DLOPER OS + DLOPER OS EDU + CLASSCONNECT — FULL PRODUCT SPECIFICATION

Here is a full, detailed, production-quality product plan you can give directly to ChatGPT Codex so it can generate the full system (OS components, backend, frontend, installer, Dloper EDU edition, etc.) without guessing anything.

This is formatted as a single master specification for Codex.
You can copy/paste it directly into a new chat with Codex.

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Master Specification for ChatGPT Codex to Build the Full System

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1. Project Summary

The goal is to build:

A. Dloper OS
A Raspberry Pi OS–based operating system that runs on Raspberry Pi 5 hardware (the "Local-M1"), providing a local web interface for hosting websites, apps and services.

B. Dloper OS EDU Edition
A special edition of Dloper OS designed for schools, containing:
• ClassConnect (school management system)
• School website hosting
• A simple UI for staff (non-technical)
• Automatic setup via a local web page on first boot
• Backup/restore
• System health dashboard
• Container control (start/stop/restart apps)
• Network/domain config

C. ClassConnect
A full school platform similar to ClassCharts, including:
• Backend (Node.js + TypeScript + Fastify/Express)
• PostgreSQL database
• Prisma ORM
• Static frontend (HTML/CSS/JS) or React (Codex can choose based on complexity)
• Role-based dashboards (teacher, student, admin)
• Multi-school backend structure
• Deployable locally on Dloper OS EDU

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2. Target Hardware
All versions of the OS and apps run on:
• Raspberry Pi 5 (Codename: "Local-M1", 8GB RAM)
• Booted from microSD card
• Optional USB SSD

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3. High-Level Architecture

3.1 Base OS
• Raspberry Pi OS Lite
• Headless
• SSH enabled
• Docker + Docker Compose
• Tailscale

3.2 Core Services (Docker)
• reverse-proxy
• classconnect-backend
• classconnect-frontend
• classconnect-db
• school-website
• dloper-panel

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4. Dloper OS Installer System
• Dloper OS Installer ISO
• Install Standard / PRO / EDU
• Installer writes OS + Docker + Panel
• Reboot → hosts http://dloper.local
• First-boot setup wizard

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5. Dloper OS Web Panel

Features:
• System Overview (CPU, RAM, disk, temp, uptime)
• App Management (start/stop/restart)
• File Manager
• Backups
• Network Manager
• Tailscale setup
• Software Updates

Technology:
• Node.js backend
• React or HTMX frontend
• Local admin auth

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6. ClassConnect System Specification

Backend:
• Node.js + TypeScript
• Fastify/Express
• Prisma ORM
• PostgreSQL
• JWT Auth

Frontend:
• HTML/CSS/JS or React

• Matches classconnect.dloper.com style
• Token auth

Database:
• users
• schools
• classes
• enrolments
• timetable_entries
• homework
• homework_submissions
• behaviour_events

Routes:
• POST /auth/login
• POST /auth/logout
• POST /auth/register
• GET /me
• GET /dashboard
• GET /classes
• POST /classes/create
• GET /timetable/today
• POST /timetable/add
• GET /homework
• POST /homework/create

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7. EDU Edition Behavior
• ClassConnect auto-starts
• School Setup Wizard

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8. Docker Compose Specification
ARM64 compatible services.

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9. Installer Build System
• Uses pi-gen or custom scripts
• Produces .img file
• Editions: S, PRO, EDU

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10. Deliverables
• Full folder structure
• All code (backend, frontend, installer)
• Full documentation
• Wizard implementation

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11. Special Notes
• Everything ARM64 compatible

• Modern UI
• Modular design
• Secure env handling

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12. Final line
“Codex: Please generate the entire project exactly to this specification, fully coded, with all folder structures, all files, and all installer components.”