

Bridge 4Devs 4-Week AI-Assisted Development Curriculum

Week 1: Introduction and Mindset Shift -

Session 1 (Saturday): Introduction to AI-Assisted Development (Online)

- Course overview and the evolving landscape of software engineering.
- Introduction to AI tools (Claude, GitHub Copilot, ChatGPT) with practical demos.
- Benefits of AI-assisted development in real-world scenarios.

Session 2 (Monday): Hands-on AI Exploration

- Practical exercises comparing traditional vs. AI-assisted development
 - Build a responsive React component with and without AI
 - Create a Django model and API view with and without AI
- Discussion: Balancing AI assistance with critical thinking

Session 3 (Wednesday): Project Kickoff - Task Management Application

- Introduce the full-stack project: Task Management Application
 - Frontend: React with Tailwind CSS
 - Backend: Python with Django and Django Rest Framework (DRF)
 - Database: PostgreSQL
- Use AI to generate project requirements, user stories, and initial architecture
- Begin project setup with AI assistance (repository creation, project scaffolding)

Week 2-3: Extended Project Development

Session 4 (Monday): Frontend Development with AI

- AI-assisted React component development
- State management setup (Zustand or Context API) using AI
- Styling with Tailwind CSS via AI suggestions

Session 5 (Wednesday): Backend API Development with Django and DRF

- Design Django models with AI assistance
- Implement DRF serializers and viewsets using AI
- Set up URL routing and API endpoints

Session 6 (Friday): Authentication and Database Operations

- Implement JWT authentication in Django with AI help
- Database schema optimization and complex queries with AI
- Create custom management commands for data operations

Session 7 (Monday): Advanced Django and DRF Features

- Implement filtering, pagination, and nested serializers with AI assistance
- Create custom permissions and throttling classes
- Optimize database queries and use caching strategies

Session 8 (Wednesday): Testing and Documentation

- Write unit and integration tests for Django views and models using AI
- Generate API documentation with drf-yasg and AI assistance
- Implement logging and error handling in Django

Session 9 (Friday): Deployment and DevOps

- Set up a development environment with Docker using AI
- Configure CI/CD pipeline with GitHub Actions and AI
- *Deploy the application to a cloud platform (e.g., Heroku, DigitalOcean)

Session 10 (Monday): Project Refinement and Peer Review

- AI-assisted code review sessions
- Performance optimization with AI suggestions
- Prepare for final presentations

Week 4: Individual Projects and Wrap-up

Session 11 (Wednesday): Individual Project Kickoff

- Introduction of individual project themes (full-stack web applications):
 1. E-commerce platform
 2. Social media dashboard
 3. Project management tool
 4. Fitness tracking application
- AI-assisted project planning and initial setup
- Begin individual project development

Session 12 (Friday): Final Presentations and Conclusion

- Morning: Continue individual project development
- Afternoon:
 - Task Management Application demonstrations
 - Individual project progress presentations
 - Reflection on the AI-assisted development process
 - Discussion: The future of AI in software engineering
 - Course wrap-up and next steps