

DSA Tutor - Complete Deployment Guide

This guide will help you deploy your DSA Tutor application to the internet so others can use it.

Table of Contents

1. [Prerequisites](#)
 2. [Understanding API Keys \(IMPORTANT\)](#)
 3. [Deploy to Vercel](#)
 4. [Setup Custom Domain](#)
 5. [Configure Environment Variables](#)
 6. [Verify Deployment](#)
 7. [Troubleshooting](#)
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Prerequisites

Before you start, make sure you have:

-  GitHub account (you already have this)
 -  GitHub Student Developer Pack activated
 -  Your code pushed to a GitHub repository
 -  Supabase account with your database set up
 -  OpenRouter API key
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Understanding API Keys (IMPORTANT)

Why API keys are NOT shown publicly

Your API keys should NEVER be in your code! Here's why:

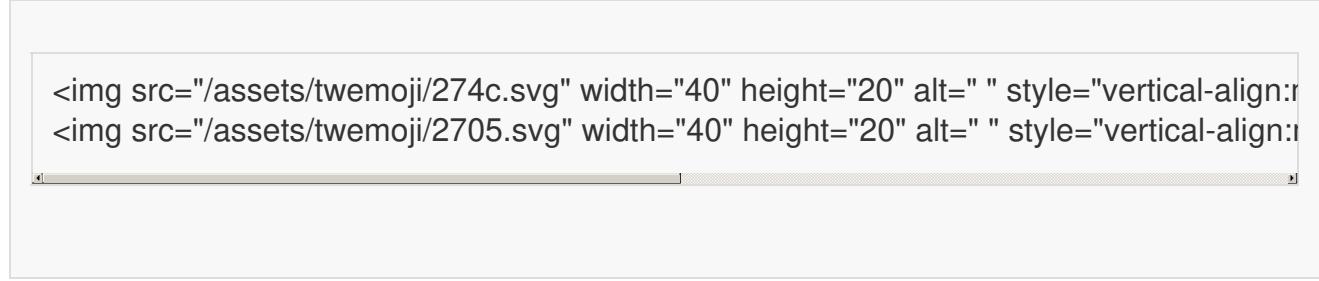
- If someone sees your OpenRouter API key, they can use YOUR credits
- If someone gets your Supabase keys, they can access YOUR database

- API keys = passwords to your services

How your app works WITHOUT exposing keys

Your app uses **environment variables** which are stored securely on the server:

1. **Local Development (.env.local)** - Only on your computer
2. **Production (Vercel)** - Stored in Vercel's secure dashboard
3. **Your Code** - Only references the variable names, NOT the actual keys



```


```

A screenshot of a code editor showing two lines of code. The first line contains an image tag with a source path starting with '/assets/twemoji/274c.svg'. The second line contains an image tag with a source path starting with '/assets/twemoji/2705.svg'. Both lines have 'width="40" height="20" alt=" "' and 'style="vertical-align:middle; margin-right: 10px;"' attributes.

When deployed, Vercel injects these keys at runtime, so they're never exposed to users.

Deploy to Vercel

Vercel is **FREE** and perfect for Next.js apps. GitHub Student Pack gives you extra benefits!

Step 1: Create Vercel Account

1. Go to <https://vercel.com>
2. Click "Sign Up"
3. Choose "Continue with GitHub"
4. Authorize Vercel to access your GitHub

Step 2: Push Your Code to GitHub

```
# If you haven't initialized git yet
git init
git add .
git commit -m "Initial commit - DSA Tutor app"

# Create a new repository on GitHub (github.com/new)
# Then connect and push:
git remote add origin https://github.com/YOUR-USERNAME/dsa-tool.git
git branch -M main
git push -u origin main
```

Step 3: Import Project to Vercel

1. Go to <https://vercel.com/new>
 2. Click "Import Git Repository"
 3. Select your dsa-tool repository
 4. Configure project:
 - **Framework Preset:** Next.js (should auto-detect)
 - **Root Directory:** ./ (leave as default)
 - **Build Command:** npm run build (auto-filled)
 - **Output Directory:** .next (auto-filled)
 5. **IMPORTANT:** Before clicking "Deploy", click "Environment Variables"
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Configure Environment Variables

You need to add your API keys to Vercel so your app can use them.

Step 1: Add Environment Variables in Vercel

In the Vercel deployment screen, add these variables:

Required Variables:

Variable Name	Where to Get It	Example Value
NEXT_PUBLIC_SUPABASE_URL	Supabase Dashboard → Settings → API	https://xxxxx.supabase.co
NEXT_PUBLIC_SUPABASE_ANON_KEY	Supabase Dashboard → Settings → API → anon public	eyJhbGciOi... (long key)
SUPABASE_SERVICE_ROLE_KEY	Supabase Dashboard → Settings → API → service_role	eyJhbGciOi... (long key)
OPENROUTER_API_KEY	OpenRouter Dashboard → Keys	sk-or-v1...

Optional (but recommended):

Variable Name	Value	Purpose
RATE_LIMIT_MAX_REQUESTS	20	Max requests per minute per user
RATE_LIMIT_WINDOW_MS	60000	Rate limit window (60 seconds)

Step 2: How to Find Your Keys

Supabase Keys:

1. Go to <https://supabase.com/dashboard>
2. Select your project
3. Click "Settings" () in sidebar
4. Click "API"

5. Copy:
 - URL → NEXT_PUBLIC_SUPABASE_URL
 - anon public → NEXT_PUBLIC_SUPABASE_ANON_KEY
 - service_role → SUPABASE_SERVICE_ROLE_KEY (⚠ KEEP THIS SECRET!)

OpenRouter API Key:

1. Go to <https://openrouter.ai/keys>
2. Copy your API key
3. Paste as OPENROUTER_API_KEY

Step 3: Deploy!

1. After adding all environment variables, click "Deploy"
 2. Wait 2-3 minutes for build to complete
 3. You'll get a URL like: <https://dsa-tool-abc123.vercel.app>
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Setup Custom Domain

With GitHub Student Pack, you get a **FREE .me domain** from Namecheap!

Step 1: Get Free Domain

1. Go to <https://education.github.com/pack>
2. Find "Namecheap" in the list
3. Click "Get access" → Get your free .me domain for 1 year
4. Choose a domain name (e.g., dsatutor.me, codepractice.me)
5. Complete registration

Step 2: Connect Domain to Vercel

1. In Vercel, go to your project
2. Click "Settings" → "Domains"
3. Click "Add Domain"

4. Enter your domain (e.g., dsatutor.me)
5. Vercel will show DNS records to add

Step 3: Update DNS in Namecheap

1. Go to Namecheap Dashboard → Domain List
2. Click "Manage" on your domain
3. Go to "Advanced DNS"
4. Add these records (Vercel will tell you exact values):

Type: A Record

Host: @

Value: 76.76.21.21

Type: CNAME Record

Host: www

Value: cname.vercel-dns.com

5. Wait 5-30 minutes for DNS to propagate
 6. Your site will be live at <https://yourdomain.me>
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Verify Deployment

Test Your Deployment:

1. Visit your site - Open your Vercel URL or custom domain
2. Test problem solving:
 - Go to "Solve Problem" page
 - Paste a coding problem
 - Click "Analyze Problem" - Should work!

- Request hints - Should work!
 - Submit code - Should work!
3. **Check history** - Your sessions should save
 4. **Check patterns** - Pattern tracking should work

Common Issues After Deployment:

✗ "Failed to analyze problem"

- **Cause:** OpenRouter API key not set or invalid
- **Fix:** Go to Vercel → Settings → Environment Variables → Check OPENROUTER_API_KEY

✗ "Database error" or "Failed to fetch history"

- **Cause:** Supabase keys not set correctly
- **Fix:** Verify all 3 Supabase environment variables in Vercel

✗ "Rate limit exceeded"

- **Cause:** Too many requests (normal behavior)
 - **Fix:** Wait 1 minute or increase RATE_LIMIT_MAX_REQUESTS
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Post-Deployment Checklist

- [] Site loads at your URL
 - [] Can analyze problems
 - [] Can get hints (all 5 levels)
 - [] Can submit code and get feedback
 - [] History page shows past problems
 - [] Patterns page tracks progress
 - [] Custom domain working (if set up)
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Sharing Your App

Now that your app is deployed, you can share it with:

- **Friends:** Send them your URL
- **Resume/Portfolio:** Add as a project
- **Social Media:** Share on LinkedIn, Twitter
- **GitHub README:** Add deployment link

Add Deployment Badge to GitHub

Add this to your repository's README.md:

```
##  [Visit DSA Tutor](https://your-domain.me)  
**[Visit DSA Tutor](https://your-domain.me)** ← Replace with your URL  
[![Deploy with Vercel](https://vercel.com/button)](https://vercel.com/new/clone?repository-url=https://github.com/yourusername/yourrepositoryname)
```

Troubleshooting

Build Failed on Vercel

Error: Type error: Property 'X' does not exist

- **Fix:** Run `npm run build` locally first to catch TypeScript errors

Error: Module not found

- **Fix:** Make sure all dependencies are in `package.json`, run `npm install`

Environment Variables Not Working

1. Check spelling (case-sensitive!)
2. Remove quotes around values in Vercel

3. Redeploy after adding variables (click "Redeploy" in Vercel)

Database Connection Issues

1. Verify Supabase project is not paused (free tier auto-pauses after inactivity)
2. Check Row Level Security (RLS) policies allow public access for anonymous users
3. Test Supabase connection in their dashboard SQL editor

OpenRouter API Not Working

1. Check your OpenRouter credits: <https://openrouter.ai/credits>
 2. Verify model availability: nvidia/nemotron-3-nano-30b-a3b:free
 3. Test API key with the test script: node test-openrouter.js
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Cost Breakdown (FREE!)

Service	Cost	What You Get
Vercel	FREE	Hosting, SSL, CDN, Auto-deployments
Supabase	FREE	Database, 500MB storage, 2GB bandwidth
OpenRouter	FREE	\$0.20 free credits (~200 requests)
Domain (.me)	FREE (1 year)	From GitHub Student Pack
Total	\$0	Fully functional app!

After Free Credits:

- **OpenRouter:** Pay as you go (\$0.0002 per request with free model)
 - **Domain:** ~\$10/year to renew
 - **Vercel:** Free forever for hobby projects
 - **Supabase:** Free forever (with limits)
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Updating Your Deployed App

When you make changes:

```
# 1. Make your changes locally  
# 2. Test them (npm run dev)  
# 3. Commit and push to GitHub  
git add .  
git commit -m "Description of changes"  
git push  
  
# 4. Vercel automatically detects and redeploys! 
  2. **Supabase Docs:** <https://supabase.com/docs>
  3. **Next.js Docs:** <https://nextjs.org/docs>
  4. **Check Vercel Logs:** Project → Deployments → Click deployment → Logs
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## Congratulations!

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You've deployed your first full-stack application!

Your app is now live and accessible to everyone on the internet.

### Next Steps:

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- Share your project on LinkedIn
- Add it to your resume/portfolio
- Get feedback from friends
- Keep building and improving

Good luck with your DSA learning journey! A small rocket ship icon.

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## Appendix: Manual Deployment (Alternative)

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If you prefer not to use Vercel, here are alternatives:

### Option 2: Railway

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- Similar to Vercel, free tier available
- <https://railway.app>

### Option 3: Netlify

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- Another Vercel alternative
  - <https://netlify.com>

## **Option 4: Self-hosting (VPS)**

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- Requires more setup
- Options: DigitalOcean, AWS, Google Cloud (free credits in GitHub Student Pack)
- Not recommended for beginners

**Recommended:** Stick with Vercel for easiest deployment!