### **High-Level Design (HLD)**

#### **Project: Automated ETL System for Banking Market Capitalization Data**

**Objective:** To create an automated system that extracts, transforms, and loads data on the largest banks' market capitalization from a specified URL. The system will convert the data to various currencies and store it locally in both CSV and database formats.

**Components:**

1. **Data Extraction:**
   * **Source:** Web page containing market capitalization data of the largest banks.
   * **Method:** Use Python's requests and BeautifulSoup libraries to scrape and extract the relevant data.
2. **Data Transformation:**
   * **Operations:**
     + Convert market capitalization data from USD to GBP, EUR, and INR using provided exchange rates.
     + Round the converted values to two decimal places.
3. **Data Loading:**
   * **CSV File:** Save the transformed data to a local CSV file.
   * **Database:** Store the data in an SQLite database.
4. **Logging:**
   * **Purpose:** Track the progress and status of the ETL process.
   * **Method:** Write log messages to a log file with timestamps.
5. **Query Execution:**
   * **Purpose:** Run specific queries on the database to retrieve information.
   * **Method:** Use SQL queries to fetch and display data from the database.
6. **Automation:**
   * **Purpose:** Ensure the ETL process can be executed quarterly.
   * **Method:** Create a script that can be run periodically.

**High-Level Workflow:**

1. Extract data from the specified URL.
2. Transform the data to include market capitalization in GBP, EUR, and INR.
3. Load the transformed data into a CSV file and SQLite database.
4. Log the progress of each stage.
5. Run specific queries on the database and display the results.