

Full End-to-End Mortgage Flow Scenario

Purpose: Complete API-driven flow from tenant bootstrap through mortgage completion.

Use Case: Guide Postman Flows design and E2E testing.

Last Updated: 2026-01-12

Test Location: [services/mortgage-service/tests/e2e/full-mortgage-flow/](#)

Summary

This scenario walks through the complete lifecycle of a 10/90 mortgage application, starting from tenant creation through to the first mortgage payment. All operations are performed via REST APIs—nothing is seeded manually or via direct database access.

Key Characteristics:

- 10% downpayment is **ONE_TIME** (single payment, not instalments)
- 90% mortgage at 9.5% p.a. over 20 years
- All configuration via REST API
- Complete KYC with document approval
- Full payment processing

Actors

Actor	Role	Organization	Description
System Admin	Bootstrap Operator	-	Uses bootstrap secret to initialize tenant
Adaeze	Mortgage Operations Officer	QShelter	Reviews documents (Stage 1: Internal), configures payment methods
Nkechi	Loan Officer	Access Bank	Reviews documents (Stage 2: Bank), uploads preapproval letter
Emeka	Developer Representative	Lekki Gardens	Reviews property-related documents
Chidi	Customer	-	First-time homebuyer, age 40

Two-Stage Document Approval

Documents requiring bank approval go through a two-stage process:

1. **Stage 1 (INTERNAL):** Adaeze (QShelter's Mortgage Operations Officer) reviews documents first
2. **Stage 2 (BANK):** Nkechi (Access Bank's Loan Officer) reviews after internal approval

Only after BOTH stages approve can the documentation phase complete.

Services Involved

Service	Port (Local)	Responsibilities
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user-service	3002	Auth, users, roles, permissions, tenant bootstrap
property-service	3003	Properties, variants, units
mortgage-service	Lambda	Payment plans, methods, applications, phases
notification-service	3004	Event handling, notifications
payment-service	3005	Wallet, payment processing

Prerequisites

- LocalStack running with SNS/SQS configured
- All services deployed locally
- Bootstrap secret configured: `BOOTSTRAP_SECRET=local-bootstrap-secret`

Phase 1: Tenant Bootstrap

Step 1.1: Bootstrap Tenant with Roles and Admin

The bootstrap endpoint creates the tenant, default roles (admin, user, mortgage_ops, finance, legal), their permissions, and the first admin user in a single idempotent operation.

```
POST {{userServiceUrl}}/admin/bootstrap-tenant
x-bootstrap-secret: {{bootstrapSecret}}
Content-Type: application/json

{
  "tenant": {
    "name": "QShelter Real Estate",
    "subdomain": "qshelter"
  },
  "admin": {
    "email": "adaeze@qshelter.com",
    "password": "SecureAdmin123!",
    "firstName": "Adaeze",
    "lastName": "Okonkwo"
  }
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "tenant": {
      "id": "{{tenantId}}",
      "name": "QShelter Real Estate",
      "subdomain": "qshelter",
      "isNew": true
    },
  },
}
```

```

"roles": [
  { "id": "...", "name": "admin", "isNew": true, "permissionsCount": 1 },
  { "id": "...", "name": "user", "isNew": true, "permissionsCount": 6 },
  {
    "id": "...",
    "name": "mortgage_ops",
    "isNew": true,
    "permissionsCount": 7
  },
  { "id": "...", "name": "finance", "isNew": true, "permissionsCount": 6 },
  { "id": "...", "name": "legal", "isNew": true, "permissionsCount": 5 }
],
"admin": {
  "id": "{{adaezeId}}",
  "email": "adaeze@qshelter.com",
  "isNew": true
}
}
}

```

Store Variables:

- `tenantId` → from response
- `adaezeId` → from response

Step 1.2: Admin Logs In

```

POST {{userServiceUrl}}/auth/login
Content-Type: application/json

{
  "email": "adaeze@qshelter.com",
  "password": "SecureAdmin123!"
}

```

Expected Response (200 OK):

```

{
  "success": true,
  "data": {
    "accessToken": "{{adaezeAccessToken}}",
    "refreshToken": "...",
    "expiresIn": 900
  }
}

```

Store Variables:

- `adaezeAccessToken` → for Authorization header

Step 1.3: Create QShelter Platform Organization

```
POST {{userServiceUrl}}/organizations
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
Content-Type: application/json

{
  "name": "QShelter",
  "type": "PLATFORM",
  "email": "support@qshelter.com",
  "isPlatformOrg": true
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "id": "{{qshelterOrgId}}",
    "name": "QShelter",
    "type": "PLATFORM",
    "isPlatformOrg": true
  }
}
```

Store Variables:

- qshelterOrgId → for platform organization reference

Step 1.4: Add Adaeze as Mortgage Operations Officer

```
POST {{userServiceUrl}}/organizations/{{qshelterOrgId}}/members
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
Content-Type: application/json

{
  "userId": "{{adaezeId}}",
  "role": "MANAGER",
  "title": "Mortgage Operations Officer"
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "id": "...",
    "userId": "{{adaezeId}}",
    "organizationId": "{{qshelterOrgId}}",
    "role": "MANAGER",
  }
}
```

```
    "title": "Mortgage Operations Officer"
  }
}
```

Step 1.5: Create Access Bank Organization

```
POST {{userServiceUrl}}/organizations
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
Content-Type: application/json

{
  "name": "Access Bank PLC",
  "type": "BANK",
  "email": "mortgages@accessbank.com"
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "id": "{{accessBankOrgId}}",
    "name": "Access Bank PLC",
    "type": "BANK"
  }
}
```

Store Variables:

- `accessBankOrgId` → for bank organization reference

Step 1.6: Register Nkechi (Bank Loan Officer)

```
POST {{userServiceUrl}}/auth/signup
Content-Type: application/json

{
  "email": "nkechi@accessbank.com",
  "password": "BankOfficer123!",
  "firstName": "Nkechi",
  "lastName": "Okonkwo"
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
```

```
"accessToken": "{{nkechiAccessToken}}",
"refreshToken": "...",
"user": {
  "id": "{{nkechiId}}",
  "email": "nkechi@accessbank.com",
  "firstName": "Nkechi",
  "lastName": "Okonkwo"
}
}
```

Store Variables:

- `nkechiId` → from response
- `nkechiAccessToken` → for Authorization header

Step 1.7: Add Nkechi to Access Bank

```
POST {{userServiceUrl}}/organizations/{{accessBankOrgId}}/members
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
Content-Type: application/json

{
  "userId": "{{nkechiId}}",
  "role": "MANAGER",
  "title": "Loan Officer"
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "id": "...",
    "userId": "{{nkechiId}}",
    "organizationId": "{{accessBankOrgId}}",
    "role": "MANAGER",
    "title": "Loan Officer"
  }
}
```

Phase 2: Customer Registration

Step 2.1: Chidi Signs Up

```
POST {{userServiceUrl}}/auth/signup
Content-Type: application/json
```

```
{
  "email": "chidi@gmail.com",
  "password": "CustomerPass123!",
  "firstName": "Chidi",
  "lastName": "Nnamdi"
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "accessToken": "{{chidiAccessToken}}",
    "refreshToken": "...",
    "expiresIn": 900,
    "user": {
      "id": "{{chidiId}}",
      "email": "chidi@gmail.com",
      "firstName": "Chidi",
      "lastName": "Nnamdi"
    }
  }
}
```

Store Variables:

- `chidiId` → from response
- `chidiAccessToken` → for Authorization header

Phase 3: Property Setup

Step 3.1: Create Property (Admin)

```
POST {{propertyServiceUrl}}/properties
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
Content-Type: application/json

{
  "title": "Lekki Gardens Estate",
  "description": "Premium residential estate in Lekki Phase 1",
  "category": "SALE",
  "propertyType": "APARTMENT",
  "country": "Nigeria",
  "currency": "NGN",
  "city": "Lagos",
  "district": "Lekki"
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "id": "{{propertyId}}",
    "title": "Lekki Gardens Estate",
    "status": "DRAFT"
  }
}
```

Step 3.2: Create Property Variant (Admin)

```
POST {{propertyServiceUrl}}/property/properties/{{propertyId}}/variants
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
Content-Type: application/json
```

```
{
  "name": "3-Bedroom Flat",
  "nBedrooms": 3,
  "nBathrooms": 3,
  "nParkingSpots": 1,
  "area": 150,
  "price": 85000000,
  "totalUnits": 20,
  "availableUnits": 15
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "id": "{{variantId}}",
    "name": "3-Bedroom Flat",
    "price": 85000000,
    "status": "AVAILABLE"
  }
}
```

Step 3.3: Create Property Unit (Admin)

```
POST
{{propertyServiceUrl}}/property/properties/{{propertyId}}/variants/{{variantId}}/units
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
Content-Type: application/json
```

```
{
```



```
"unitNumber": "14B",
"floorNumber": 14,
"blockName": "Block B"
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "id": "{{unitId}}",
    "unitNumber": "14B",
    "floorNumber": 14,
    "status": "AVAILABLE"
  }
}
```

Step 3.4: Publish Property (Admin)

```
PATCH {{propertyServiceUrl}}/property/properties/{{propertyId}}/publish
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
```

Expected Response (200 OK):

```
{
  "success": true,
  "data": {
    "id": "{{propertyId}}",
    "status": "PUBLISHED",
    "publishedAt": "2025-01-XX..."
  }
}
```

Phase 4: Payment Configuration

Step 4.1: Create One-Off Downpayment Plan (Admin)

```
POST {{mortgageServiceUrl}}/payment-plans
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: adaeze-create-downpayment-plan-{{timestamp}}
Content-Type: application/json

{
  "name": "10% One-Off Downpayment",
  "description": "Single upfront payment for property reservation",
  "frequency": "ONE_TIME",
```

```
"interestRate": 0,  
"gracePeriodDays": 30  
}
```

Expected Response (201 Created):

```
{  
  "success": true,  
  "data": {  
    "id": "{{downpaymentPlanId}}",  
    "name": "10% One-Off Downpayment",  
    "frequency": "ONE_TIME"  
  }  
}
```

Step 4.2: Create Flexible Mortgage Plan (Admin)

```
POST {{mortgageServiceUrl}}/payment-plans  
Authorization: Bearer {{adaezeAccessToken}}  
x-tenant-id: {{tenantId}}  
x-idempotency-key: adaeze-create-mortgage-plan-{{$timestamp}}  
Content-Type: application/json  
  
{  
  "name": "Flexible Mortgage at 9.5%",  
  "description": "Monthly payments at 9.5% annual interest, term selected by  
applicant",  
  "frequency": "MONTHLY",  
  "allowFlexibleTerm": true,  
  "minTermMonths": 60,  
  "maxTermMonths": 360,  
  "termStepMonths": 12,  
  "maxAgeAtMaturity": 65,  
  "interestRate": 9.5,  
  "gracePeriodDays": 15  
}
```

Expected Response (201 Created):

```
{  
  "success": true,  
  "data": {  
    "id": "{{mortgagePlanId}}",  
    "name": "Flexible Mortgage at 9.5%",  
    "allowFlexibleTerm": true,  
    "minTermMonths": 60,  
    "maxTermMonths": 360  
  }  
}
```

Step 4.3: Create Payment Method with 4 Phases (Admin)

```
POST {{mortgageServiceUrl}}/payment-methods
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: adaeze-create-payment-method-{{timestamp}}
Content-Type: application/json

{
  "name": "10/90 Lekki Mortgage",
  "description": "Underwriting → Downpayment → Final Documentation → Mortgage",
  "requiresManualApproval": true,
  "phases": [
    {
      "name": "Underwriting & Documentation",
      "phaseCategory": "DOCUMENTATION",
      "phaseType": "KYC",
      "order": 1,
      "requiredDocumentTypes": ["ID_CARD", "BANK_STATEMENT", "EMPLOYMENT_LETTER"],
      "reviewRequirements": [
        { "party": "INTERNAL", "required": true },
        { "party": "BANK", "required": true }
      ],
      "reviewOrder": "SEQUENTIAL",
      "stepDefinitions": [
        { "name": "Upload Valid ID", "stepType": "UPLOAD", "order": 1 },
        { "name": "Upload Bank Statements", "stepType": "UPLOAD", "order": 2 },
        { "name": "Upload Employment Letter", "stepType": "UPLOAD", "order": 3 },
        { "name": "Internal Review", "stepType": "APPROVAL", "order": 4 },
        { "name": "Bank Review", "stepType": "APPROVAL", "order": 5, "reviewParty": "BANK" },
        { "name": "Bank Uploads Preapproval Letter", "stepType": "UPLOAD", "order": 6, "metadata": { "documentType": "PREAPPROVAL_LETTER", "uploadedBy": "BANK" } }
      ]
    },
    {
      "name": "10% Downpayment",
      "phaseCategory": "PAYMENT",
      "phaseType": "DOWNPAYMENT",
      "order": 2,
      "percentOfPrice": 10,
      "paymentPlanId": "{{downpaymentPlanId}}"
    }
  ]
}
```

```

{
  "name": "Final Documentation",
  "phaseCategory": "DOCUMENTATION",
  "phaseType": "VERIFICATION",
  "order": 3,
  "stepDefinitions": [
    {
      "name": "Mortgage Operations Officer Uploads Final Offer",
      "stepType": "UPLOAD",
      "order": 1,
      "metadata": {
        "documentType": "FINAL_OFFER",
        "uploadedBy": "INTERNAL"
      }
    },
    { "name": "Customer Signs Final Offer", "stepType": "SIGNATURE", "order": 2
  ]
},
{
  "name": "20-Year Mortgage",
  "phaseCategory": "PAYMENT",
  "phaseType": "MORTGAGE",
  "order": 4,
  "percentOfPrice": 90,
  "interestRate": 9.5,
  "paymentPlanId": "{{mortgagePlanId}}"
}
]
}

```

Expected Response (201 Created):

```

{
  "success": true,
  "data": {
    "id": "{{paymentMethodId}}",
    "name": "10/90 Lekki Mortgage",
    "phases": [
      {
        "id": "...",
        "name": "Underwriting & Documentation",
        "phaseType": "KYC"
      },
      { "id": "...", "name": "10% Downpayment", "phaseType": "DOWNPAYMENT" },
      {
        "id": "...",
        "name": "Final Documentation",
        "phaseType": "VERIFICATION"
      },
      { "id": "...", "name": "20-Year Mortgage", "phaseType": "MORTGAGE" }
    ]
  }
}

```

```
    ]
  }
}
```

Step 4.4: Link Payment Method to Property (Admin)

```
POST {{mortgageServiceUrl}}/payment-methods/{{paymentMethodId}}/properties
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: adaeze-link-payment-method-{{$timestamp}}
Content-Type: application/json

{
  "propertyId": "{{propertyId}}",
  "isDefault": true
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "paymentMethodId": "{{paymentMethodId}}",
    "propertyId": "{{propertyId}}",
    "isDefault": true
  }
}
```

Step 4.5: Configure Document Requirement Rules (Admin)

```
POST {{mortgageServiceUrl}}/payment-methods/{{paymentMethodId}}/document-rules
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
Content-Type: application/json

{
  "rules": [
    {
      "context": "APPLICATION_PHASE",
      "phaseType": "KYC",
      "documentType": "ID_CARD",
      "isRequired": true,
      "description": "Valid government-issued ID (NIN, Passport, or Driver License)",
      "maxSizeBytes": 5242880,
      "allowedMimeTypes": ["image/jpeg", "image/png", "application/pdf"]
    },
    {
      "context": "APPLICATION_PHASE",
```

```

        "phaseType": "KYC",
        "documentType": "BANK_STATEMENT",
        "isRequired": true,
        "description": "Last 6 months bank statements",
        "maxSizeBytes": 10485760,
        "allowedMimeTypes": ["application/pdf"],
        "expiryDays": 90
    },
    {
        "context": "APPLICATION_PHASE",
        "phaseType": "KYC",
        "documentType": "EMPLOYMENT_LETTER",
        "isRequired": true,
        "description": "Employment confirmation letter",
        "maxSizeBytes": 5242880,
        "allowedMimeTypes": ["application/pdf"]
    }
]
}

```

Phase 5: Customer Application

Step 5.1: Chidi Creates Application

```

POST {{mortgageServiceUrl}}/applications
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-create-application-{{$timestamp}}
Content-Type: application/json

{
  "propertyUnitId": "{{unitId}}",
  "paymentMethodId": "{{paymentMethodId}}",
  "title": "Purchase Agreement – Lekki Gardens Unit 14B",
  "applicationType": "MORTGAGE",
  "totalAmount": 85000000,
  "monthlyIncome": 2500000,
  "monthlyExpenses": 800000,
  "applicantAge": 40,
  "selectedMortgageTermMonths": 240
}

```

Expected Response (201 Created):

```

{
  "success": true,
  "data": {
    "id": "{{applicationId}}",
    "applicationNumber": "APP-2025-XXXX",

```

```

    "status": "DRAFT",
    "phases": [
      { "id": "{{kycPhaseId}}", "phaseType": "KYC", "status": "PENDING" },
      {
        "id": "{{downpaymentPhaseId}}",
        "phaseType": "DOWNPAYMENT",
        "status": "PENDING"
      },
      {
        "id": "{{verificationPhaseId}}",
        "phaseType": "VERIFICATION",
        "status": "PENDING"
      },
      {
        "id": "{{mortgagePhaseId}}",
        "phaseType": "MORTGAGE",
        "status": "PENDING"
      }
    ]
  }
}

```

Store Variables:

- applicationId
- kycPhaseId
- downpaymentPhaseId
- verificationPhaseId
- mortgagePhaseId

Step 5.2: Verify Phase Amounts

```

GET {{mortgageServiceUrl}}/applications/{{applicationId}}/phases
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}

```

Expected Response (200 OK):

```

{
  "success": true,
  "data": [
    { "phaseType": "KYC", "totalAmount": 0 },
    { "phaseType": "DOWNPAYMENT", "totalAmount": 8500000 },
    { "phaseType": "VERIFICATION", "totalAmount": 0 },
    { "phaseType": "MORTGAGE", "totalAmount": 76500000, "interestRate": 9.5 }
  ]
}

```

Step 5.3: Submit Application

```
POST {{mortgageServiceUrl}}/applications/{{applicationId}}/transition
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-submit-application-{{$timestamp}}
Content-Type: application/json
```

```
{
  "action": "SUBMIT",
  "note": "Submitting for processing"
}
```

Expected Response (200 OK):

```
{
  "success": true,
  "data": {
    "id": "{{applicationId}}",
    "status": "PENDING"
  }
}
```

Step 5.4: Activate KYC Phase

```
POST
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{kycPhaseId}}/activate
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-activate-kyc-{{$timestamp}}
```

Expected Response (200 OK):

```
{
  "success": true,
  "data": {
    "id": "{{kycPhaseId}}",
    "status": "IN_PROGRESS"
  }
}
```

Phase 6: KYC Document Upload & Approval

Step 6.1: Upload Documents (Customer)

Upload ID Card:

```
POST
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{kycPhaseId}}/documents
Authorization: Bearer {{chidiAccessToken}}
```



```
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-doc-id-card-{{$timestamp}}
Content-Type: application/json

{
  "documentType": "ID_CARD",
  "url": "https://s3.amazonaws.com/qshelter/chidi/id.pdf",
  "fileName": "id.pdf"
}
```

Upload Bank Statement:

```
POST
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{kycPhaseId}}/documents
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-doc-bank-statement-{{$timestamp}}
Content-Type: application/json

{
  "documentType": "BANK_STATEMENT",
  "url": "https://s3.amazonaws.com/qshelter/chidi/bank.pdf",
  "fileName": "bank.pdf"
}
```

Upload Employment Letter:

```
POST
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{kycPhaseId}}/documents
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-doc-employment-{{$timestamp}}
Content-Type: application/json

{
  "documentType": "EMPLOYMENT_LETTER",
  "url": "https://s3.amazonaws.com/qshelter/chidi/employment.pdf",
  "fileName": "employment.pdf"
}
```

Step 6.2: Complete Upload Steps (Customer)

```
POST
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{kycPhaseId}}/steps/comp
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-step-upload-id-{{$timestamp}}
Content-Type: application/json
```

```
{ "stepName": "Upload Valid ID" }
```

POST

```
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{kycPhaseId}}/steps/comp
```

Authorization: Bearer {{chidiAccessToken}}

x-tenant-id: {{tenantId}}

x-idempotency-key: chidi-step-upload-bank-{{\$timestamp}}

Content-Type: application/json

```
{ "stepName": "Upload Bank Statements" }
```

POST

```
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{kycPhaseId}}/steps/comp
```

Authorization: Bearer {{chidiAccessToken}}

x-tenant-id: {{tenantId}}

x-idempotency-key: chidi-step-upload-employment-{{\$timestamp}}

Content-Type: application/json

```
{ "stepName": "Upload Employment Letter" }
```

Step 6.3: Mortgage Operations Officer Retrieves Documents for Review (Stage 1: Internal)

Adaeze (QShelter's Mortgage Operations Officer) reviews documents first before they go to the bank.

GET

```
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{kycPhaseId}}/documents
```

Authorization: Bearer {{adaezeAccessToken}}

x-tenant-id: {{tenantId}}

Expected Response (200 OK):

```
{
  "success": true,
  "data": [
    { "id": "{{docId1}}", "documentType": "ID_CARD", "status": "PENDING" },
    {
      "id": "{{docId2}}",
      "documentType": "BANK_STATEMENT",
      "status": "PENDING"
    },
    {
      "id": "{{docId3}}",
      "documentType": "EMPLOYMENT_LETTER",
      "status": "PENDING"
    }
  ]
}
```

```
  ]  
}
```

Step 6.4: Mortgage Operations Officer Approves Each Document (Stage 1: Internal)

Adaeze performs the internal (Stage 1) review with `reviewParty: "INTERNAL"` :

```
POST  
{{mortgageServiceUrl}}/applications/{{applicationId}}/documents/{{docId1}}/review  
Authorization: Bearer {{adaezeAccessToken}}  
x-tenant-id: {{tenantId}}  
x-idempotency-key: adaeze-approve-doc-1-{{timestamp}}  
Content-Type: application/json  
  
{  
  "status": "APPROVED",  
  "reviewParty": "INTERNAL",  
  "note": "ID verified successfully – internal review"  
}
```

(Repeat for docId2 and docId3)

Step 6.5: Bank Loan Officer Reviews Documents (Stage 2: Bank)

After internal approval, Nkechi (Access Bank's Loan Officer) performs the bank (Stage 2) review:

```
POST  
{{mortgageServiceUrl}}/applications/{{applicationId}}/documents/{{docId1}}/review  
Authorization: Bearer {{nkechiAccessToken}}  
x-tenant-id: {{tenantId}}  
x-idempotency-key: nkechi-approve-doc-1-{{timestamp}}  
Content-Type: application/json  
  
{  
  "status": "APPROVED",  
  "reviewParty": "BANK",  
  "note": "ID verified – bank approval"  
}
```

(Repeat for docId2 and docId3)

Step 6.6: Bank Uploads Preapproval Letter

After approving documents, Nkechi uploads the bank's preapproval letter:

```
POST  
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{kycPhaseId}}/documents  
Authorization: Bearer {{nkechiAccessToken}}  
x-tenant-id: {{tenantId}}  
x-idempotency-key: nkechi-upload-preapproval-{{timestamp}}  
Content-Type: application/json
```

```
{
  "documentType": "PREAPPROVAL_LETTER",
  "url": "https://s3.amazonaws.com/qshelter/applications/chidi-preapproval.pdf",
  "fileName": "chidi-preapproval.pdf"
}
```

Step 6.7: KYC Phase Completes

After both INTERNAL (Adaeze) and BANK (Nkechi) reviews are approved, the KYC documentation phase completes.

Phase 7: Downpayment (One-Time Payment)

Step 7.1: Generate Downpayment Installment

```
POST
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{downpaymentPhaseId}}/installments
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-generate-downpayment-{{$timestamp}}
Content-Type: application/json

{
  "startDate": "{{isoTimestamp}}"
}
```

Expected Response (200 OK):

```
{
  "success": true,
  "data": {
    "installments": [
      {
        "id": "{{downpaymentInstallmentId}}",
        "amount": 8500000,
        "dueDate": "...",
        "status": "PENDING"
      }
    ]
  }
}
```

Step 7.2: Record Payment

```
POST {{mortgageServiceUrl}}/applications/{{applicationId}}/payments
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-pay-downpayment-{{$timestamp}}
```

Content-Type: application/json

```
{
  "phaseId": "{{downpaymentPhaseId}}",
  "installmentId": "{{downpaymentInstallmentId}}",
  "amount": 8500000,
  "paymentMethod": "BANK_TRANSFER",
  "externalReference": "TRF-CHIDI-DOWNPAYMENT-001"
}
```

Expected Response (201 Created):

```
{
  "success": true,
  "data": {
    "id": "{{paymentId}}",
    "reference": "{{paymentReference}}",
    "amount": 8500000,
    "status": "PENDING"
  }
}
```

Step 7.3: Process Payment Confirmation (Webhook Simulation)

POST {{mortgageServiceUrl}}/applications/payments/process
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: process-downpayment-{{timestamp}}
Content-Type: application/json

```
{
  "reference": "{{paymentReference}}",
  "status": "COMPLETED",
  "gatewayTransactionId": "GW-TRX-123456"
}
```

Expected: Downpayment phase COMPLETED, Verification phase auto-activates.

Phase 8: Final Documentation

Step 8.1: Mortgage Operations Officer Uploads Final Offer Letter

POST
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{verificationPhaseId}}/documents
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: adaeze-upload-final-offer-{{timestamp}}
Content-Type: application/json

```
{
  "documentType": "FINAL_OFFER",
  "url": "https://s3.amazonaws.com/qshelter/applications/chidi-final-offer.pdf",
  "fileName": "chidi-final-offer.pdf"
}
```

Step 8.2: Mortgage Operations Officer Completes Upload Step

```
POST
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{verificationPhaseId}}/steps/{{stepId}}
Authorization: Bearer {{adaezeAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: adaeze-step-final-offer-{{$timestamp}}
Content-Type: application/json

{ "stepName": "Mortgage Operations Officer Uploads Final Offer" }
```

Step 8.3: Customer Signs Final Offer

```
POST
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{verificationPhaseId}}/steps/{{stepId}}
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-sign-final-offer-{{$timestamp}}
Content-Type: application/json

{ "stepName": "Customer Signs Final Offer" }
```

Expected: Verification phase COMPLETED, Mortgage phase auto-activates.

Phase 9: Mortgage Activation

Step 9.1: Generate Mortgage Installments

```
POST
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{mortgagePhaseId}}/installments
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-generate-mortgage-{{$timestamp}}
Content-Type: application/json

{
  "startDate": "{{isoTimestamp}}"
}
```

Expected Response (200 OK):

```
{
  "success": true,
  "data": {
    "installments": [
      // 240 monthly installments
      {
        "id": "...",
        "amount": "...",
        "dueDate": "...",
        "installmentNumber": 1
      },
      { "id": "...", "amount": "...", "dueDate": "...", "installmentNumber": 2 }
      // ... (240 total)
    ],
    "summary": {
      "totalInstallments": 240,
      "monthlyPayment": "...",
      "totalAmount": 76500000,
      "totalInterest": "..."
    }
  }
}
```

Step 9.2: Sign and Activate Application

```
POST {{mortgageServiceUrl}}/applications/{{applicationId}}/sign
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-sign-application-{{$timestamp}}
```

Expected Response (200 OK):

```
{
  "success": true,
  "data": {
    "id": "{{applicationId}}",
    "status": "ACTIVE",
    "signedAt": "2025-01-XX..."
  }
}
```

Phase 10: First Mortgage Payment (Optional)

Step 10.1: Get Pending Installment

```
GET
{{mortgageServiceUrl}}/applications/{{applicationId}}/phases/{{mortgagePhaseId}}/installments?status=PENDING&limit=1
```

```
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
```

Step 10.2: Record First Monthly Payment

```
POST {{mortgageServiceUrl}}/applications/{{applicationId}}/payments
Authorization: Bearer {{chidiAccessToken}}
x-tenant-id: {{tenantId}}
x-idempotency-key: chidi-mortgage-payment-1-{{timestamp}}
Content-Type: application/json
```

```
{
  "phaseId": "{{mortgagePhaseId}}",
  "installmentId": "{{firstInstallmentId}}",
  "amount": "{{monthlyPaymentAmount}}",
  "paymentMethod": "BANK_TRANSFER",
  "externalReference": "TRF-CHIDI-MORTGAGE-001"
}
```

Missing Endpoints Summary

The following endpoints need to be implemented:

Property Service

Method	Endpoint	Description
POST	/properties/:id/variants	Create property variant
GET	/properties/:id/variants	List property variants
PUT	/properties/:id/variants/:variantId	Update variant
DELETE	/properties/:id/variants/:variantId	Delete variant
POST	/properties/:id/variants/:variantId/units	Create property unit
GET	/properties/:id/variants/:variantId/units	List units in variant
PUT	/units/:unitId	Update unit
DELETE	/units/:unitId	Delete unit
PATCH	/properties/:id/publish	Publish property
PATCH	/properties/:id/unpublish	Unpublish property

Mortgage Service

Method	Endpoint	Description
POST	/payment-methods/:id/document-rules	Bulk create document requirement rules

GET	/payment-methods/:id/document-rules	List document requirement rules
-----	-------------------------------------	---------------------------------

Postman Flow Design

The Postman Flow should be organized in these folders:

```

QShelter E2E Flow
├── 1. Bootstrap
│   ├── Bootstrap Tenant
│   └── Admin Login
├── 2. Customer Registration
│   └── Customer Signup
├── 3. Property Setup
│   ├── Create Property
│   ├── Create Variant
│   ├── Create Unit
│   └── Publish Property
├── 4. Payment Configuration
│   ├── Create Downpayment Plan
│   ├── Create Mortgage Plan
│   ├── Create Payment Method
│   ├── Link to Property
│   └── Configure Document Rules
├── 5. Application Creation
│   ├── Create Application
│   ├── Verify Phase Amounts
│   ├── Submit Application
│   └── Activate KYC Phase
├── 6. KYC Process
│   ├── Upload Documents (x3)
│   ├── Complete Upload Steps (x3)
│   ├── Admin Review Documents (x3)
│   ├── Complete Review Step
│   └── Sign Provisional Offer
├── 7. Downpayment
│   ├── Generate Installment
│   ├── Record Payment
│   └── Process Payment
├── 8. Final Documentation
│   ├── Admin Upload Final Offer
│   ├── Complete Upload Step
│   └── Sign Final Offer
├── 9. Mortgage Activation
│   ├── Generate Installments
│   └── Sign Application
└── 10. Monthly Payment (Optional)
    └── Record First Payment
  
```

Environment Variables

```
{
  "userServiceUrl": "http://localhost:3002",
  "propertyServiceUrl": "http://localhost:3003",
  "mortgageServiceUrl": "http://localhost:3001",
  "notificationServiceUrl": "http://localhost:3004",
  "paymentServiceUrl": "http://localhost:3005",
  "bootstrapSecret": "local-bootstrap-secret",
  "tenantId": "",
  "adaezeId": "",
  "adaezeAccessToken": "",
  "chidiId": "",
  "chidiAccessToken": "",
  "propertyId": "",
  "variantId": "",
  "unitId": "",
  "downpaymentPlanId": "",
  "mortgagePlanId": "",
  "paymentMethodId": "",
  "applicationId": "",
  "kycPhaseId": "",
  "downpaymentPhaseId": "",
  "verificationPhaseId": "",
  "mortgagePhaseId": ""
}
```