# CI/CD Lab

This hands-on guide walks you through deploying a **Vue.js** application to **GitHub Pages** using **GitHub Actions** — ideal for beginners learning CI/CD. Each step includes **detailed instructions** and the **expected output**.

## 1. Prerequisites

* Node.js and npm installed.
* Git installed and configured.
* GitHub account.

**Expected Output**:  
- Running node -v and git --version in your terminal shows version numbers. - You can log in to your GitHub account and create repositories.

## 2. Create a New Vue.js Project

Run:

npm install -g @vue/cli  
vue create my-vue-app

(Choose defaults or manually select Babel, Linter, etc.)

**Expected Output**:  
- New directory my-vue-app contains Vue project files. - Running npm run serve inside the folder starts the local app at http://localhost:8080.

## 3. Initialize First Git Commit & Push to GitHub

Inside my-vue-app, run:

git init  
git remote add origin https://github.com/gsmertiya/ProjectCICD.git  
git add .  
git commit -m "Initial commit"  
git branch -M main  
git push -u origin main

**Expected Output**:  
- Files are committed and visible in your GitHub repository online.

## 4. Configure Vue for GitHub Pages

Add a vue.config.js file at the root:

module.exports = {  
 publicPath: '//'  
}

**Expected Output**:  
- New file vue.config.js exists. - The project still builds and runs locally.

## 5. Create a GitHub Actions Workflow for Deployment

### a. Directory and File

Create folder .github/workflows and inside it, file deploy.yml.

### b. Example deploy.yml Configuration

Paste:

name: Deploy Vue.js app to GitHub Pages  
  
on:  
 push:  
 branches:  
 - main  
  
jobs:  
 build-deploy:  
 runs-on: ubuntu-latest  
  
 steps:  
 - name: Checkout repository  
 uses: actions/checkout@v2  
  
 - name: Set up Node.js  
 uses: actions/setup-node@v3  
 with:  
 node-version: '16'  
  
 - name: Install dependencies  
 run: npm install  
  
 - name: Build project  
 run: npm run build  
  
 - name: Deploy to GitHub Pages  
 uses: peaceiris/actions-gh-pages@v3  
 with:  
 github\_token: ${{ secrets.GITHUB\_TOKEN }}  
 publish\_dir: ./dist

**Expected Output**:  
- New file .github/workflows/deploy.yml in your repo. - On next push, your repo’s **Actions** tab shows a new running workflow.

## 6. Commit and Push Workflow Changes

git add vue.config.js .github/  
git commit -m "Add CI/CD GitHub Actions workflow for deployment"  
git push

**Expected Output**:  
- GitHub Actions workflow starts — view progress in the “Actions” tab. - Steps: install, build, and deployment show as green if successful. if failure on push to github pages, go to actions > General > Settings and scroll down and replace read to read and write permission.

## 7. Configure GitHub Pages on GitHub

* Go to repository **Settings** > **Pages**.
* Set Source branch to Deploy from a branch, branch “develop” folder /root or / and save.

**Expected Output**:  
- A confirmation message like “Your site is published at https://.github.io//”. - - (https://gsmertiya.github.io/ProjectCICD/)

## 8. Access Your Deployed Site

Visit the provided URL (https://.github.io//).

**Expected Output**:  
- Your Vue.js app loads in the browser. - Any code commit to the main branch automatically redeploys the updated site.

## 9. Troubleshooting (If Errors Occur)

* Wrong publicPath: Site loads blank or with broken assets.
* Build errors: Workflow fails, error logs in Actions tab.
* Incorrect branch/folder in Pages settings: Site not found.

**Expected Output**:  
- Fixing issues and pushing new commits triggers new builds. - Success: green workflow, live site up to date.

## Summary Table

| Step | Command/Action | Expected Output |
| --- | --- | --- |
| 1 | Check prerequisites | Versions displayed, GitHub account ready |
| 2 | vue create my-vue-app | Local project folder created, runs on localhost |
| 3 | Git init/push commands | Files pushed, visible in repo |
| 4 | Add vue.config.js | File exists, project builds ok |
| 5 | Add .github/workflows/deploy.yml | File exists, Actions tab shows pending workflow |
| 6 | Commit and push workflow | Workflow builds and deploys, green status |
| 7 | Configure GitHub Pages | Confirmation of site publish, URL provided |
| 8 | Visit live site URL | Vue.js app is accessible online |
| 9 | Fix failures/re-push if needed | Each fix restarts workflow and site updates automatically |