



Embrace Opportunity



Software Engineering Day 15

Finalising Capstone Project, Presentation
Practice & Tips

jX



Today's Overview

- Introduction
- Finalising Capstone Project.
- Preparing for Presentations.

Introduction

Finalising Capstone Project,
Presentation Practice & Tips

Introduction

- Today will be focusing on finalising Capstone Project and everything involved in presenting it in the next class.
 - Reminder:
 - Project Requirements and Expected Outcome
 - Deployment:
 - Deploy Capstone Project
 - Workshop:
 - Finalising Capstone Project.
 - Preparing for Presentations:
 - Tips
 - Practice

Capstone Project

Project Requirements & Expected
Outcome Reminder.

Expected Frontend - Landing Page

iX Software Engineering Blog

Home Categories Blogs About 
Profile Logout

THE BLOG

Recent Blog Posts



iX Developer • 2024-04-22

My First Blog Post

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

[Web Development](#) [Software Engineering](#)



iX Developer • 2024-04-22

My Second Blog Post

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

[Web Development](#) [Software Engineering](#)



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My Third Blog Post

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

[Web Development](#) [Software Engineering](#)

Categories

[Project Management](#)

orem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

[Web Development](#)

orem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

[Software Engineering](#)

orem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

Home Blogs About

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Expected Frontend - Blogs Page

iX Software Engineering Blog

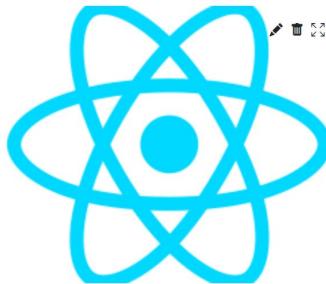
Home Categories Blogs About 

THE BLOG

[Project Management](#) [Web Development](#) [Software Engineering](#)

Blog Posts

Add Blog Post



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My First Blog Post

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[Web Development](#) [Software Engineering](#)



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[Web Development](#) [Software Engineering](#)

Expected Frontend - Categories Page

iX Software Engineering Blog

Home Categories Blogs About 

THE BLOG

Categories

Add Category

Project Management



orem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

Web Development



orem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

Software Engineering



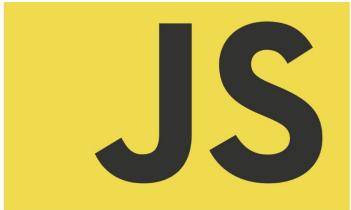
orem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

Home Blogs About

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Expected Frontend - Blog View



My Second Blog Post

2024-04-22 by [iDeveloper](#)

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

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About the author



This is my bio....

Introduction

I'm so excited to share my first blog post with the world. I've been working on this for a while and I'm happy to finally share it with you. Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Body

This is the body of my blog post. I hope you enjoy reading it as much as I enjoyed writing it. Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Conclusion

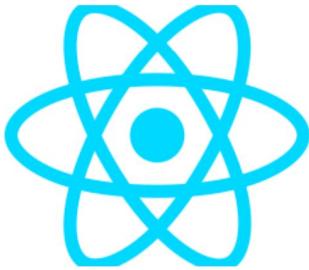
I hope you enjoyed reading my first blog post. I'm looking forward to sharing more with you in the future. Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.



Expected Frontend - Profile Page



Author Blog Posts



iX Developer • 2024-04-22

My First Blog Post

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

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My Second Blog Post

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My Third Blog Post

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the ...

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Expected Frontend - Login / Registration

Please login

Email address

Password

[Sign in](#)

[Register](#)

The Blog App © 2024

Author registration

First name

Last name

Bio

Email address

Password

[Register](#)

[Login](#)

The Blog App © 2024

Expected Frontend - Profile - Update

Edit Profile X

Image



First Name

Last Name

Bio

Email

Close Save changes



Expected Frontend - Blog - Create

Add Blog X

Image



+

Categories Project Management ▼

Title

Description

Content

Section Header

Section Text

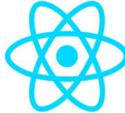
⊕ ⊖

Close Save changes

Expected Frontend - Blog - Update

Edit Blog

Image



Categories Project Management

Web Development x Software Engineering x

Title

My First Blog Post

Description

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 15c

Content

Section Header

Introduction

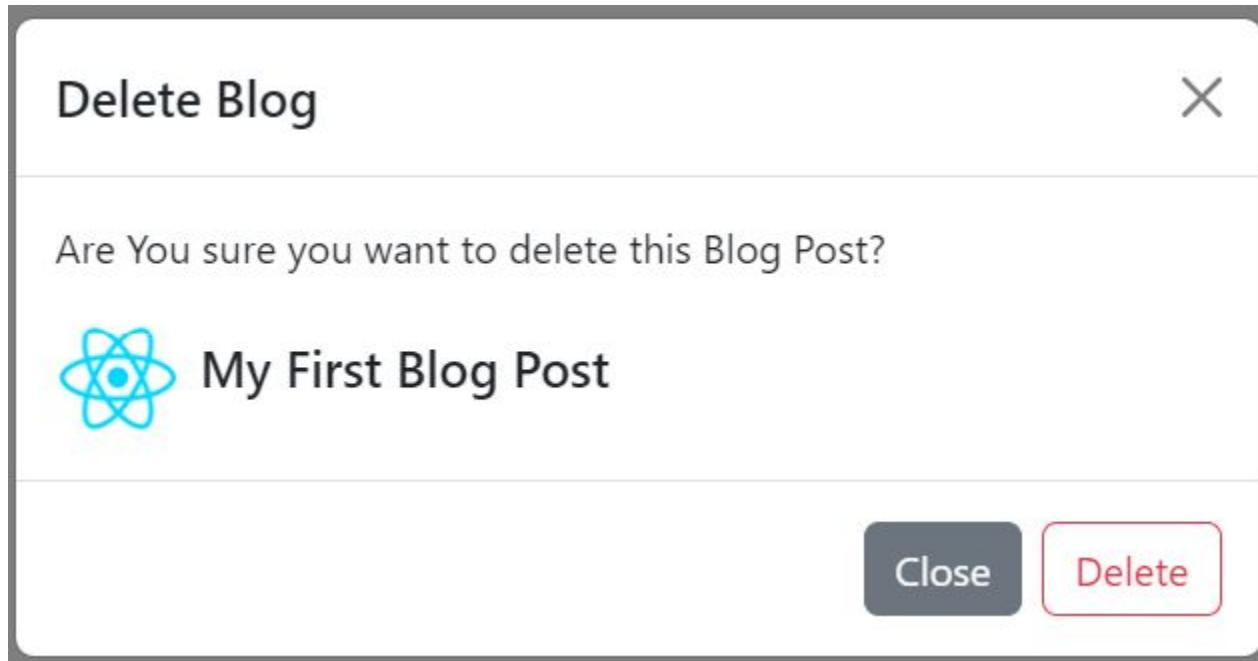
Section Text

I'm so excited to share my first blog post with the world. I've been working on this for a while and I'm happy to finally share it with you.

+

Close Save changes

Expected Frontend - Blog - Delete



Expected Frontend - Category - Create

Add Category

X

Title

Description

Color Hexadecimal

Close Save changes

Expected Frontend - Category - Update

Edit Category

X

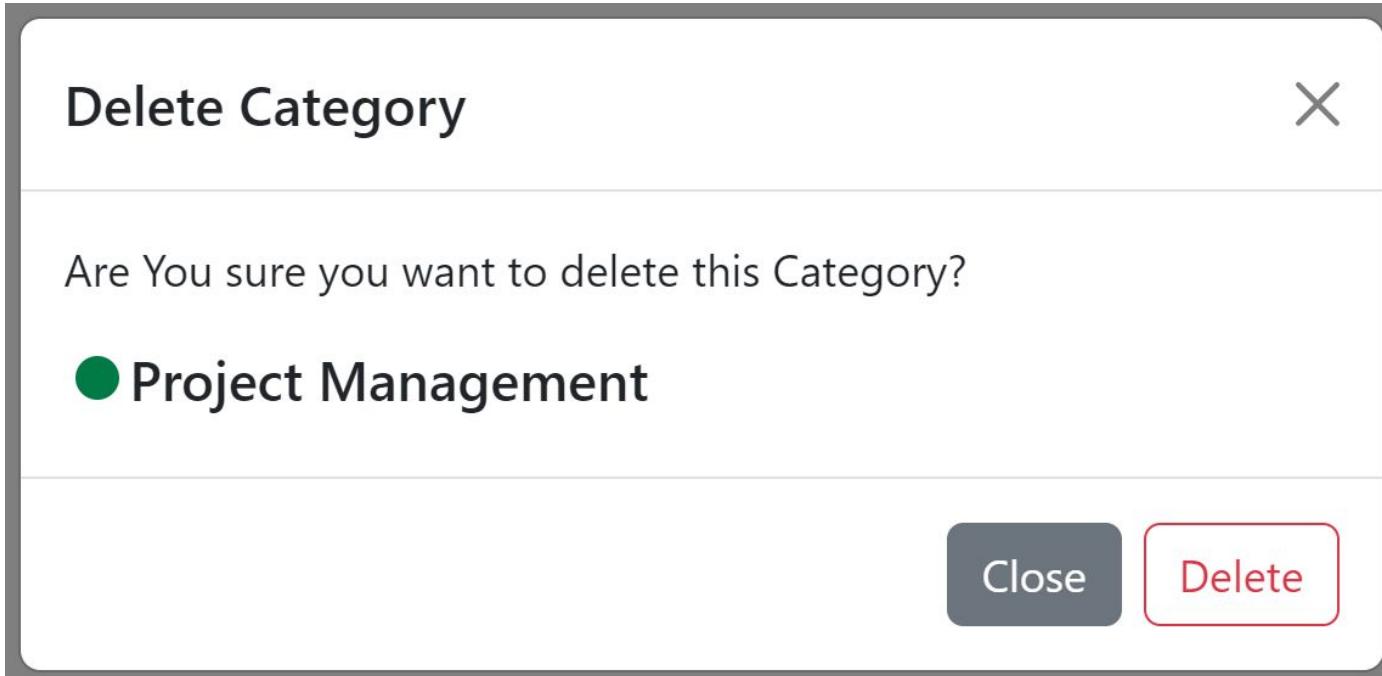
Title

Description

Color Hexadecimal

Close Save changes

Expected Frontend - Category - Delete



Project Requirements: Blog App - Backend

- Node.js, Express, and MongoDB - Backend & API
- API with routes:
 - Handling authentication for users:
 - Registration
 - Login
 - CRUD for blogs, categories and authentication:
 - Create
 - Read
 - Update
 - Delete

Project Requirements: Blog App - API Routes

- Routes:
 - Authentication:
 - Create user - *login*
 - Register new user - *register*
 - Get user by ID - *getUser*
 - Update user - *updateUser*
 - Categories:
 - Create category - *createCategory*
 - Get all categories - *getCategories*
 - Get category by ID - *getCategory*
 - Update category - *updateCategory*
 - Delete category - *deleteCategory*

Project Requirements: Blog App - API Routes

- Blog Posts:
 - Create blogs - *createBlog*
 - Get all blog posts - *getBlogs*
 - Get blog by ID - *getBlog*
 - Get blogs by author ID - *getBlogsByAuthorId*
 - Get blogs by categories ID - *getBlogsByCategoriesId*
 - Update blog - *updateBlog*
 - Delete blog - *deleteBlog*

Deploying Capstone Project

Mongo DB Atlas and Heroku

Build frontend

In ``blog-app/frontend/`` run the following command

```
npm run build
```

sh

Serve Frontend from Express Backend

In `blog-app/backend/src/index.js` add the following code:

```
...
app.use(express.static(path.join(__dirname, "../../frontend/build")));

app.get("*", (req, res) =>
  res.sendFile(
    path.resolve(__dirname, "..", "..", "frontend", "build", "index.html")
  )
);

...

```

Serve Frontend from Express Backend

In `blog-app/` create a `package.json` file:

```
json
{
  "name": "ix-blog-app",
  "version": "1.0.0",
  "description": "This is the backend server for my awesome blog app",
  "main": "./backend/src/index.js",
  "scripts": {
    "start": "node ./backend/src/index.js",
    "test": "echo \"Error: no test specified\" && exit 1",
    "heroku-postbuild": "NPM_CONFIG_PRODUCTION=false cd frontend && npm install && npm run build"
  },
  "author": "Byron de Villiers",
  "license": "ISC",
  "dependencies": {
    "@google-cloud/storage": "^7.11.2",
    "bcryptjs": "^2.4.3",
    "cors": "^2.8.5",
    "dotenv": "^16.4.5",
    "express": "^4.19.2",
    "jsonwebtoken": "^9.0.2",
    "mongoose": "^8.4.0",
    "multer": "^1.4.5-lts.1"
  }
}
```

Mongo DB Atlas

Mongo DB Atlas

Create Mongo DB Cloud Account

- <https://www.mongodb.com/products/platform/cloud>

Create Database cluster - *Note: Choose the free version

Deploy your cluster

Use a template below or set up advanced configuration options. You can also edit these configuration options once the cluster is created.

The screenshot shows the MongoDB Cloud deployment interface. It features three main cluster templates:

- M10**: \$0.11/hour. For production applications with sophisticated workload requirements. Storage: 10 GB, RAM: 2 GB, vCPU: 2 vCPUs.
- Serverless**: For application development and testing, or workloads with variable traffic. Storage: Up to 1 TB, RAM: Auto-scale, vCPU: Auto-scale.
- M0**: Free. For learning and exploring MongoDB in a cloud environment. Storage: 512 MB, RAM: Shared, vCPU: Shared.

Free forever! Your M0 cluster is ideal for experimenting in a limited sandbox. You can upgrade to a production cluster anytime.

Name
You cannot change the name once the cluster is created.

Automate security setup
 Preload sample dataset

Provider



Region

Cape Town (af-south-1) ★
★ Recommended Low carbon emissions

Tag (optional)

I'll do this later

Go to Advanced Configuration

Create Deployment

Create Mongo DB Cloud Account

- Connect to cluster

The screenshot shows the MongoDB Atlas web interface. The top navigation bar includes 'Atlas', 'Byron's Org ...', 'Access Manager', 'Billing', 'All Clusters', 'Get Help', and 'Byron'. The left sidebar has sections for 'Project 0', 'Data Services' (selected), 'App Services', and 'Charts'. Under 'Data Services', there are links for 'Overview', 'DEPLOYMENT' (selected), 'Database' (highlighted in green), 'Data Lake', and 'SERVICES' (with sub-links: Device & Edge Sync, Triggers, Data API, Data Federation, Atlas Search, Stream Processing, Migration). Under 'SECURITY', there are links for 'Quickstart', 'Backup', 'Database Access', 'Network Access', and 'Advanced'. A 'New On Atlas' link with a count of 5 is also present. The main content area is titled 'Clusters' and shows a deployment for 'BYRON'S ORG - 2024-06-18 > PROJECT 0'. It displays a progress message 'We are deploying your changes (current action: creating a plan)'. Below this, it says 'Clusters' and shows a sample dataset loading. A 'Blog' cluster is listed with a status of 'Blog is ready to use!'. The 'Connect' button is highlighted with a red box. Other buttons include 'View Monitoring', 'Browse Collections', and '...'. At the bottom, there are tabs for 'FREE' and 'SHARED'. The cluster details table includes columns: VERSION (7.0.11), REGION (AWS / Cape Town (af-south-1)), CLUSTER TIER (M0 Sandbox (General)), TYPE (Replica Set - 3 nodes), BACKUPS (Inactive), LINKED APP SERVICES (None Linked), ATLAS SQL (Connect), and ATLAS SEARCH (Create Index). A '+ Add Tag' button is at the bottom of the cluster table.

Create Mongo DB Cloud Account

- Connect to cluster
- Note: *Replace <username> and <password> with your credentials

The screenshot shows the 'Connect to Blog' setup process. The progress bar at the top indicates steps 1 and 2 are completed, while step 3 is in progress. A red warning message states: 'You can't connect yet. Set up your user security permission in the first step.' Below this, there's a section for connecting with MongoDB Compass, with options for 'I don't have MongoDB Compass installed' or 'I have MongoDB Compass installed'. Step 1, 'Select your operating system and download MongoDB Compass', shows a dropdown for 'macOS 64-bit (10.14+)' and download links for 'Download Compass (1.43.1)' or 'Copy download URL'. Step 2, 'Copy the connection string, then open MongoDB Compass', displays the connection string: 'mongodb+srv://<username>:<password>@blog.u5gvasj.mongodb.net/'. A note says to replace '<password>' with the password for the '<username>' user, ensuring it's URL encoded. The bottom section, 'RESOURCES', includes links for 'Connect with Compass', 'Import and Export Data', 'Access your Database Users', and 'Troubleshoot Connections'. Navigation buttons 'Go Back' and 'Done' are at the bottom.

Connect to Blog

Set up connection security Choose a connection method Connect

You can't connect yet. Set up your user security permission in the first step.

Connecting with MongoDB Compass

I don't have MongoDB Compass installed I have MongoDB Compass installed

1. Select your operating system and download MongoDB Compass

macOS 64-bit (10.14+) ▾

[Download Compass \(1.43.1\)](#) or [Copy download URL](#)

Compass is an interactive tool for querying, optimizing, and analyzing your MongoDB data.

2. Copy the connection string, then open MongoDB Compass

mongodb+srv://<username>:<password>@blog.u5gvasj.mongodb.net/

Replace <password> with the password for the <username> user. Ensure any options are URL encoded.

RESOURCES

Connect with Compass Import and Export Data

Access your Database Users Troubleshoot Connections

Go Back Done

Create Mongo DB Cloud Account

- Connect to cluster
- Note: *Replace <username> and <password> with your credentials

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Connect to Blog

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macOS 64-bit (10.14+) ▾

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mongodb+srv://<username>:<password>@blog.u5gvasj.mongodb.net/

Replace <password> with the password for the <username> user. Ensure any options are URL encoded.

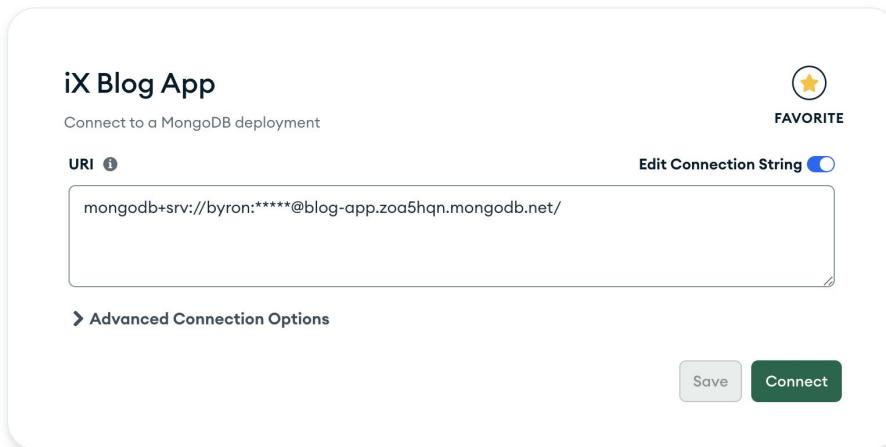
RESOURCES

Connect with Compass Import and Export Data
Access your Database Users Troubleshoot Connections

Go Back Done

Create Mongo DB Cloud Account

- Connect to cluster in Mongo DB Compass



Create Mongo DB Cloud Account

- Connect to cluster in Mongo DB Compass

```
# MONGO_URI=mongodb://localhost:27017/blog-app
MONGO_URI=mongodb+srv://<username>:<password>@<db-name>. <project-id>.mongodb.net/
PORT=8000
JWT_SECRET=123abc
```

sh

Heroku

Heroku

iX

Create Heroku Account

- <https://www.heroku.com/>

Create Heroku account - *Note: You'll have to enter in credit card information.

Create Heroku Project

The screenshot shows the Heroku Platform interface. At the top, there's a navigation bar with the Salesforce Platform logo, the Heroku logo, and a search bar labeled "Jump to Favorites, Apps, Pipelines, Spaces...". On the right side of the bar, there's a "New" button highlighted with a green box. Below the bar, the user is logged in under a "Personal" account.

The main area is titled "App name" and contains a text input field with the value "blop-app-session-1", which has a green checkmark icon to its right indicating it's available. Below the input field, the message "blop-app-session-1 is available" is displayed in green text.

The next section is titled "Choose a region" and features a dropdown menu with the option "United States" selected, indicated by an American flag icon and the text "United States".

At the bottom left, there's a button labeled "Add to pipeline...". At the very bottom, there are two buttons: "Create app" (in purple) and "Cancel" (in white).

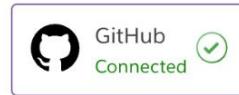
Define Heroku Deploy

- Push the latest to your main git hub branch
- Connect Heroku to github:
<https://devcenter.heroku.com/articles/github-integration>

Deployment method



Heroku Git
Use Heroku CLI



Container Registry
Use Heroku CLI

App connected to GitHub

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

Connected to [ByronDev121/ix-blog-app-session-1](#) by ByronDev121

[Disconnect...](#)

• Releases in the [activity feed](#) link to GitHub to view commit diffs

• Automatically deploys from testing

Define Heroku Environment vars

Overview Resources Deploy Metrics Activity Access **Settings**

App Information

App Name

blog-app-session-1-test

Region

🇺🇸 United States

Stack

heroku-22

Framework

Node.js

GitHub repo

 [ByronDev121/ix-blog-app-session-1](#)

Heroku git URL

<https://git.heroku.com/blog-app-session-1-test.git>

Config Vars

Reveal Config Vars

Config vars change the way your app behaves.
In addition to creating your own, some add-ons come with their own.

Define Heroku Environment vars

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](#)

GOOGLE_APPLICATION_CREDENTIALS

gcp_key.json



GOOGLE_CREDENTIALS

```
{  
  "type": "service_account",  
  "project_id": "devit-tech-web-site",  
  "private_key_id": "████████████████████████████████████████████████████████████████",  
  "private_key": "-----BEGIN PRIVATE KEY-----\n-----END PRIVATE KEY-----\n",  
  "client_email": "████████████████████████████████████████████████████████████████@developer.gserviceaccount.com",  
  "client_id": "11████████████████",  
  "auth_uri": "https://accounts.google.com/o/oauth2/auth",  
  "token_uri": "https://oauth2.googleapis.com/token",  
  "auth_provider_x509_cert_url": "https://www.googleapis.com/oauth2/v1/certs",  
  "client_x509_cert_url": "https://www.googleapis.com/robot/v1/metadata/x509/11████████████████",  
  "universe_domain": "googleapis.com"  
}
```



JWT_SECRET

123abc



MONGO_URI

mongodb+srv://byron:FGLdrH2IAxHYaMuI@████████████████.cluster.mongodb.net/test?retryWrites=true&w=majority



KEY

VALUE

Add

Workshop

Finalising Capstone Project

Presentation

Tips

Presentation - Tips - Preparation

- Preparing, practicing and becoming comfortable with the topic you are presenting.
 - Make sure you fully understand the key points you are presenting.
 - Easier to naturally speak without having to remember an exact speech.
 - Includes:
 - Timing, pace, tone and volume
 - Body language
- Utilize visual aids
 - Only to improve and support the presentation, not to solely rely on.
 - Understand your visuals and how they correspond to your presentation
 - Don't read off of them.
 - Don't overuse visuals instead of explaining your understanding of the topic you are presenting.

Presentation - Tips - Audience

- Knowing your audience:
 - Understanding the audience members helps set the level at which you should be presenting to them.
 - How detailed or technical it should be.
 - Either high-level overview or in-depth technical overview.
 - Understanding the key purpose of the presentation and their expectations of what you should be presenting
 - Keeping the focus on those points will keep the audience engaged and meet their expectations.

Presentation - Tips - Structure

- How to structure your presentation:
 - Structure the flow of how you want to present to the audience, and which segments flow into the next.
 - Making the presentation digestible and straightforward.
 - However allow your presentation to be flexible and adaptable based on the reaction of the audience.
 - Whether you might need to elaborate further on a section
 - Or highlighting the audiences' interests.
 - Be open to feedback.

Presentation - Tips - Structure

- Typical Software Engineering Presentation Format:
 - Introduction:
 - State your purpose, provide overview of the project
 - Body:
 - Project details: Problem/solution/testing/results
 - Conclusion:
 - Summarize your key points and state recommendation
 - Q&A

Presentation

Practice

Presentation - Practice - Key Talking Points

- Capstone Project - Structure - Key points to practice:
 - Project details
 - Key features
 - Technologies utilized and the Tech stack
 - Challenges encountered
 - Solutions - How they were overcome
 - Lessons learned

Homework

Apply what we have learned

Homework

- Complete Capstone project.
- Prepare final presentations.

Next Class

Capstone Project Presentations

