repo_name>

- Finally, push using: git push origin master.

Using the Github desktop:
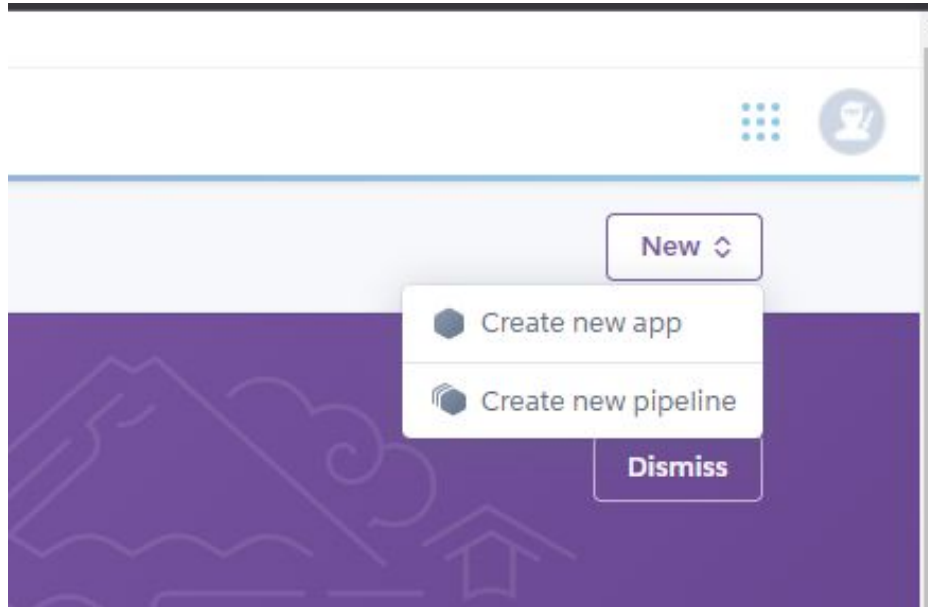
- To create a new repo Click on Set up in Desktop.

Intro to Heroku

Heroku is a cloud platform that helps developers maintain, build, deliver, and scale apps.

Deploy Backend App:

- Create an account on Heroku, (nothing much here just fill the prompted details and verify account for specified email id).

- Download Heroku CLI: https://devcenter.heroku.com/articles/heroku-cli#download-and-install

- Go to the Heroku website https://dashboard.heroku.com/apps and log in. After login, click on "New." and click "Create new app".

- We will be deploying our backend first.
- The name must be unique, and click on Create app.

Create New App

App name

relevel-crm-backend ✓

relevel-crm-backend is available

Choose a region

🇺🇸 United States

Add to pipeline...

Create app

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- Connect to GitHub now, it will prompt for authorization if Github is not already connected to Heroku

- Do manual deployment, then.

App connected to GitHub

Code diffs, manual and auto deploys are available for this app.

████████████████████████████████ Disconnect...

-○- Releases in the activity feed link to GitHub to view commit diffs

Automatic deploys

Enables a chosen branch to be automatically deployed to this app.

You can now change your main deploy branch from "master" to "main" for both manual and automatic deploys, please follow the instructions here.

Enable automatic deploys from GitHub

Every push to the branch you specify here will deploy a new version of this app. Deploys happen automatically: be sure that this branch is always in a deployable state and any tests have passed before you push. Learn more.

Choose a branch to deploy

⎇ main   ⌄

☐ Wait for CI to pass before deploy
Only enable this option if you have a Continuous Integration service configured on your repo.

Enable 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

⎇ main   ⌄   Deploy Branch

photofunny

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- It will start the deployment process. Once done click on view:

Your app was successfully deployed.

View

- This is our backend page, notice that our page has a domain name now.

Cannot GET /

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Intro to MongoDB Atlas

MongoDB Atlas is a multi-cloud database service by the same people that build MongoDB. Atlas simplifies deploying and managing your databases while offering the versatility you need to build resilient and performant global applications on the cloud providers of your choice.

Why do we need this?
So, Now our app is deployed but it will not work. As there is no database there to support our app on heroku. Also, heroku have add-ons that provides mongoDB but it is not free now.
So, we are using MongoDb Atlas because we can get free storage which will be useful to run our application.

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Changes to make mongoDb work

First login with https://account.mongodb.com/account/login

- Choose free plan

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- ## Create a shared Cluster

- ## Create user

Edit User: crm-admin@admin

Update a database user to grant an application or user, access to databases and collections in your clusters in this Atlas project. Granular access control can be configured with default privileges or custom roles. You can grant access to an Atlas project or organization using the corresponding Access Manager 🔗

Authentication Method

| Password | Certificate | AWS IAM (MongoDB 4.4 and up) |

MongoDB uses SCRAM as its default authentication method.

Password Authentication

crm-admin

Edit Password

Database User Privileges

Configure role based access control by assigning database users a mix of one built-in role, multiple custom roles, and multiple specific privileges. A user will gain access to all actions within the roles assigned to them, not just the actions those roles share in common. **You must choose at least one role or privilege.** Learn more about roles.

Built-in Role   1 SELECTED ⌃
Select one built-in role for this user.

Atlas admin ▾

Custom Roles   ⌄
Select your pre-defined custom role(s). Create a custom role in the Custom Roles 🔗 tab.

Specific Privileges   ⌄
Select multiple privileges and what database and collection they are associated with.
Leaving collection blank will grant this role for all collections in the database.

Restrict Access to Specific Clusters/Data Lakes

Enable to specify the resources this user can access. By default, all resources in this project are accessible.   OFF

- Make a User and set IP to access from anywhere.

- Heroku add Mongodb configs

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.

MONGODB_URI   ample_mflix?retryWrites=true&w=majority"   Add
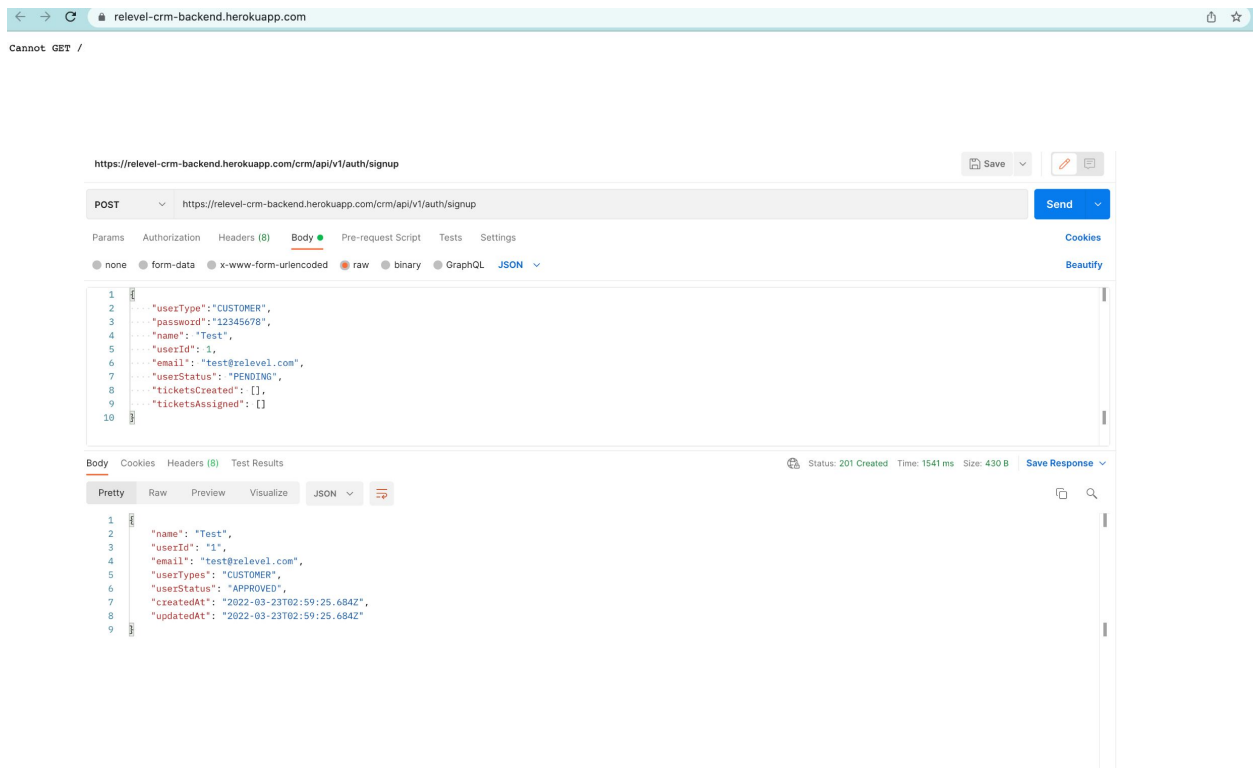
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- Changes for DB in code.

```
module.exports = {
    DB_NAME: "crm_db",
    DB_URL:  process.env.MONGODB_URI || "mongodb://localhost/crm_db"
}
```

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- **Check for working code**

MCQs

1. What IP do we have used to access from everywhere?
   a. 127.0.0.1
   b. 0.0.0.0/0
   c. relevel-crm-backend
   d. None of the above

2. What access permission we have required for Mongodb?
   a. Read and write to any database.
   b. Only read permission.
   c. Atlas admin
   d. None of the above.

3. Where to add configs in Heroku?
   a. Deploy -> configs
   b. Deploy -> Config Vars
   c. Setting -> configs
   d. Setting -> Config Vars

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4. Can Heroku addons also be used to connect with databases?
   a.   No.
   b.   Yes

5. Which branch is used for deployment from GitHub to Heroku?
   a.   master
   b.   We can choose.
   c.   origin
   d.   None of the above.

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   a.   master
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   c.   origin
   d.   None of the above.

Practice/HW

- Create a new user database user with only read access.
- Try to add an API that will show a welcome message on /GET and deploy it.

Thank you