**Technical Specification (TS)** **Project:** Development of a BI Dashboard for Analyzing International Transfers, Branch Performance, and Workload Reduction in Banks of Uzbekistan.

**Client:** Bank Owner.  
**Developer:** MAAB Innovation.  
**Project Goal:** Develop a BI dashboard for:

1. **Monitoring and analyzing net profit from international transfers.**
2. **Comparing performance of branches and cash desks.**
3. **Analyzing employee performance at operational levels.**
4. **Identifying overburdened branches and providing optimization suggestions (e.g., opening new locations).**

**1. General Requirements**

* **Development Platform:** Microsoft Power BI or an equivalent BI tool.
* **Data Source:** **Generated by students** (e.g., Excel files, CSVs, or mock databases).
* **Data Refresh Frequency:** Daily / Real-time (if applicable).
* **Granularity Levels:**
  + Branch → Cash Desk → Employee → Transactions.
* **Interactivity:** Filtering, drill-through, and visual comparison of KPIs.
* **Access Control:** Role-based access (Bank Owner, Branch Manager, Cashier).

**Note for Beginners:** This project uses **mock data**, and you are required to generate realistic datasets yourself. Feel free to add your own ideas, indicators, or use a different data structure to expand the analysis. Creativity and innovation are encouraged!

**2. Functional Requirements**

**2.1. Key Dashboards**

**2.1.1. Overview Dashboard for International Transfers**

* **KPIs:**
  + Total Amount of International Transfers.
  + Net Profit (Revenue - Operational Costs).
  + Number of Transfers by Branch.
  + Branch Share by Profit (Ranking).
  + Profit Trends Over Periods (Day/Month/Year).
* **Visualizations:**
  + Trend Line Chart.
  + Heat Map with Branch Locations on Uzbekistan Map.
  + Bar Chart for Branch Comparison.

**2.1.2. Branch Performance Dashboard**

* **KPIs:**
  + Net Profit by Branch.
  + Number of Processed Transfers.
  + Average Client Service Time.
  + Branch Workload (Clients per Employee).
  + Loss Ratio (if expenses exceed revenue).
* **Drill-through:**
  + Compare Cash Desks within a Branch.
  + Analyze Employee Performance.

**2.1.3. Employee Performance Analysis Dashboard**

* **KPIs:**
  + Number of Transactions per Employee.
  + Net Profit per Employee.
  + Average Transaction Processing Time.
  + Error Rate.
* **Visualizations:**
  + Employee Ranking (Top/Worst Performers).
  + Line Chart for Performance Trends Over Time.

**2.1.4. Branch Workload Analysis Dashboard**

* **KPIs:**
  + Average Clients per Employee.
  + Average Queue Waiting Time.
  + Peak Hours of Workload.
  + Geographic Concentration of Clients by Regions.
* **Insights and Suggestions:**
  + Identify Overburdened Branches.
  + Recommend Opening New Branches or Optimizing Personnel.

**3. Data Structure**

|  |  |  |
| --- | --- | --- |
| **Table** | **Description** | **Fields** |
| **Branches** | Bank branch information. | BranchID (PK), BranchName, Region, Address, ManagerID |
| **Cash Desks** | Information on cash desks within branches. | CashDeskID (PK), BranchID (FK), CashDeskName, Status |
| **Employees** | Data on employees of branches and cash desks. | EmployeeID (PK), BranchID (FK), CashDeskID (FK), FullName, Position, HireDate, Salary |
| **Transactions** | International transfers and bank revenue. | TransactionID (PK), BranchID (FK), CashDeskID (FK), EmployeeID (FK), Date, Amount, Profit, Currency, TransferTime |
| **Performance** | Aggregated data on employees and branches. | EmployeeID (FK), ProcessedTransactions, Errors, AvgProcessingTime |
| **Queues** | Data on workload and waiting times. | QueueID (PK), BranchID (FK), DateTime, ClientsInQueue, AvgWaitingTime |

**4. Key KPIs**

|  |  |  |
| --- | --- | --- |
| **KPI** | **Description** | **Formula** |
| Net Profit | Total revenue minus costs. | SUM(Profit) |
| Employee Productivity | Average number of transactions. | COUNT(Transactions)/EmployeeID |
| Average Service Time | Processing time for one transaction. | AVG(TransferTime) |
| Branch Workload | Number of clients per employee. | SUM(Clients)/COUNT(Employees) |
| Peak Workload | Maximum number of clients in queue. | MAX(ClientsInQueue) |

**5. Technical Requirements**

* **Database:** Microsoft SQL Server.
* **Integration:** External systems can transfer data via API.
* **Performance:** The dashboard should load/refresh in ≤ 30 seconds.
* **Accessibility:** Solution must work across devices (desktop, tablet, mobile).

**6. Project Stages**

1. **Data Collection and Processing:**
   * Generate mock data to simulate real banking operations.
   * Clean and normalize data.
2. **Data Model Development:**
   * Create table structures and relationships.
   * Configure ETL processes.
3. **Visualization Development:**
   * Build core and analytical dashboards.
4. **Testing:**
   * Validate data accuracy and performance.
5. **Deployment:**
   * Publish the dashboard and train users.

**7. Project Outcome**

* A BI dashboard with detailed analysis of net profit, branch workload, and employee performance.
* A scalable data structure for future analysis and extensions.
* Improved decision-making for the bank owner.

**Note for Beginners:** Since this is a mock project, you will **generate the data yourself**. Use Excel, CSVs, or mock database tools to simulate realistic scenarios. Don’t hesitate to explore additional KPIs, visualizations, or redesign the data structure to suit specific scenarios. This is an excellent opportunity to practice and innovate!