# 🗓️ InterPay: Daily Development Plan (Phase 2-5)

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## 📅 \*\*Phase 3: Payment Gateway & Processing (Weeks 8-11)\*\*

### \*\*Week 8: Payment Gateway Service\*\* (Jan 27 - Feb 2, 2025)

\*\*Day 50 - Mon, Jan 27\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Payment gateway architecture patterns

- \*\*Development\*\*:

- [ ] Design payment gateway API specifications

- [ ] Implement `POST /api/gateway/payments` endpoint

- [ ] Create payment intent management

- [ ] Add payment status tracking

- \*\*Success Check\*\*: Basic payment initiation working

\*\*Day 51 - Tue, Jan 28\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Idempotency in payment APIs

- \*\*Development\*\*:

- [ ] Implement idempotency key support

- [ ] Add idempotent payment processing

- [ ] Create idempotency key management

- [ ] Implement idempotency key expiration

- \*\*Success Check\*\*: Duplicate payments are prevented

\*\*Day 52 - Wed, Jan 29\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Webhook implementation best practices

- \*\*Development\*\*:

- [ ] Implement `POST /api/gateway/webhooks` endpoint

- [ ] Add webhook signature verification

- [ ] Create webhook retry mechanism

- [ ] Implement webhook event logging

- \*\*Success Check\*\*: Reliable webhook delivery system

\*\*Day 53 - Thu, Jan 30\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Merchant onboarding processes

- \*\*Development\*\*:

- [ ] Implement merchant account creation

- [ ] Add merchant API key management

- [ ] Create merchant dashboard endpoints

- [ ] Implement merchant settings management

- \*\*Success Check\*\*: Multi-tenant merchant support

\*\*Day 54 - Fri, Jan 31\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Payment gateway security

- \*\*Development\*\*:

- [ ] Implement API key authentication

- [ ] Add rate limiting per merchant

- [ ] Create merchant-level access controls

- [ ] Implement gateway security monitoring

- \*\*Success Check\*\*: Secure gateway API access

\*\*Day 55 - Sat, Feb 1\*\* (4h dev)

- \*\*Development\*\*:

- [ ] Add payment gateway analytics

- [ ] Implement gateway performance metrics

- [ ] Create gateway health dashboard

- [ ] Add gateway configuration management

- \*\*Success Check\*\*: Comprehensive gateway monitoring

\*\*Day 56 - Sun, Feb 2\*\* (4h dev)

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

- [ ] End-to-end gateway flow testing

- [ ] Load test gateway APIs

- [ ] Implement gateway failover mechanisms

- [ ] Document gateway API for merchants

- \*\*Week 8 Deliverable\*\*: ✅ Braintree-like payment gateway operational

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### \*\*Week 9: "Pay with InterPay Balance" Flow\*\* (Feb 3 - Feb 9, 2025)

\*\*Day 57 - Mon, Feb 3\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Saga pattern for distributed transactions

- \*\*Development\*\*:

- [ ] Implement `POST /api/payments/balance` endpoint

- [ ] Create balance check validation

- [ ] Add payment orchestration service

- [ ] Implement payment saga coordinator

- \*\*Success Check\*\*: Balance payment initiation working

\*\*Day 58 - Tue, Feb 4\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Compensation transactions in sagas

- \*\*Development\*\*:

- [ ] Implement rollback mechanisms for failed payments

- [ ] Add compensation transaction handling

- [ ] Create saga state persistence

- [ ] Implement saga timeout handling

- \*\*Success Check\*\*: Payment failures are properly rolled back

\*\*Day 59 - Wed, Feb 5\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Idempotency in payment flows

- \*\*Development\*\*:

- [ ] Implement `GET /api/payments/balance/check` endpoint

- [ ] Add balance reservation system

- [ ] Create payment confirmation flow

- [ ] Implement payment status synchronization

- \*\*Success Check\*\*: Balance payments are idempotent

\*\*Day 60 - Thu, Feb 6\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Payment confirmation workflows

- \*\*Development\*\*:

- [ ] Implement `POST /api/payments/balance/confirm` endpoint

- [ ] Add two-phase commit for balance updates

- [ ] Create payment confirmation notifications

- [ ] Implement confirmation expiry handling

- \*\*Success Check\*\*: Secure payment confirmation process

\*\*Day 61 - Fri, Feb 7\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Payment analytics and reporting

- \*\*Development\*\*:

- [ ] Add balance payment analytics

- [ ] Implement payment success rate tracking

- [ ] Create payment performance metrics

- [ ] Implement payment trend analysis

- \*\*Success Check\*\*: Comprehensive payment analytics

\*\*Day 62 - Sat, Feb 8\*\* (4h dev)

- \*\*Development\*\*:

- [ ] Add bulk balance payments

- [ ] Implement scheduled balance payments

- [ ] Create payment templates

- [ ] Add payment approval workflows

- \*\*Success Check\*\*: Advanced balance payment features

\*\*Day 63 - Sun, Feb 9\*\* (4h dev)

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

- [ ] Test balance payment edge cases

- [ ] Implement payment reconciliation

- [ ] Performance test balance payment flow

- [ ] Document balance payment APIs

- \*\*Week 9 Deliverable\*\*: ✅ Robust "Pay with InterPay Balance" flow

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### \*\*Week 10: "Pay with InterPay Guest" Flow\*\* (Feb 10 - Feb 16, 2025)

\*\*Day 64 - Mon, Feb 10\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Guest user session management

- \*\*Development\*\*:

- [ ] Implement `POST /api/payments/guest/session` endpoint

- [ ] Create guest session management

- [ ] Add guest session expiration

- [ ] Implement guest session security

- \*\*Success Check\*\*: Guest sessions can be created and managed

\*\*Day 65 - Tue, Feb 11\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: One-time payment processing

- \*\*Development\*\*:

- [ ] Implement `POST /api/payments/guest/process` endpoint

- [ ] Add guest payment validation

- [ ] Create guest payment limits

- [ ] Implement guest payment tracking

- \*\*Success Check\*\*: Guest payments can be processed

\*\*Day 66 - Wed, Feb 12\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Guest-to-user conversion strategies

- \*\*Development\*\*:

- [ ] Implement `POST /api/payments/guest/convert` endpoint

- [ ] Add guest data migration to user accounts

- [ ] Create conversion incentives tracking

- [ ] Implement conversion analytics

- \*\*Success Check\*\*: Guests can convert to registered users

\*\*Day 67 - Thu, Feb 13\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Limited functionality design patterns

- \*\*Development\*\*:

- [ ] Implement guest feature restrictions

- [ ] Add guest payment method limitations

- [ ] Create guest transaction limits

- [ ] Implement guest security restrictions

- \*\*Success Check\*\*: Appropriate limitations for guest users

\*\*Day 68 - Fri, Feb 14\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Guest user experience optimization

- \*\*Development\*\*:

- [ ] Add guest payment retry mechanisms

- [ ] Implement guest payment status notifications

- [ ] Create guest payment history

- [ ] Implement guest support endpoints

- \*\*Success Check\*\*: Positive guest user experience

\*\*Day 69 - Sat, Feb 15\*\* (4h dev)

- \*\*Development\*\*:

- [ ] Add guest analytics and reporting

- [ ] Implement guest conversion optimization

- [ ] Create A/B testing for guest flows

- [ ] Add guest feedback collection

- \*\*Success Check\*\*: Data-driven guest flow optimization

\*\*Day 70 - Sun, Feb 16\*\* (4h dev)

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

- [ ] Test guest payment security

- [ ] Implement guest fraud detection

- [ ] Performance test guest payment flow

- [ ] Document guest payment APIs

- \*\*Week 10 Deliverable\*\*: ✅ Seamless guest checkout experience

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### \*\*Week 11: PayPal Integration Simulation\*\* (Feb 17 - Feb 23, 2025)

\*\*Day 71 - Mon, Feb 17\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Third-party API integration patterns

- \*\*Development\*\*:

- [ ] Implement `POST /api/integrations/paypal/link` endpoint

- [ ] Create simulated PayPal OAuth flow

- [ ] Add PayPal account linking

- [ ] Implement PayPal connection status tracking

- \*\*Success Check\*\*: PayPal accounts can be linked to InterPay

\*\*Day 72 - Tue, Feb 18\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Balance synchronization patterns

- \*\*Development\*\*:

- [ ] Implement `GET /api/integrations/paypal/balance` endpoint

- [ ] Add PayPal balance caching

- [ ] Create balance synchronization service

- [ ] Implement balance update notifications

- \*\*Success Check\*\*: PayPal balances can be queried and cached

\*\*Day 73 - Wed, Feb 19\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Cross-platform transfer protocols

- \*\*Development\*\*:

- [ ] Implement `POST /api/integrations/paypal/transfer` endpoint

- [ ] Add PayPal-to-InterPay transfer processing

- [ ] Create InterPay-to-PayPal transfer processing

- [ ] Implement transfer fee calculation

- \*\*Success Check\*\*: Bi-directional transfers between platforms

\*\*Day 74 - Thu, Feb 20\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Webhook handling for external services

- \*\*Development\*\*:

- [ ] Implement PayPal webhook simulation

- [ ] Add webhook signature verification

- [ ] Create webhook event processing

- [ ] Implement webhook retry logic

- \*\*Success Check\*\*: Reliable webhook processing for PayPal events

\*\*Day 75 - Fri, Feb 21\*\* (4h dev + 1h learning)

- \*\*Learning\*\*: Account linking security

- \*\*Development\*\*:

- [ ] Implement `DELETE /api/integrations/paypal/unlink` endpoint

- [ ] Add account linking revocation

- [ ] Create linked account security monitoring

- [ ] Implement account linking analytics

- \*\*Success Check\*\*: Secure account linking management

\*\*Day 76 - Sat, Feb 22\*\* (4h dev)

- \*\*Development\*\*:

- [ ] Add PayPal integration analytics

- [ ] Implement integration performance metrics

- [ ] Create integration health monitoring

- [ ] Add integration troubleshooting endpoints

- \*\*Success Check\*\*: Comprehensive integration monitoring

\*\*Day 77 - Sun, Feb 23\*\* (4h dev)

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

- [ ] End-to-end PayPal integration testing

- [ ] Implement integration failover mechanisms

- [ ] Security audit of integration endpoints

- [ ] Document PayPal integration APIs

- \*\*Week 11 Deliverable\*\*: ✅ Full PayPal integration simulation

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## 🎯 \*\*End of Phase 3 Review\*\* (Feb 24, 2025)

\*\*Status Check\*\*:

- [ ] Braintree-like payment gateway operational

- [ ] "Pay with InterPay Balance" flow complete

- [ ] Guest checkout functionality implemented

- [ ] PayPal integration simulation working

- [ ] All payment methods integrated and tested

\*\*Phase 3 Complete!\*\* ✅ Payment processing ecosystem fully operational!

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\*[Continued in next message due to length...]\*