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PRODEV BACK-END

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Professional Foundations Programme

(your first 3 months)

What is Professional Foundations?

Professional Foundations is a foundational programme that helps young professionals develop the essential skills needed to excel in their careers.

Over 3 months, learners engage in a programme designed around practical skills and knowledge, specifically tailored to the modern tech workplace. Through a mix of individual projects, team-based challenges, and real-world applications, this programme builds a solid foundation for professional success.

Why is this Programme Important?

In today's job market, technical skills alone are not enough for a successful career. Employers seek well-rounded professionals who possess both technical know-how and soft skills—like communication, problem-solving, and leadership.

The Professional Foundations programme bridges this gap, empowering learners to navigate complex work environments with competence and confidence. This programme provides a complete toolkit for building the vital skills professionals need to succeed in a career in any industry.

Career Readiness

Learners gain critical professional skills that help them stand out in the workforce and succeed in tech-focused roles.

Collaborative Learning

Learners work in squads, encouraging peer-to-peer learning, teamwork, conflict resolution, and a culture of continuous growth. This experience also helps build a professional network, and networking skills, that will help learners grow their future careers.

Practical Application

The programme features hands-on exercises and deliverables that allow learners to immediately apply their newly acquired skills, making learning both engaging and relevant to the real world.

Key Components of the Programme

Professional Foundations emphasises 8 key Meta-Skills across Leadership, Analysis, and Execution—essential skill sets for thriving in today's workplace.

Tech Skills

Leading Self

Leading Others

**Communicating
for Impact**

Critical Thinking

**Quantitative
Reasoning**

**Managing
Complex Tasks**

**Entrepreneurial
Thinking**

7 Months (30 hrs per week)

What is ProDev Back-End Programme?

The ProDev Back-End Programme is an advanced 8-month online programme, consisting of 3 months of Professional Foundations followed by 5 months of specialised training. It's designed to equip learners with the technical expertise needed to excel as senior back-end developers. The programme focuses on mastering high-demand technologies such as Python, JavaScript, SQL, API development, microservices, and DevOps tools like Docker and Kubernetes.

With hands-on projects and expert-led guidance, learners will gain practical skills to design scalable systems, manage databases, and create robust back-end solutions for real-world applications.

Why ProDev Back-End Programme?

Backend engineering is a highly sought-after skill, driven by the need for secure, scalable systems that power everything from social media platforms to enterprise applications. This programme provides the expertise in technologies like Python, JavaScript, and Relational Databases, which are critical in today's job market.

The ProDev Back-End Programme goes beyond theory to offer hands-on experience and advanced training, enabling learners to build a professional portfolio. Learners will also gain access to a network of mentors and industry experts, helping them navigate career paths in senior back-end roles.

Programme Objectives

- **Develop Advanced Technical Skills:** Master critical technologies like Python, JavaScript, SQL, API development, microservices, and DevOps tools such as Docker and Kubernetes.
- **Build Job-Ready Competence:** Through hands-on projects, gain the practical experience needed to tackle complex back-end challenges and build solutions for real-world applications.
- **Prepare for Senior Roles:** Equip graduates to confidently pursue senior back-end positions such as Back-End Developer, API Specialist, and DevOps Engineer.
- **Enhance Career Opportunities:** Build a strong professional portfolio and gain the knowledge and industry connections necessary to succeed in high-level technical roles.

Why Choose Us?

ALX Foundations

Before starting the ProDev Back-End programme, learners complete our 3-month foundational training, where they acquire vital skills such as self-awareness, teamwork, communication, and critical thinking—essential for success in tech

Hands-On Learning

The programme emphasises practical application, with real-world projects that help you develop the skills required to build scalable systems and backend solutions. This hands-on approach ensures you gain valuable experience and create a portfolio that showcases your job-ready expertise.

Accelerated Career Growth

Gain access to a dynamic network of mentors, industry leaders, and peers who provide guidance, insights, and career advice. This network helps you build connections and accelerate your career development in senior back-end roles.

Job-Ready Focus

Designed with the industry in mind, the programme equips you with the practical skills needed to succeed in today's tech environment. From the first day, you'll focus on solving real-world challenges, ensuring you're prepared to meet the demands of modern backend development.

Tools Learners Get to Use



Python



MySQL



Docker



Kubernetes



GitHub
Actions



Jenkins



GraphQL

7-Month

Programme

100%

Digital (Online)
Learning
programme

30 hrs

Per Week

Specialisation

Content Breakdown

Part 01

- Project Planning and Database Design
- Advanced SQL querying
- **Advanced Python:** Generators, decorators, context managers, and asynchronous programming
- **Testing:** Unit tests, integration tests, and using pytest

Part 02

- Advanced Shell Commands and DevOps Introduction
- **CI/CD Pipelines:** Setting up continuous integration and deployment using tools like Jenkins, Travis CI, or GitHub Actions
- **Containerization:** Introduction to Docker and container orchestration with Kubernetes
- Integrating Third-Party Services and Microservices Architecture
- **Microservices:** Designing and implementing a microservices architecture
- **Message Queues:** Using RabbitMQ or Kafka for asynchronous communication

Part 03

- Security and Performance Optimization
- **Security Best Practices:** SQL injection, CSRF, XSS, and securing APIs
- **Authentication and Authorization:** JWT, OAuth, and Django's built-in auth system
- **Cons:** Scheduling and automating tasks using cron jobs
- **Caching:** Strategies and tools like Redis or Memcache for improving performance

Part 04

- **Bug Reporting Tools:** Integrating tools like Sentry or Bugzilla for monitoring and reporting bugs
- **Network Traffic Analysis:** Deep dive into network traffic analysis using advanced tools and techniques
- Final Project Implementation and Deployment