**Summary of What and How to Implement the "Non-Cash Guarantee Facility" in the Loan Management System**

**What to Implement**

The "Non-Cash Guarantee Facility" is a new facility type to be added to the Saudi Arabia Loan Management Platform to cater to a common financial instrument in the Saudi market: bank guarantees. Unlike traditional loan facilities that involve cash drawdowns and repayments, this facility focuses on issuing guarantees (e.g., performance bonds, advance payment guarantees) on behalf of the borrower (e.g., a company) to a beneficiary (e.g., a project owner) without disbursing cash. It represents a contingent liability where the bank commits to pay the beneficiary if certain conditions (e.g., non-performance) are met, backed by security provided by the borrower. Key aspects to implement include:

* **Facility Type**: "Non-Cash Guarantee Facility" to issue guarantees like performance bonds or bid bonds.
* **Security Options**: Support for cash security (full, partial, or none) or non-cash instruments (e.g., Letters of Credit) to back the guarantee, distinct from tangible collateral (e.g., real estate).
* **No Cash Drawdown/Settlement**: Focus on issuance, expiry, renewal, or call (if claimed), with no loan-like repayment cycles.
* **Exposure Tracking**: Calculate exposure as (Guarantee Amount - Security Amount) to monitor risk.
* **Status Management**: Track states (Active, Expired, Renewed, Called) with automated transitions.
* **Integration**: Link to the existing dashboard, notifications, ledger, and reporting for comprehensive oversight.

This facility is critical for Saudi businesses, especially in construction and project finance under Vision 2030, where guarantees are standard for securing contracts without immediate cash flow impact.

**How to Implement**

Below are detailed instructions for the Replit developer to integrate this facility type into the system, building on the existing framework.

1. **Add Facility Type in Bank Setup Page**
   * **What**: Introduce "Non-Cash Guarantee Facility" as a new option in the Facility Type dropdown alongside Revolving Credit, Term Loan, etc.
   * **How**:
     + Update the backend database schema (e.g., PostgreSQL) to include a new facility type with fields: facility\_type = 'Non-Cash Guarantee', guarantee\_amount, security\_type (enum: 'Cash Full', 'Cash Partial', 'Cash None', 'Non-Cash'), security\_amount, issuance\_date, expiry\_date, beneficiary\_name, fee\_rate, renewal\_option (boolean).
     + In the frontend (e.g., React.js), add this option to the dropdown and render a form with the above fields. Use a date picker for issuance\_date (default to today, September 25, 2025, 10:35 AM +03) and expiry\_date.
     + Validate that the total guarantee amount does not exceed the facility limit set for the bank.
2. **Create Guarantee Issuance Page (Adapt Loan Entry)**
   * **What**: Develop a dedicated section within the Loan Entry page for issuing guarantees, focusing on non-cash transactions.
   * **How**:
     + Modify the Loan Entry component to conditionally render a "Guarantee Issuance" form when "Non-Cash Guarantee Facility" is selected.
     + Fields: Auto-generate a reference (e.g., "NC-ANB-20250925-001"), input guarantee amount, select security type/amount (e.g., 500K SAR cash for 1M SAR guarantee), and add beneficiary details.
     + No drawdown or settlement fields; calculate exposure as guarantee\_amount - security\_amount and store it.
     + Use a backend API endpoint (e.g., /api/guarantees) to save this data, ensuring immutability for the ledger.
3. **Update Dashboard Integration**
   * **What**: Add a "Guarantees" tab or section to display active guarantees with expiry countdowns and exposure.
   * **How**:
     + Create a new tab in the React dashboard component, fetching guarantee data from the backend.
     + Display a table: Guarantee Amount | Security Amount | Exposure | Status | Expiry Date, with color-coded urgency (red <30 days, yellow 30–90 days).
     + Implement a filter for "Guarantees Expiring Soon" and a search by reference/beneficiary.
     + Integrate AI insights (e.g., "📊 CASH SECURITY UTILIZATION: 70% of cash tied to guarantees—monitor liquidity risk") using the rules-based AI logic.
4. **Enhance Notifications and Calendar**
   * **What**: Add expiry and renewal alerts for guarantees.
   * **How**:
     + In the backend, schedule email notifications 30/7 days before expiry using a cron job or API trigger (e.g., Node.js node-cron): "⏰ GUARANTEE EXPIRY: [Reference] expires on [Date]. Renew via bank."
     + Sync with Outlook/Google Calendar via an API (e.g., Google Calendar API) as non-recurring events with renewal reminders, using color-coding for urgency.
5. **Maintain Ledger and Reporting**
   * **What**: Log all guarantee actions in the historical ledger and include in reports.
   * **How**:
     + Extend the ledger table (e.g., ledger\_entries) to include entries like "Issued: 1M SAR Performance Bond, Security: 500K SAR Cash, Expiry: 2026-09-25" with timestamps.
     + Update the reporting module to add a "Contingent Liabilities" section in Excel/PDF exports, detailing guarantee amounts, security, and expiry trends.
6. **Preserve Collateral Tab and Differentiate Security**
   * **What**: Keep the existing Collateral Tab for tangible assets (Real Estate, Liquid Stocks, Other) and use a separate "Security Details" field for guarantees.
   * **How**:
     + In the backend, maintain two distinct models: collateral (for tangible assets linked to loans) and guarantee\_security (for cash/non-cash security).
     + In the frontend, display "Security Details" in the Guarantee Issuance form, avoiding overlap with the Collateral Tab’s LTV calculations.

**Explanation to the Developer: What This Loan Is**

The "Non-Cash Guarantee Facility" is a unique financial instrument in the Saudi market, distinct from traditional loans. It’s not about borrowing cash but issuing a bank guarantee—a promise by the bank to pay a beneficiary (e.g., a project owner) up to a specified amount (e.g., 1M SAR) if the borrower fails to meet contractual obligations (e.g., completing a construction project). This is common in Saudi Arabia for securing government or private contracts under Vision 2030.

* **Key Characteristics**:
  + **No Cash Disbursement**: The borrower doesn’t receive funds; the guarantee is a contingent liability.
  + **Security**: Backed by cash margin (full, partial, or none) or non-cash (e.g., Letter of Credit), reducing the bank’s risk.
  + **Lifecycle**: Issued on a specific date, expires after a term (e.g., 12 months), or renews. If called (claimed), the bank pays from the borrower’s security or account.
  + **No Interest**: Unlike loans, no recurring interest—only an issuance fee (e.g., 1% annually, sometimes SIBOR-linked if cash-secured).
  + **Purpose**: Used for performance bonds, bid bonds, or advance payment guarantees in projects.
* **Implementation Focus**:
  + Track issuance, expiry, renewal, and calls without loan settlement logic.
  + Differentiate security (cash/non-cash) from tangible collateral (e.g., real estate) to avoid confusion.
  + Ensure the ledger captures all actions for audits, as SAMA requires transparency in contingent liabilities.

Appropriate