

## LABORATION'S GOAL

Learn how to deploy a Node.js application to Render and make it publicly accessible.

## PRE-REQUIREMENTS

In this lab, you will need the following:

- A Node.js application
- A Render account <https://render.com/>

## PART 1 - PREPARATION OF THE DEVELOPMENT ENVIRONMENT:

1. Create a new Node.js application (if you don't already have one) and make sure it's working correctly on your local machine. The application should be connected to MongoDB database on the cloud.
2. Create a new GitHub repository and push your code to it.

Note that you can use the NodeJS application developed for lab1

## PART 2 - DEPLOYMENT TO RENDER:

1. Sign up for a Render account at <https://render.com/> if you haven't already.
2. Once logged in, click on the "New +" button on the dashboard and select "Web Service" from the dropdown menu.
3. On the next page, select "GitHub" as the code repository and connect to the repository you just created.
4. Choose the branch you want to deploy and the path to the Node.js application within the repository.
5. Configure the environment variables for your application. These can be added under the "Environment Variables" section in the "Advanced" tab. You will need to add any sensitive information such as database credentials (such as URI of your MongoDB database) or API keys here.
6. Click on the "Create Web Service" button to start the deployment process.
7. Once the deployment is complete, you will see a message indicating that your application is ready to be accessed. You can click on the URL to view your application in the browser.

## PART 3 - UPDATING THE APPLICATION:

1. To make updates to your application, simply push the changes to the GitHub repository. Render will automatically detect the changes and deploy the updated version of your application.
2. You can also manually trigger a new deployment by clicking on the "Deploy" button on the Render dashboard.
3. If you need to make changes to the environment variables, you can update them in the "Environment Variables" section and click on the "Save Changes" button.

Congratulations! You have successfully deployed a Node.js application on Render.

## PART 4 - Deploying with the Render CLI

Now that you're familiar with deploying your application through Render's web-based dashboard, let's discover another efficient method of deployment using Render CLI. Render CLI is a command-line interface that enables you to manage your Render resources and deploy applications directly from your terminal. It's a swift and efficient way to deploy your applications, giving you the flexibility to customize configurations and manage your services with a simple command-line interface.

In this section, you'll learn how to:

1. Install Render CLI on your local machine
2. Configure your Render CLI credentials
3. Deploy your application using Render CLI

First, we need to install the Render CLI on our local machine. You can follow the instructions on the Render documentation for your specific operating system to install the CLI: <https://render.com/docs/cli/installation>.

Once we have the CLI installed, we can log in to our Render account using the CLI by running the command:

```
render login
```

Next, we need to navigate to the root directory of your nodejs application and run the command:

```
render init.
```

This will create a new Render service and generate a **render.yaml** file in our project directory.

You can then customize the **render.yaml** file to specify the configuration of our Render service, such as the name of the service, the environment variables, and the routing rules.

Finally, you can deploy our application to Render by running the command :

```
render deploy -- --build-env NODE_ENV=production
```

This will build and deploy your Node.js application to Render. The --build-env flag sets the NODE\_ENV environment variable to production.

Once the deployment is complete, you should be able to access your Node.js application on the web by visiting the URL displayed in the Render dashboard for your service.

Now to deploy your changes to the code, please follow the instructions below

1. Make the necessary changes to your Node.js application code.
2. Commit and push your changes to your local Git repository.
3. Run the command `render deploy` in your project directory to redeploy your application to Render.
4. Once the deployment is complete, you should be able to access your updated Node.js application on the web by visiting the same URL displayed in the Render dashboard for your service.

It's important to note that if you've made changes to the **render.yaml** file (such as modifying environment variables), you'll need to run `render deploy` with the `--update flag` to apply those changes.

Please submit the GitHub repository of your application as well as the Render-generated URL before the deadline on Canvas. Start working on your lab and if you have any questions or concerns, feel free to ask during the lab session on Friday, where I will be available to assist you.

All the best 😊