

# Matching Rules & Acceptance Criteria — Unified Transactions Reconciliation Platform (UTRP)

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## Source Schemas (sample data provided)

### Customers

ext_customer_key	VARCHAR(20)	-- External ID from ERP
name	VARCHAR(100)	
email	VARCHAR(100)	
created_at	DATETIME	

### Invoices

ext_invoice_key	VARCHAR(20)	-- External ID from billing system
ext_customer_key	VARCHAR(20)	-- FK to Customers
invoice_date	DATETIME	
amount	DECIMAL(10,2)	
currency	VARCHAR(10)	
status	VARCHAR(20)	
source_system	VARCHAR(50)	
inserted_at	DATETIME	

### Payments

ext_payment_key	VARCHAR(20)	-- External ID from payment gateway
ext_customer_key	VARCHAR(20)	-- FK to Customers
payment_date	DATETIME	
amount	DECIMAL(10,2)	
currency	VARCHAR(10)	
payment_method	VARCHAR(50)	
source_system	VARCHAR(50)	
inserted_at	DATETIME	

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## Matching Rules

### Rule 1 - Exact Match

- Invoice amount = payment.amount
- Invoice ext\_customer\_key = payment.ext\_customer\_key
- Payment date within  $\pm 7$  days of invoice date

**Result:** Matched (Exact)

## Rule 2 - Partial Payments

- One invoice linked to multiple payments.
- Sum of payments within 30 days after invoice date equals invoice amount.  
**Result:** Matched (Partial Settled)

## Rule 3 - Overpayment

- Payment amount > invoice amount.  
**Result:** Exception: Overpaid

## Rule 4 - Underpayment

- Payment amount < invoice amount and no further payments found.  
**Result:** Exception: Underpaid

## Rule 5 - Currency Mismatch

- Invoice and payment currencies differ.  
**Result:** Exception: Currency Mismatch

## Rule 6 - Unpaid

- No payment found for invoice within 30 days.  
**Result:** Exception: Unpaid

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## Acceptance Criteria

1. **Completeness:** Every invoice is either matched or recorded in the exceptions table.
  2. **Uniqueness:** Each payment is applied to only one invoice, unless explicitly marked as partial payment.
  3. **Correctness:** Reconciliation rules classify invoices/payments consistently with expected outcomes on the test dataset.
  4. **Auditability:** Each reconciliation run logs:
    - Total invoices processed
    - Total payments processed
    - Matches found
    - Exceptions recorded
    - Timestamp and run ID
  5. **Idempotency:** Running reconciliation multiple times does not duplicate records or alter existing results incorrectly.
  6. **Traceability:** For every match or exception, the invoice ID, payment ID(s), and applied rule are clearly documented.
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