

Web App Deployment & DevOps Basics

Web App Dev Guide · Module 8 of 8 · CHERIEDU Dev Series

1. From Local to Live

Building a web app on your laptop is just the start. Deployment means making your app available to users on the internet, 24/7, with good performance and security.

2. Deployment Options

Platform	Best For	Cost	Difficulty
Vercel	Frontend / Next.js	Free tier	Very Easy
Railway / Render	Full stack Node.js	Free tier	Easy
AWS / GCP / Azure	Enterprise scale	Pay as you go	Complex
DigitalOcean	VPS for any stack	~\$400/month	Medium
cPanel Hosting	PHP/MySQL sites	~\$100–500/month	Easy

3. Git Workflow for Teams

```
# Create a feature branch
git checkout -b feature/fee-module

# Make changes and commit
git add .
git commit -m "Add fee payment API endpoint"

# Push and create pull request
git push origin feature/fee-module
# Open GitHub PR – team reviews code before merge

# After merge, CI/CD automatically deploys to production
```

4. Environment Variables — Keep Secrets Safe

```
# .env file (NEVER commit this to Git)
DB_HOST=localhost
DB_PASSWORD=super_secret_123
JWT_SECRET=my_jwt_key
OPENAI_API_KEY=sk-...

# In code
const dbHost = process.env.DB_HOST;
```

5. Production Checklist

- HTTPS enabled — SSL certificate (free with Let's Encrypt).
- Environment variables set in hosting dashboard — not in code.
- Database backups scheduled — daily minimum.
- Error logging enabled — use Sentry or LogRocket.
- Rate limiting on APIs — prevent abuse and DDoS.
- Load test before launch — use k6 or Apache JMeter.

FINAL PROJECT

Deploy your CHERIEDU school management web app to Vercel (frontend) and Railway (backend). Set up a GitHub Actions workflow that automatically deploys on every push to main.

