Phase I - Problem Identification

Project: Smart Water Distribution & Irrigation Management System
Student: Murenzi Charles | ID: 27386
Course: PL/SQL Practicum (INSY 8311)

Objective
Identify real-world problems in water consumption tracking and define a system scope with Oracle PL/SQL database and BI potential.

Problem Definition
- Manual recording leads to errors, delays, and inconsistent data.
- Difficulty auditing consumption and tracking anomalies.
- Reporting is slow and not real-time, affecting decision-making.

Context
The system will operate across districts, sectors, and irrigation zones, used by administrators, technicians, auditors, and planners to ensure accurate water tracking and reporting.

Target Users
- Water Meter Administrators
- Field Technicians / Employees
- Auditors / Managers
- Government / Water Authorities

Project Goals / Expected Outcomes
- Automate consumption recording
- Enforce business rules (weekday/holiday restrictions)
- Audit all changes
- Accurate reporting and BI dashboards
- Reduce errors, improve operational efficiency

BI Potential
- Track sector/location water usage trends
- Identify anomalies and potential leaks
- Generate KPIs for resource planning
- Support predictive irrigation management

Summary
Phase I identifies key operational problems, defines the system scope, and demonstrates the need for an Oracle PL/SQL database with BI integration. This phase ensures the project addresses real-world issues with measurable outcomes.

Deliverable
/documentation/Phase_I_Problem_Identification.pdf -> This PDF includes all above sections, ready for GitHub submission.