**📋 QuickForms AI**

***Smart Form & Workflow Builder***

**Course:** CSC 318 – Software Engineering Principles  
**Assignment:** Final Project – QuickForms AI  
**Deliverable:** *Readme.md*  
**Project Title:** QuickForms AI – Smart Form & Workflow Builder

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**Date:** August 2025

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**📌 Project Overview**

QuickForms AI is a lightweight, AI-powered form generator designed for **small businesses, clubs, events, student teams, and individuals**.

The system provides an **AI-assisted way** to create and manage forms, integrate responses with tools like Google Sheets, and streamline workflows without requiring programming knowledge.

* Build forms in minutes
* Share via a simple link
* Collect and store responses
* Export results to CSV for reporting

**🎥 Demo & Screenshots**

* YouTube Demo: *(Insert Link)*
* Example Screenshots:
  + **Form Builder UI**
  + **Dashboard with responses**
  + **CSV export view**

**🚀 Features**

* **Form Builder:** Add text, numbers, checkboxes, dropdowns, radio buttons, dates
* **AI Assistance:** Generate form fields from natural language prompts
* **Form Sharing:** Public shareable links for distribution
* **Response Collection:** Secure storage via SQLite (default) or Postgres
* **Data Integration:** Export submissions to CSV / Google Sheets
* **Responsive Frontend:** React + Vite + TypeScript
* **Backend API:** Express + Prisma ORM
* **Testing:** Unit, integration, and system tests

**🏗️ Tech Stack**

|  |  |  |
| --- | --- | --- |
| Layer | Technology | Purpose |
| Frontend | React + Vite + TypeScript | Dynamic, responsive UI |
| Backend | Express.js + TypeScript | API endpoints & AI integration |
| Database | Prisma ORM + SQLite/Postgres | Form & response storage |
| Testing | Vitest + Supertest | Unit, integration, system tests |
| Build Tools | pnpm, PowerShell automation | Dependency management & builds |

**📂 Project Structure**

quickforms-ai/

│

├── apps/

│ ├── web/ # React (Vite) frontend

│ └── api/ # Express backend (TypeScript + Prisma)

│

├── docs/ # Reports, UML diagrams, user & dev manuals

│ ├── diagrams/

│ ├── reports/

│ └── user-manual/

│

├── prisma/ # Database schema & migrations

├── tests/ # Unit & integration tests

│

├── README.md # This file

├── package.json

└── .gitignore

**⚡ Getting Started**

**1. Clone the Repository**

git clone https://github.com/YOUR-USERNAME/quickforms-ai.git

cd quickforms-ai

**2. Install Dependencies**

**Frontend:**

cd apps/web

npm install

**Backend:**

cd ../api

npm install

**3. Configure Environment**

Create .env inside apps/api/:

DATABASE\_URL="file:./dev.db"

PORT=4000

OPENAI\_API\_KEY="your\_api\_key\_here"

**4. Run Locally**

**Frontend** → <http://localhost:5173>

cd apps/web

npm run dev

**Backend** → <http://localhost:4000>

cd apps/api

npm run dev

**🧪 Testing**

Run automated tests:

npm run test

**Test Coverage Includes:**

* ✅ Unit tests (functions & components)
* ✅ Integration tests (API endpoints)
* ✅ System tests (form creation → submission → CSV export)
* ✅ Manual peer code review

**📖 Documentation**

* 📘 **Final Report** → /docs/final-report/report.pdf
* 👨‍💻 **Developer Guide** → /docs/developer-guide/developer.pdf
* 🧑‍🦱 **User Manual** → /docs/user-manual/manual.pdf
* 🧪 **Testing Report** → /docs/reports/testing.pdf
* 📝 **Code Review Summary** → /docs/reports/code-review.pdf
* 📊 **UML Diagrams** → /docs/diagrams/uml.pdf
* 📑 **SRS (Requirements Spec)** → /docs/reports/SRS.pdf

**📦 Packaging**

To build a final submission bundle:

.\all-in-finals-build.ps1

This creates quickforms-ai-final.zip containing all deliverables.

**🔮 Roadmap**

* Add **user authentication & roles**
* Introduce **analytics dashboard**
* Expand **AI-driven smart form generation**
* Deploy to **Vercel (frontend)** + **Render/Heroku (backend)** with Postgres

**👥 Development Process**

* Agile methodology with **2-week sprints**
* Unified Process (UP) for requirement → design → implementation → test cycle
* Git-based collaboration with feature branches & pull requests
* Peer review before merging

**🎓 Course Context**

This project was developed for **CSC 318 – Software Engineering Principles (UAT)**.  
It demonstrates **end-to-end SDLC coverage**: requirements engineering, UML modeling, system design, Agile implementation, testing, documentation, and presentation.

**🏆 Lessons Learned**

* Applied **Agile & Unified Process** effectively
* Designed & implemented **layered MVC architecture**
* Practiced **object-oriented design principles**
* Conducted **unit, integration, and system testing**
* Strengthened **team workflow using Git & GitHub**

**📜 License**

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Free to use, extend, and adapt.