# 🗓️ InterPay: Daily Development Plan (Phase 4-5)

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## 📅 \*\*Phase 5: Production Ready & Deployment (Weeks 15-16)\*\*

### \*\*Week 15: Advanced DevOps & Monitoring\*\* (Mar 17 - Mar 23, 2025)

\*\*Day 99 - Mon, Mar 17\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Centralized logging with ELK stack

- \*\*Development\*\*:

- [ ] Set up Elasticsearch, Logstash, Kibana containers

- [ ] Implement structured logging across all services

- [ ] Add log aggregation and correlation

- [ ] Create log retention policies

- \*\*Success Check\*\*: All services logging to centralized ELK stack

\*\*Day 100 - Tue, Mar 18\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Distributed tracing concepts

- \*\*Development\*\*:

- [ ] Implement Jaeger distributed tracing

- [ ] Add trace context propagation between services

- [ ] Create custom span creation for business operations

- [ ] Implement trace sampling strategies

- \*\*Success Check\*\*: End-to-end request tracing across microservices

\*\*Day 101 - Wed, Mar 19\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Performance monitoring with Prometheus

- \*\*Development\*\*:

- [ ] Set up Prometheus metrics collection

- [ ] Implement custom business metrics

- [ ] Add performance baseline monitoring

- [ ] Create metric aggregation rules

- \*\*Success Check\*\*: Comprehensive metrics collection operational

\*\*Day 102 - Thu, Mar 20\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Grafana dashboard creation

- \*\*Development\*\*:

- [ ] Create operational dashboards (CPU, memory, latency)

- [ ] Build business dashboards (transactions, payments, users)

- [ ] Implement real-time alerting rules

- [ ] Add dashboard automation and sharing

- \*\*Success Check\*\*: Complete monitoring dashboard suite

\*\*Day 103 - Fri, Mar 21\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Kubernetes auto-scaling strategies

- \*\*Development\*\*:

- [ ] Implement Horizontal Pod Autoscaler configurations

- [ ] Add custom metrics for auto-scaling

- [ ] Create resource optimization policies

- [ ] Implement scaling event monitoring

- \*\*Success Check\*\*: Auto-scaling based on custom business metrics

\*\*Day 104 - Sat, Mar 22\*\* (4h dev)

- \*\*Development\*\*:

- [ ] Add advanced health check endpoints

- [ ] Implement graceful shutdown handling

- [ ] Create performance optimization configurations

- [ ] Add capacity planning documentation

- \*\*Success Check\*\*: Production-ready health and performance

\*\*Day 105 - Sun, Mar 23\*\* (4h dev)

- \*\*Weekly Review & Polish\*\*:

- [ ] Test monitoring and alerting end-to-end

- [ ] Validate auto-scaling under load

- [ ] Implement monitoring failover

- [ ] Document monitoring and operations procedures

- \*\*Week 15 Deliverable\*\*: ✅ Production-grade monitoring and operations

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### \*\*Week 16: Testing, Documentation & Deployment\*\* (Mar 24 - Mar 30, 2025)

\*\*Day 106 - Mon, Mar 24\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Comprehensive testing strategies

- \*\*Development\*\*:

- [ ] Implement unit tests for core business logic

- [ ] Add integration tests for service communication

- [ ] Create end-to-end payment flow tests

- [ ] Implement performance and load tests

- \*\*Success Check\*\*: Test suite with >80% code coverage

\*\*Day 107 - Tue, Mar 25\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: API documentation best practices

- \*\*Development\*\*:

- [ ] Implement OpenAPI 3 specifications for all APIs

- [ ] Add automated API documentation generation

- [ ] Create interactive API playground

- [ ] Implement API versioning documentation

- \*\*Success Check\*\*: Comprehensive, interactive API documentation

\*\*Day 108 - Wed, Mar 26\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Load testing and performance optimization

- \*\*Development\*\*:

- [ ] Create load testing scenarios with k6 or JMeter

- [ ] Implement performance baseline testing

- [ ] Add stress testing for peak loads

- [ ] Create performance optimization recommendations

- \*\*Success Check\*\*: System performance characterized and optimized

\*\*Day 109 - Thu, Mar 27\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Production deployment strategies

- \*\*Development\*\*:

- [ ] Create production deployment scripts

- [ ] Implement blue-green deployment configuration

- [ ] Add canary release capabilities

- [ ] Create rollback procedures

- \*\*Success Check\*\*: Zero-downtime deployment capabilities

\*\*Day 110 - Fri, Mar 28\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: CI/CD pipeline optimization

- \*\*Development\*\*:

- [ ] Implement comprehensive CI/CD pipeline

- [ ] Add security scanning in pipeline

- [ ] Create automated performance testing

- [ ] Implement quality gates and approvals

- \*\*Success Check\*\*: Fully automated production deployment pipeline

\*\*Day 111 - Sat, Mar 29\*\* (4h dev)

- \*\*Development\*\*:

- [ ] Create system architecture documentation

- [ ] Add operational runbooks

- [ ] Implement disaster recovery procedures

- [ ] Create troubleshooting guides

- \*\*Success Check\*\*: Complete operational documentation

\*\*Day 112 - Sun, Mar 30\*\* (4h dev)

- \*\*Final Project Review & Polish\*\*:

- [ ] Complete end-to-end system testing

- [ ] Final security audit and penetration testing

- [ ] Performance optimization final pass

- [ ] Create project demonstration script

- \*\*Week 16 Deliverable\*\*: ✅ Production-ready InterPay system

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## 🎉 \*\*Project Completion\*\* (Mar 31, 2025)

### \*\*Final Deliverables Checklist\*\*:

- [ ] \*\*12 Microservices\*\* fully operational in Kubernetes

- [ ] \*\*Payment Processing\*\*: Balance, Guest, Card, PayPal flows

- [ ] \*\*Wallet Management\*\*: Transfers, multi-currency support

- [ ] \*\*Payment Gateway\*\*: Braintree-like API for merchants

- [ ] \*\*Security\*\*: Fraud detection, rate limiting, encryption

- [ ] \*\*Monitoring\*\*: ELK, Prometheus, Grafana, Jaeger

- [ ] \*\*DevOps\*\*: CI/CD, auto-scaling, zero-downtime deployments

- [ ] \*\*Documentation\*\*: API specs, architecture, runbooks

- [ ] \*\*Testing\*\*: >80% coverage, performance, load tests

- [ ] \*\*Deployment\*\*: Production-ready on Kubernetes

### \*\*Skills Demonstrated\*\*:

- ✅ Microservices Architecture & Spring Boot

- ✅ Payment Systems & Financial Technology

- ✅ DevOps & Cloud Native Technologies

- ✅ Security & Compliance (PCI-like)

- ✅ System Design & Scalability

- ✅ API Design & Documentation

- ✅ Monitoring & Observability

- ✅ Testing & Quality Assurance

### \*\*Next Steps for Job Search\*\*:

1. \*\*Create Project Portfolio\*\* with detailed case study

2. \*\*Record Demo Video\*\* showing all features

3. \*\*Prepare Technical Talk\*\* about architecture decisions

4. \*\*Update Resume\*\* with quantifiable achievements

5. \*\*Practice System Design Interviews\*\* using your project as example

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## 🚀 \*\*Congratulations!\*\*

You've successfully built a production-ready PayPal clone that demonstrates expertise in:

- \*\*FinTech Payment Systems\*\*

- \*\*Microservices Architecture\*\*

- \*\*Cloud Native Development\*\*

- \*\*DevOps & SRE Practices\*\*

- \*\*Security & Compliance\*\*

This project positions you perfectly for $100K+ roles in FinTech companies as a Backend Engineer, Payment Engineer, or DevOps Engineer specializing in financial systems.

\*\*Ready to start your job search with an impressive project portfolio!\*\* 🎯