**EXPLANATION OF THE LAYERS AND THEIR INTEGRATION**

**Domain Layer**

Account Entity: Represents a bank account with attributes like accountId, accountType, balance, status, and creationDate. It includes methods for depositing, withdrawing, and checking if a transfer is allowed.

Transaction Entity: Represents a transaction with attributes like transactionId, transactionType, amount, timestamp, and accountId. It includes a subclass TransferTransaction for fund transfers.

Notification Entity: Represents notifications sent to users with attributes like notificationId, accountId, message, timestamp, and type.

**Application Layer**

AccountCreationService: Handles the creation of new accounts by interacting with the AccountRepository.

TransactionService: Manages deposits, withdrawals, and transfers by using the Account and Transaction entities and interacting with the AccountRepository and TransactionRepository. It also triggers notifications via the NotificationService.

FundTransferService: Handles fund transfers between accounts by interacting with the AccountRepository and TransactionRepository. It also triggers notifications via the NotificationService.

NotificationService: Manages sending notifications via email or SMS by interacting with the NotificationAdapter.

**Infrastructure Layer**

AccountRepository: Manages the persistence of Account entities, allowing creation, retrieval, updating, and atomic transfers of accounts.

TransactionRepository: Manages the persistence of Transaction entities, allowing saving transactions and retrieving transaction histories for specific accounts.

NotificationAdapter: An interface for sending notifications via different channels like in this case email or SMS.

Logger: Handles logging of transactions and other activities across the system.

**Presentation Layer (API Endpoints)**

Provides RESTful endpoints for creating accounts, depositing funds, withdrawing funds, transferring funds, retrieving account balances, viewing transaction histories, and managing notifications. The endpoints interact with the application services to perform the required operations.

**Integration**

The Presentation Layer receives requests from users and directs them to the appropriate Application Layer services.

The Application Layer services orchestrate the business logic by interacting with the Domain Layer entities and the Infrastructure Layer repositories.

The Infrastructure Layer handles all interactions with the database or other storage mechanisms, ensuring that the domain and application layers remain focused on business logic and service orchestration.

The Logger component is integrated across all layers to log activities and transactions for auditing and monitoring purposes