Cloud Computing Lab

Presentation on

SnapEnhance

- By Team Binary_Girls

Guided by

Dr. Md. Abu Layek

Professor, Department of Computer Science and Engineering,
Jagannath University

Presented by

Farhana Akter Suci
ID: B190305001

and

Rifah Sajida Deya
ID: B190305004

Contents

Problem Statement

Non-technical users struggle:

Regular people can't easily fix photos because tools are too complex and expensive and need installation too.

Environment Inconsistency:

The ***"works on my machine"*** problem where applications function differently across development, testing, and production environments.

Scaling Challenges:

When more users join, it's difficult to make the app handle the extra load.

Integration Bottlenecks:

Long delays between development and deployment due to manual deployment processes.

Solution

Mobile-Friendly Interface:

Web app works well on any device with a browser, making photo enhancement accessible anywhere, without installation.

Docker for Everything:

Both frontend and backend in containers for consistency, solving dependency issues.

Easy Scaling:

On Render or Vercel, servers grow with more users— *no rebuild needed*.

Cloud-Ready and GitHub to Production:

Built to work well on cloud platforms. Code goes from GitHub to users automatically.

Used Tools & Technologies

- Front End: HTML, CSS and JavaScript
- Back End: Python 3.9, FAST API, Mongo DB
- Containerization : Docker
- Deployment: Backend in Render, Frontend in Vercel
- Version Control and Collaboration: Git and GitHub
- CI/CD & Automation: GitHub Actions

Use Case Diagram

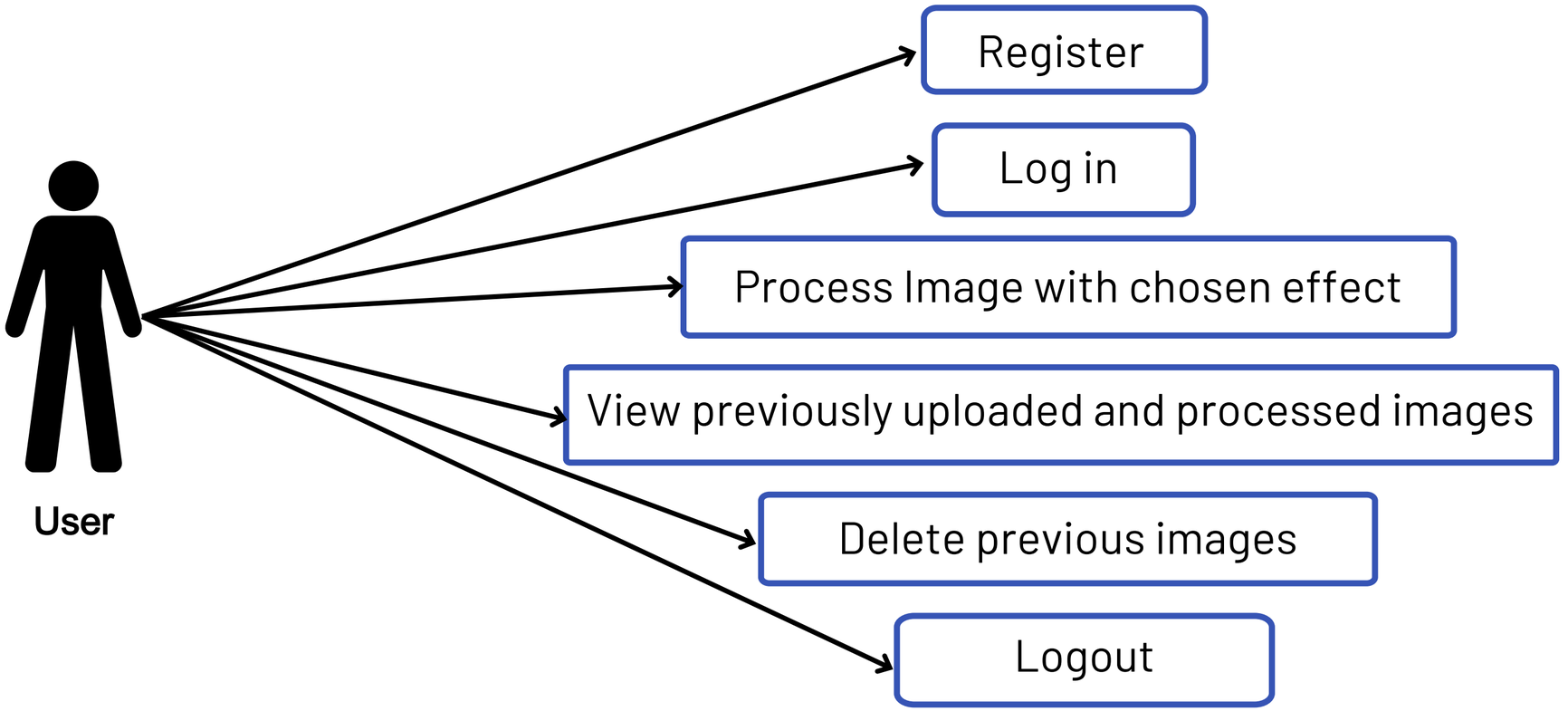


Figure 1: Use Case Diagram

CI/CD Pipeline with Dockerized Backend

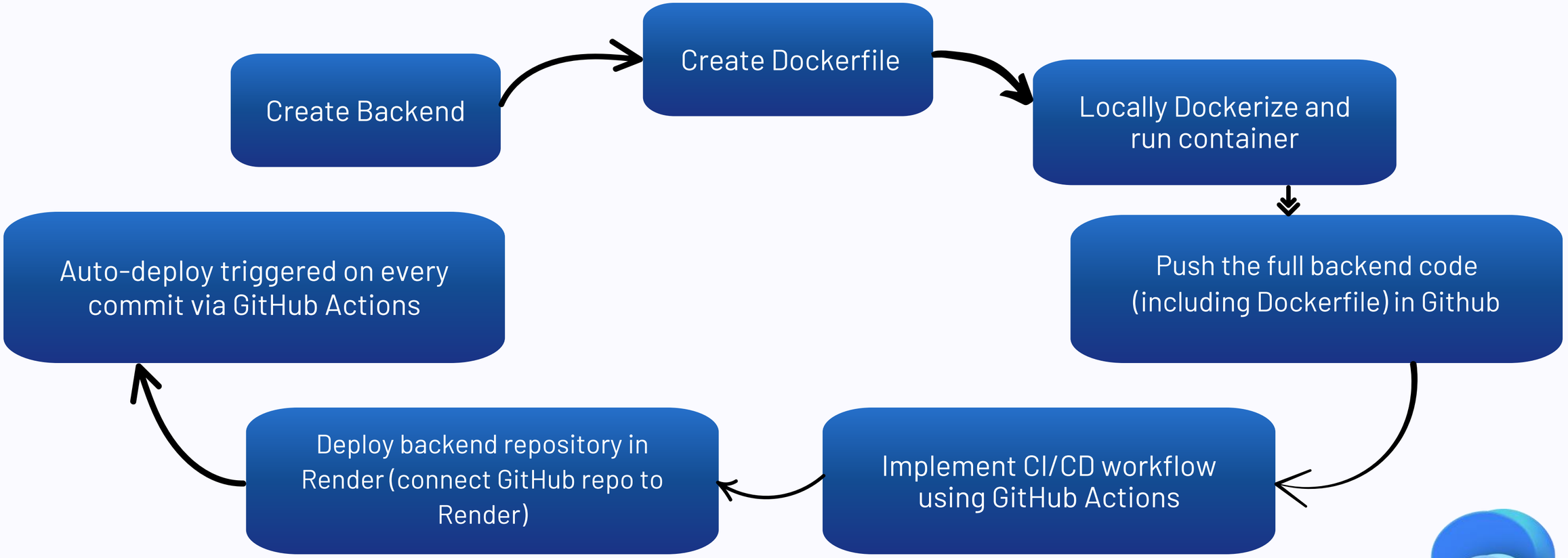


Figure 2: CI/CD Pipeline of Backend

CI/CD Pipeline with Dockerized Front-End

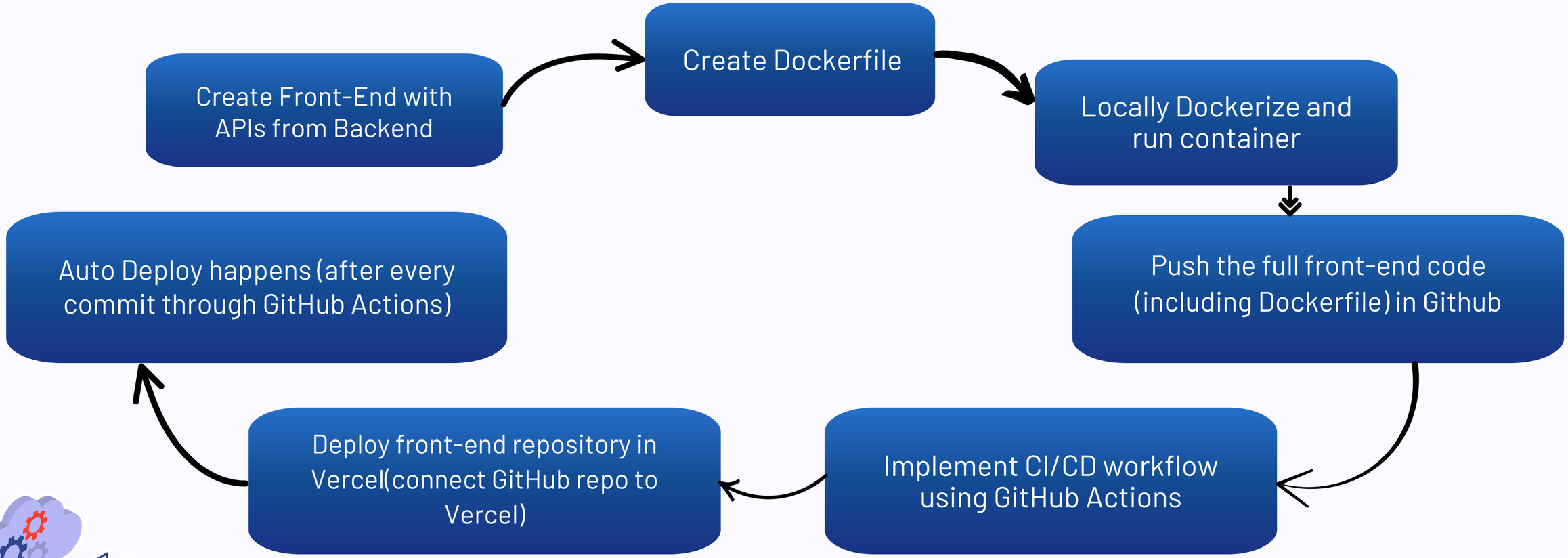
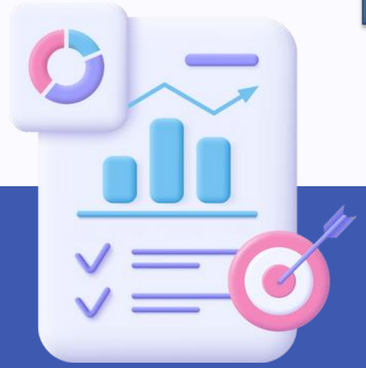


Figure 3: CI/CD Pipeline of Front-End

Cloud Benefits

- Easy Scaling
- Fast Deployment
- Cost Efficiency
- High Availability
- DevOps Automation
- Portability with Docker



Conclution

- With this responsive web app, users can process and enhance their images from anywhere—without installation or complex steps—and access their processed images anytime, as they are stored in a database.
- This project demonstrates how cloud platforms, Docker, and CI/CD streamline modern development. With automated deployments, scalable infrastructure, and reliable workflows, the system is production-ready and easy to maintain.
- Cloud tools like Render and Vercel made the process fast, efficient, and cost-effective.

Implementation


Thank
you