Module 3: Backend & Full-Stack Integration

Duration: 4 Weeks
Study Mode: Online — 4 hours/day (Flexible Schedule)
Price: KES 7,000

Objective:
Equip learners with backend development skills using **Python**, **Django**, and **Django REST Framework**, and integrate the backend with a React frontend. Learners will also deploy full-stack applications using **Supabase** and **Vercel**.

Target Audience

- Learners who have completed **Module 2**

- React developers ready to transition into full-stack development

- Computer science students and junior developers looking to master backend and deployment

- Freelancers or startup builders needing full-stack skills

Weekly Breakdown

Week 1: Backend Development with Django

Topics:

- Introduction to Python for backend

- Setting up Django environment (using virtualenv or pipenv)

- Django project vs app structure

- Models, Migrations, and Admin interface

- Views, Templates, and URL Routing

- Building a basic CRUD app (e.g., blog or task manager)

Practical Tasks:

- Set up a Django project and connect it to **PostgreSQL**

- Create a basic model and use the Django admin

- Build simple form-based views for data entry

Week 2: APIs with Django REST Framework

Topics:

- Introduction to RESTful APIs

- Setting up Django REST Framework (DRF)

- Serializers, Viewsets, and Routers

- Building CRUD APIs for a model

- API testing using Postman

- Authentication: Token-based and JWT with djoser/simplejwt

Practical Tasks:

- Build a blog or portfolio API

- Implement authentication endpoints (register, login)

- Protect routes using JWT

Week 3: Full-Stack Integration (React + Django)

Topics:

- Introduction to CORS, connecting frontend to backend

- Consuming DRF APIs in React (using axios)

- React auth using tokens (login/logout/register flows)

- Building dashboards with real-time data from backend

- Optimizing data fetching and error handling

Practical Tasks:

- Create a **React + Django** full-stack dashboard

- Build authenticated pages (e.g., profile, posts, settings)

- Handle protected routes in frontend

Week 4: Deployment & Real-World Workflows

Topics:

- Hosting backend on Supabase (PostgreSQL) or Render

- Deploying Django backend (static/media setup, security configs)

- Frontend deployment on **Vercel**

- Connecting frontend + backend in production

- Environment variables, secret keys, and deployment settings

- Version control workflows (Git, GitHub branching)

Final Project:

- Build and deploy a **Full-Stack App**:

    ○ Django REST API + PostgreSQL

    ○ React frontend

    ○ JWT authentication

    ○ Deployed on **Vercel + Supabase/Render**

Learning Outcomes

By the end of Module 3, learners will:

- Build secure and scalable Django backends

- Design and expose RESTful APIs using DRF

- Integrate APIs into React frontends with authentication

- Deploy and maintain full-stack apps using modern tools

- Create real-world, portfolio-ready full-stack projects

🏆 Certification

Upon successful completion, learners receive a:

- **Dovepeak Certificate in Backend & Full-Stack Development**

🎓 Graduate Opportunities

Graduates will:

- Be invited for **backend/full-stack internships** at **Dovepeak Digital Solutions**

- Be considered for **freelance projects and junior developer roles**

- Have a deployable portfolio for job interviews and tech challenges

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Intake Information

Upcoming Intakes: July, August, September
Class Schedule: Monday to Thursday, 4 hours/day
Includes: class recordings, live Q&A, capstone project support