

College Algebra Platform - Development Handoff Document

Date: December 15, 2025

Status: 85% Complete - Ready for Final Phase

Project Path: /home/ubuntu/college_algebra_website



QUICK START FOR NEW CONTEXT

Copy and paste this into a new conversation:

I'm continuing development on the College Algebra Learning Platform.

Project: /home/ubuntu/college_algebra_website

GitHub: https://github.com/mltmacster/college_algebra_website

Deployment: master-algebra.abacusai.app

Please read /home/ubuntu/college_algebra_website/DEVELOPMENT_HANDOFF.md for full context, then proceed with the remaining tasks.



CURRENT STATUS

Completed (85%)

Feature	Status	Notes
Core Platform	✓ 100%	Auth, DB, Navigation
6 Learning Modules	✓ 100%	Content structure complete
30 Practice Problems	✓ 100%	5 per module
AI Tutor "Unk"	✓ 100%	Chatbot integrated
Badge System	✓ 100%	Achievement tracking
Analytics Dashboard	✓ 100%	Instructor portal
GitHub CI/CD	✓ 100%	Actions configured
TypeScript	✓ Pass	No errors
Production Build	✓ Pass	17 pages

Remaining (15%)

Task	Priority	Effort
Add more practice problems	High	2-3 hours
Fix font CDN issue	Medium	30 min
Final testing	Medium	1 hour
Production deployment	Low	10 min

🔧 TECHNICAL DETAILS

Technology Stack

- **Framework:** Next.js 14.2.28 (App Router)
- **Language:** TypeScript 5.2.2
- **Database:** PostgreSQL via Prisma 6.7.0
- **Auth:** NextAuth.js 4.24.11
- **Styling:** Tailwind CSS 3.3.3
- **Package Manager:** Yarn 4.9.4

Key Files

```

app/
├── components/
│   ├── practice-session.tsx      # Practice problems UI
│   ├── module-content.tsx       # Module renderer
│   └── module-data/              # Module content files
└── lib/
    ├── interactive-problems.ts  # Problem definitions (30 total)
    ├── db.ts                     # Database utilities
    └── prisma/
        └── schema.prisma        # Database schema
└── app/
    ├── modules/[slug]/page.tsx # Dynamic module pages
    └── api/                      # API routes

```

Database Schema (10 models)

- User, LearningModule, ModuleProgress
- Badge, UserBadge, ContactSubmission
- Plus analytics models

Environment Variables (.env)

```

DATABASE_URL=postgresql://...
NEXTAUTH_SECRET=...
NEXTAUTH_URL=http://localhost:3000
NEXT_PUBLIC_APP_URL=http://localhost:3000

```

MODULES OVERVIEW

#	Module	Slug	Problems
1	Real Number Systems	real-number-systems	5
2	Linear Equations	linear-equations	5
3	Functions & Graphing	functions-graphing	5
4	Quadratic Functions	quadratic-functions	5
5	Exponential Functions	exponential-functions	5
6	Sequences & Series	sequences-series	5

Total: 30 practice problems with business context

DEVELOPMENT PLAN

Phase 1: Content Enhancement (Optional)

Add more practice problems to each module:

- Target: 10-15 problems per module
- File: `app/lib/interactive-problems.ts`
- Focus: Business-focused scenarios

Phase 2: Bug Fixes

1. **Font CDN Error** (cosmetic)
 - Replace external font CDN with Next.js fonts
 - File: `app/app/layout.tsx`

Phase 3: Deployment

1. Run `test_nextjs_project`
2. Run `build_and_save_nextjs_project_checkpoint`
3. Deploy via UI button or `deploy_nextjs_project`

IMPORTANT LINKS

- **GitHub:** https://github.com/mltmacster/college_algebra_website
- **Actions:** https://github.com/mltmacster/college_algebra_website/actions
- **Deployment:** master-algebra.abacusai.app
- **Preview:** Available in DeepAgent UI

KEY DOCUMENTATION

Document	Location	Purpose
Turnkey Solution	/home/ubuntu/TURN-KEY_SOLUTION_COMPLETE_ROADM_AP.md	Full 90-day plan
Production Plan	PRODUCTION_READINESS_PLAN.md	Deployment checklist
GitHub Setup	GIT-HUB_SETUP_INSTRUCTIONS.md	CI/CD guide
Execution Plan	/home/ubuntu/FINAL_EXECUTION_PLAN.md	Step-by-step tasks

QUICK COMMANDS

```
# Navigate to project
cd /home/ubuntu/college_algebra_website/app

# Install dependencies
yarn install

# Generate Prisma client
yarn prisma generate

# Run development server
yarn dev

# Type check
yarn tsc --noEmit

# Build for production
yarn build
```

KNOWN ISSUES

- 1. Font CDN Warning** (Non-blocking)
 - Error: `ERR_BLOCKED_BY_RESPONSE.NotSameOrigin` from cdnfonts.com
 - Impact: Cosmetic only, doesn't affect functionality
 - Fix: Replace with Next.js font optimization
- 2. Duplicate Badge Images** (Expected behavior)
 - Same badge images shown on homepage preview
 - This is intentional design, not a bug

VERIFICATION CHECKLIST

Before deployment, verify:

- [] `yarn tsc --noEmit` passes
 - [] `yarn build` completes successfully
 - [] All 6 modules load correctly
 - [] Practice problems work for each module
 - [] Login/Register functions properly
 - [] Badge system awards correctly
 - [] AI tutor responds
-

CONTEXT FOR AI ASSISTANT

This is a College Algebra Learning Platform for business students featuring:

1. 6 interactive learning modules with business context
2. AI tutor named “Unk” with street-savvy personality
3. Digital badge achievement system
4. Instructor analytics portal
5. 30+ practice problems with real-world business scenarios

The app is 85% complete and production-ready. Main remaining work is optional content enhancement and final deployment.

END OF HANDOFF DOCUMENT