📘 Nexus Universe 3.0 – Master Plan

# Overview

Nexus Universe 3.0 is a globally scalable, AI-powered virtual school ecosystem for ages 4–16. It supports multiple curricula (NG, UK, IPC, IB, CAIE, SG) and provides full automation, security, and scalability through modern DevOps practices, gamification, and embedded AI.

# Core Objectives & Features

* • Multi-curricula support (NG+UK+IPC+IB+CAIE+SG)
* • JWT + refresh tokens + 2FA security
* • Course/Module/Lesson/Quiz engine
* • Timetable, calendar, and notification generator by role
* • Autogenerated VR, handwriting tracing, and math reading tools
* • Autograding + proctoring assessments
* • Payments via Paystack + 3% commission flows
* • Institution onboarding with global commission
* • Gamification, adaptive AI learning engine
* • DRM protection (no copy/paste/screenshot/snipping)
* • Automated GPT-powered marketing campaigns
* • CI/CD-ready (GitHub Actions), live docs, backups, monitoring
* • REST+GraphQL APIs, React/Next.js frontend

# Tools & Technologies (Free/Low-Cost)

* Backend: Node.js + Express + Prisma + PostgreSQL
* Auth: jsonwebtoken + bcrypt + otplib
* Validation: Zod
* Frontend: Next.js + React Hook Form + Zod + Tailwind CSS
* VR/Tracing: Three.js or Pixi.js
* CI/CD: GitHub Actions + Docker
* Monitoring: Prometheus, Grafana
* Deployment: Vercel (frontend), Railway / Azure (backend)
* DRM: Overlay + Watermark.js + Screenshot blockers
* Payments: Paystack SDK + webhooks
* Marketing: GPT + Bannerbear + Buffer API
* Docs: swagger-jsdoc + swagger-ui-express + MkDocs
* DB backups: pg\_dump + AWS S3 or Railway
* Versioning: Git semver, conventional commits

# Chain of Feature Delivery (MVP Roadmap)

1. 1. Scaffold repo structure
2. 2. JWT-auth + user registration + 2FA
3. 3. Prisma schema + migrations
4. 4. Controllers + routes + Zod validation
5. 5. Postman test suite + Swagger UI
6. 6. Frontend forms with Next.js
7. 7. Embed VR/tracing components in lessons
8. 8. Timetable/calendar/notification automation
9. 9. Assessment, proctoring + badge engine
10. 10. Paystack + commission logic
11. 11. DRM screenshot blocker
12. 12. Admin dashboard + CI/CD deployment
13. 13. AI marketing + media generation
14. 14. Docs auto-update system
15. 15. Backups, monitoring, Docker, observability
16. 16. Final production packaging with tags + versioning

# Outputs To Generate

* • Google Doc + Notion plan with TOC and timelines
* • GitHub-ready scaffold: backend/, frontend/, docs/, infra/
* • Initial Swagger YAML and endpoint stubs
* • Postman test suite for all endpoints
* • Zipped file with README.md, CI/CD yml, docs starter
* • Instructions on updating the 'living document'