**Use Case Template**

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| **Use Case Name:** Calculate Profit and Loss (PNL) for FXMS | | **Priority/Importance:** HIGH | | **ID Number:** #10 |
| **Short Description:** This use case involves calculating the Profit and Loss (PNL) for each foreign exchange transaction within the Foreign Exchange Management System (FXMS). | | | | |
| **Trigger:** Upon completion of a foreign exchange transaction.  **Type:** Regular | | | | |
| **Primary actor(s):** investment bank, client | **Secondary actor(s):** None | | | |
| **Pre-condition:** The administrator is authenticated and has appropriate permissions.  The FXMS is operational and accessible. | | | | |
| **Relationships:**  **Extends:** generate report **Includes: Generalization/Specialization:** | | | | |
| **Major Inputs:**  **Input** **Source**   1. Transaction details (e.g., trade amount, currency pairs, transaction type). investment bank client is the source 2. Exchange rates for the involved currencies.investment bank and client is the source | **Major Outputs:**  **Output** **Destination**   1. Profit and Loss (PNL) value for each transaction. client investment bank is the destination 2. Updated transaction records reflecting PNL calculations. client investment bank is the destination | | | |
| **Major Steps Performed:**  1-Retrieve Transaction Details  2Fetch Exchange Rates:  3-Calculate Transaction Amount in Base Currency:  4-Apply Transaction Type Logic:  5-Calculate Profit and Loss (PNL):.  6-Update Transaction Records:  .  **Alternate Steps**  **1-**Missing Exchange Rates  **Exceptions:**  invalid Transaction Details  System Unavailability | | | **Information for Steps**  Retrieve transaction details from the FXMS database.  Fetch the exchange rates for the currencies involved in the transaction.  Convert the transaction amount into the base currency using the fetched exchange rates.  Apply specific calculation logic based on the transaction type (buy/sell).  Compute the PNL by subtracting the transaction amount in the base currency from the initial transaction amount.  Update the transaction records with the calculated PNL values.  If exchange rates are unavailable, notify the user and prompt them to retry later or manually input rates.  If transaction details are incomplete or invalid, display an error message and terminate the calculation.  If the FXMS is inaccessible or not operational, display an error message and halt the calculation process. | |
| **Conclusion:** Accurate PNL calculation in the FXMS is essential for assessing transaction profitability. By reliably computing PNL values based on transaction details and exchange rates, the system provides critical insights for decision-making. Adherence to business rules ensures data integrity, enhancing overall foreign exchange management effectiveness. | | | | |
| **Post-condition(s):** Updated transaction records reflect accurate Profit and Loss (PNL) calculations.  Users can access PNL values for each transaction within the FXMS. | | | | |
| **Business Rules: PNL calculations adhere to standard accounting principles.**  **Exchange rates used for calculations are sourced from reputable sources.**  **Transaction details must be accurate and complete for reliable PNL calculations.** | | | | |
| **Special Requirements:** None | | | | |