A

Project Report

on

Ride Sharing and CO2 Emission

Submitted

by

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Under the Guidance of

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Other Details:

Project Duration: 30 days

Project Sponsor: IBM Smart Bridge

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1. Introduction

The Ride Sharing and CO2 Emissions App is a mobile application designed to promote sustainable transportation by facilitating ride-sharing among users. The app aims to reduce carbon dioxide (CO2) emissions by encouraging people to share rides and make more environmentally friendly transportation choices.

2. Project Objectives

- Develop a user-friendly mobile application for both Android and iOS platforms.
- Implement a secure and efficient ride-sharing algorithm.
- Integrate a CO2 emissions tracking system to provide users with real-time data on their environmental impact.
- Encourage users to make sustainable transportation choices by providing incentives and rewards for eco-friendly practices.

3. Project Scope

- ✓ The app will support user registration and authentication.
- ✓ Users can create ride-sharing known as "CARPOOLING" requests or join existing ones.
- ✓ A robust algorithm will match users based on their routes, preferences, and schedules.
- ✓ The CO2 emissions tracking system will use geolocation data and vehicle information to estimate carbon footprints.
- ✓ In-app messaging and notification systems will facilitate communication between users.

4. Project Flow

- **Define Problem / Problem Understanding** ○
  Specify the business problem
  - ○ Business requirements
  - ○ Literature Survey
  - ○ Social or Business Impact.

- **Creating a User Interface**
    - Create a User Interface using HTML, CSS/Bootstrap, and JavaScript, where the user will interact and give input.

- **Database Connection**
    - Creating necessary Schemas and Tables
    - Create a Cloud Object Storage to store multimedia data.

- **Flask Application**
    - Creating python's flask web framework to connect the front end with the back end services.

- **GitHub**
    - Pushing all the files to github by using git commands

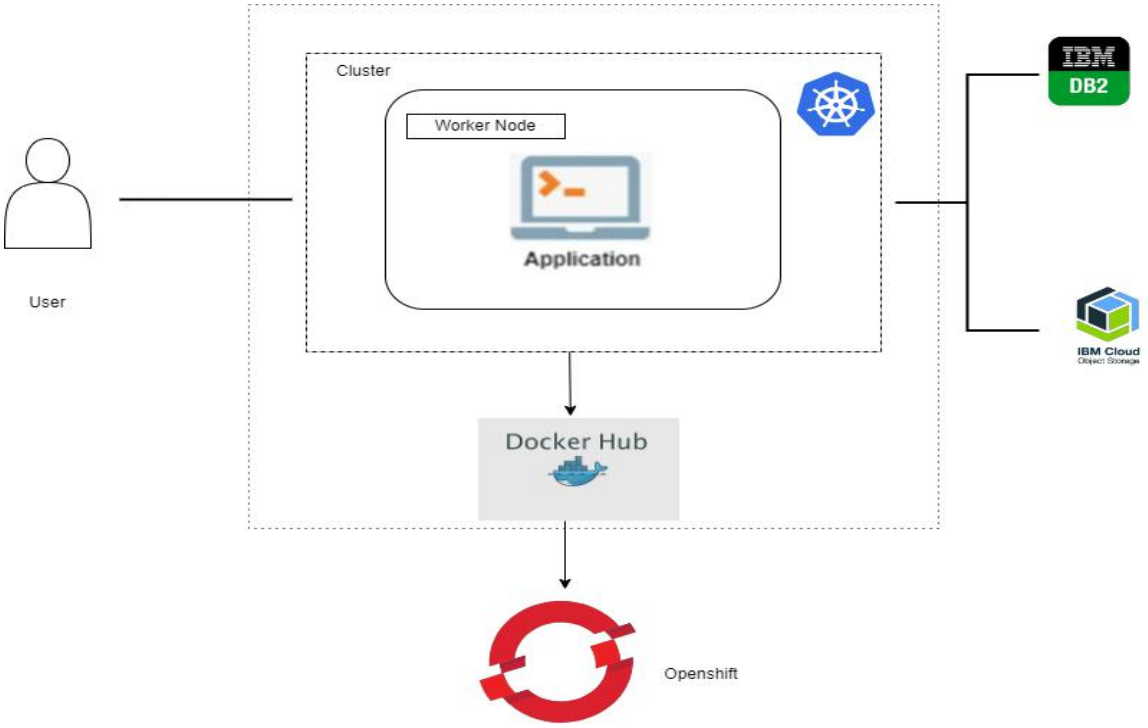
- **Containerization**
    - Containerize your application as a docker image and push it into Docker
    - Push the image to Docker Hub.

- **Kubernetes**

  Creating a YAML configuration file

- **Deployment Application in Openshift**
    - Deploying with Git Repository
    - Deploying with Docker Image
    - Deploying with YAML File

5. Technical Architecture



6. Features and Functionalities

- ✓ User can register and login on the application
- ✓ Application has the feature of chatting using chatbot to book the ride and destination
- ✓ User Engagement and Incentives: Implement a point system for users based on their eco-friendly choices.

7. Technology Stack

Programming Languages: HTML, CSS, Python

Backend: JS with Express for a scalable and robust backend infrastructure.

Database: IBM DB2 for data storage and retrieval.

Cloud Deployment: Integration with IBM Cloud and RedHat Openshift

8. Project Implementation

The implementation of project includes the development of both the front-end and back-end components. Security measures are implemented to protect user data and ensure secure file uploads.

Project along with screenshots.

```
C:\Users\way2m\Desktop\IBM_Project_Mandar\App>docker build -t ridesharing .
[+] Building 30.0s (5/11)                                                                                    docker:default
 => [internal] load .dockerignore                                                                                      0.0s
 => => transferring context: 2B                                                                                        0.0s
 => [internal] load build definition from Dockerfile                                                                   0.0s
 => => transferring dockerfile: 231B                                                                                   0.0s
 => [internal] load metadata for docker.io/library/python:3.6                                                          4.8s
 => [auth] library/python:pull token for registry-1.docker.io                                                          0.0s
 => [1/6] FROM docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc   25.1s
 => => resolve docker.io/library/python:3.6@sha256:f8652afaf88c25f0d22354d547d892591067aa4026a7fa9a6819df9f300af6fc    0.0s
 => => sha256:d097a4907a8ec079df5ac31872359c2de510f82214c0448e926393b376d3b60d 2.22kB / 2.22kB                         0.0s
 => => sha256:0e29546d541cdbd309281d21a73a9d1db78665c1b95b74f32b009e0b77a6e1e3 12.58MB / 54.92MB                       25.1s
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 => => sha256:cb5b7ae361722f070eca53f35823ed21baa85d61d5d95cd5a95ab53d740cdd56 10.87MB / 10.87MB                       21.6s
 => => sha256:6494e4811622b31c027ccac322ca463937fd805f569a93e6f15c01aade718793 8.39MB / 54.57MB                       25.1s
 => => sha256:6f9f74896dfa93fe0172f594faba85e0b4e8a0481a0fefd9112efc7e4d3c78f7 0B / 196.51MB                           25.1s
 => [internal] load build context                                                                                      0.1s
 => => transferring context: 12.95kB                                                                                   0.0s
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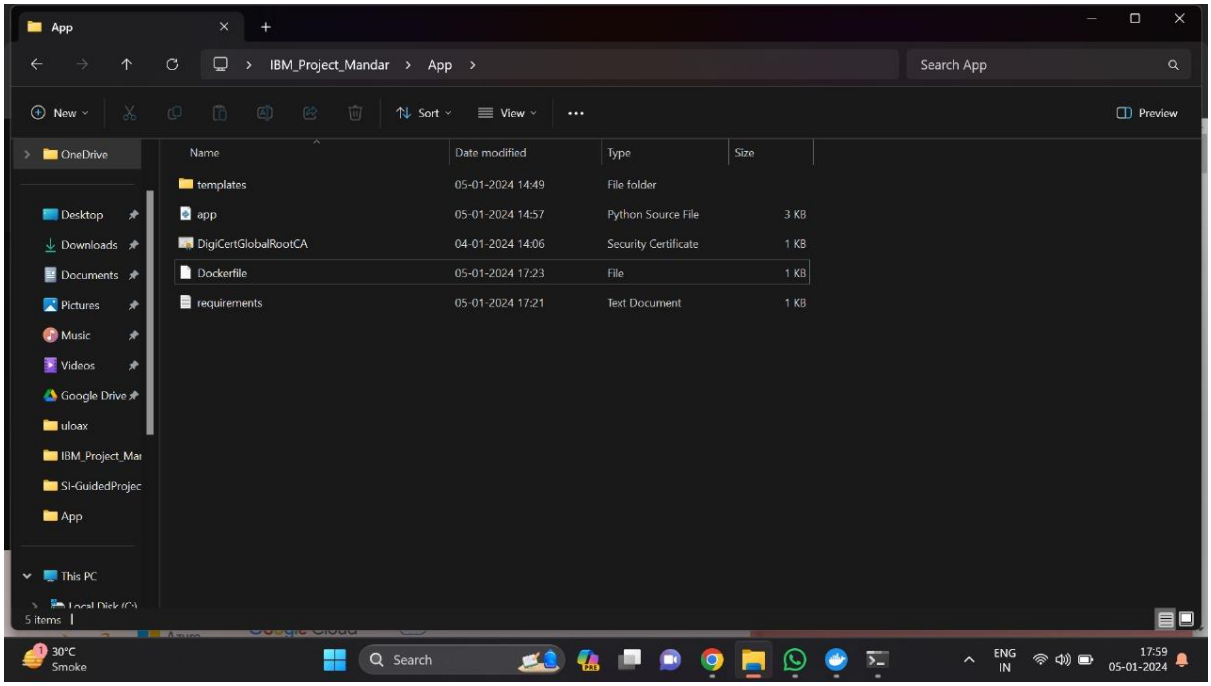

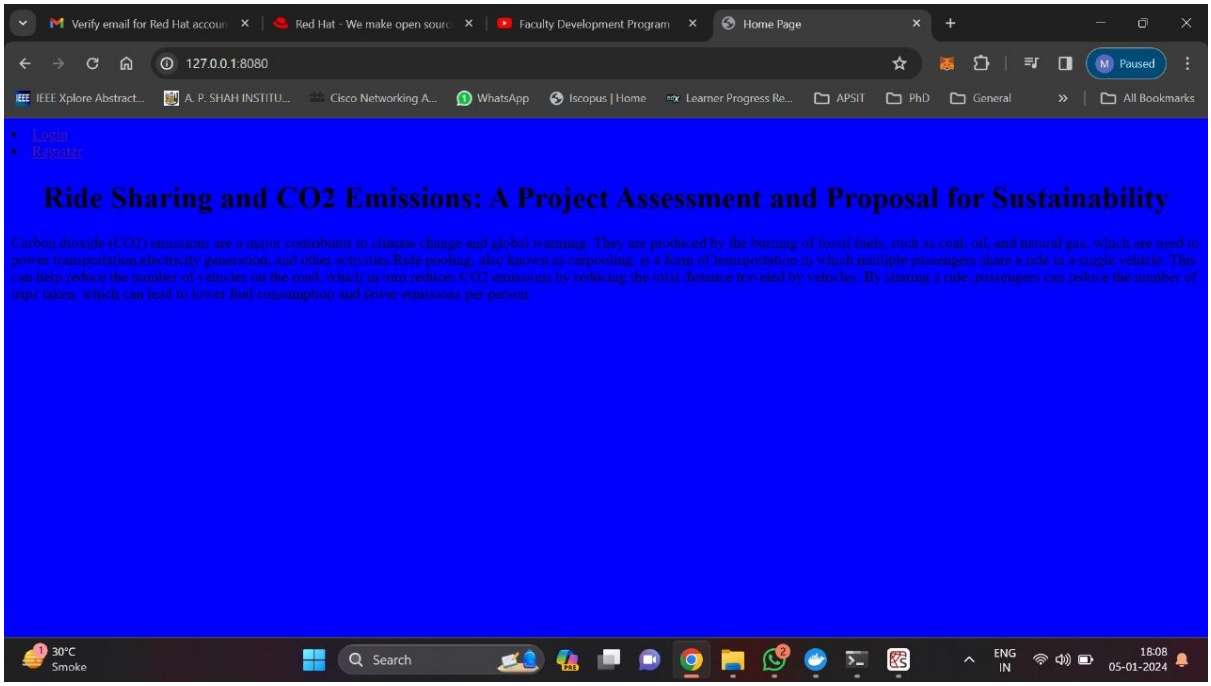
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Ride Sharing and CO2 Emissions: A Project Assessment and Proposal for Sustainability
Carbon dioxide (CO2) emissions are a major contributor to climate change and global warming. They are produced by the burning of fossil fuels, such as coal, oil, and natural gas, which are used to power transportation,electricity generation, and other activities.Ride pooling, also known as carpooling, is a form of transportation in which multiple passengers share a ride in a single vehicle. This can help reduce the number of vehicles on the road, which in turn reduces CO2 emissions by reducing the total distance traveled by vehicles. By sharing a ride, passengers can reduce the number of trips taken, which can lead to lower fuel consumption and fewer emissions per person.
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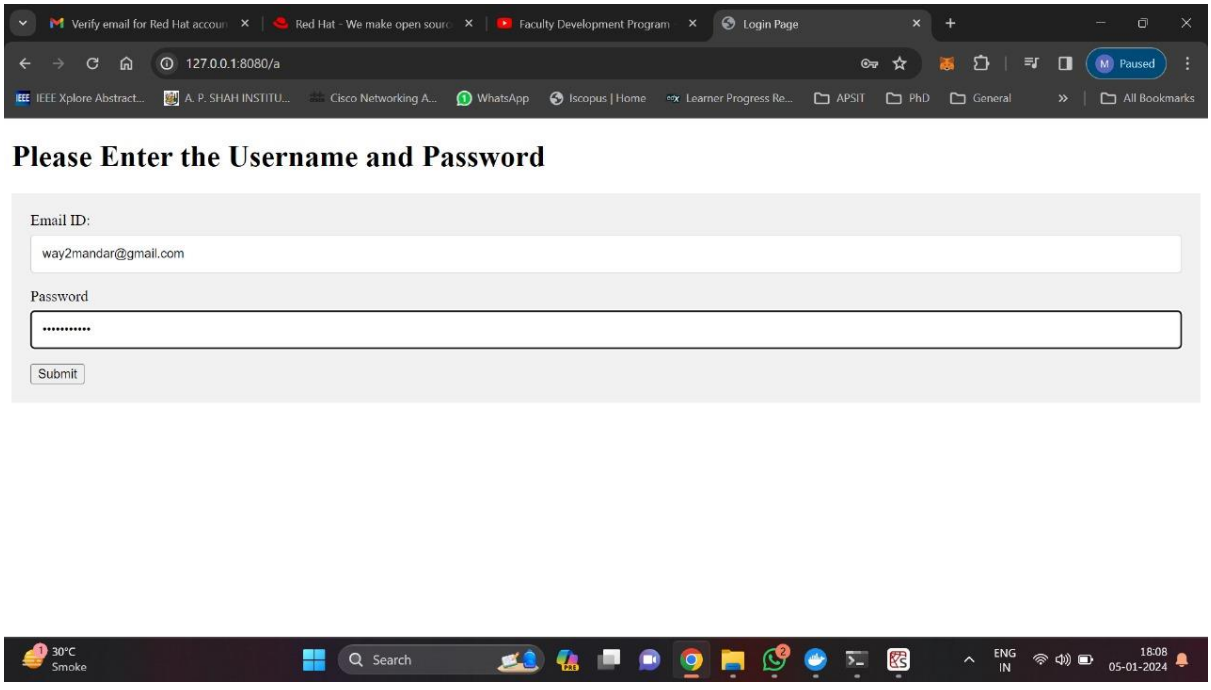
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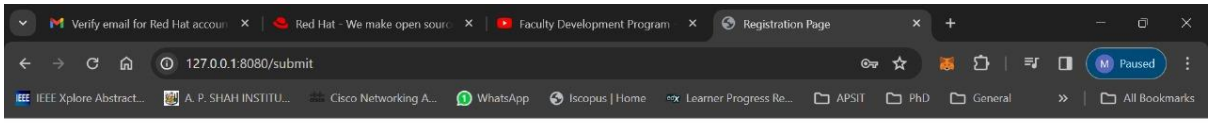


Please Enter the Details for Registration

Name: Please Enter the Name

Email: Please Enter the Email

Mobile No: Please Enter the Mobile

Password: Please Enter the Password

Submit

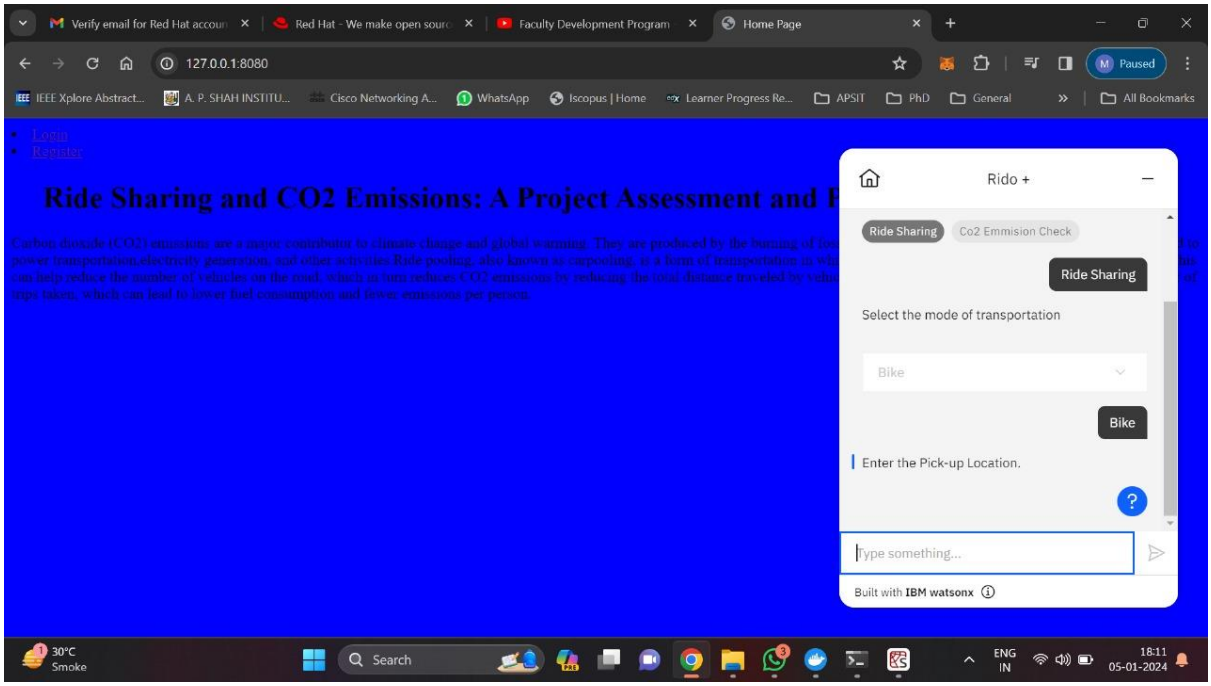
Password must contain the following:

A **lowercase** letter

A **capital (uppercase)** letter

A **number**

Minimum **8 characters**



9. Testing and Quality Assurance

Thorough testing, including unit testing, integration testing, and user acceptance testing, is conducted to ensure the system's reliability and performance. Quality assurance processes are in place to identify and address any issues.

10. Project Management

Project management tools and techniques are employed to track progress, manage tasks, and meet project milestones. Regular communication with stakeholders is maintained to keep them informed of project status.

11. Conclusion

The Ride Sharing and CO2 Emissions App aims to revolutionize transportation habits by combining convenience with sustainability. Through effective development, user engagement, and continuous improvement, the app will contribute to reducing carbon footprints and fostering a greener environment.

12. Future Enhancements

- Integration with public transportation schedules for more comprehensive route planning.
- Gamification elements to further encourage sustainable practices.
- Partnerships with local businesses for additional incentives.

References

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https://w3schools.com