**Software Requirements Specification (SRS)**

**For: Recycling Machine Application**

**1. Introduction**

**1.1 Purpose**

Explains the purpose of the Recycling Machine Application — to automate the process of accepting returnable bottles and cans, recording transactions, printing receipts, and generating daily reports for operators.

**1.2 Scope**

Defines the scope of the system — includes customer interactions (item returns and refunds), operator functions (monitoring, configuration, and troubleshooting), and system features (item recognition, alarms, and reporting).

**1.3 Definitions, Acronyms, and Abbreviations**

Lists key terms used in the document, such as:

* **RMA** – Recycling Machine Application
* **Operator** – Authorized person managing machine operations
* **Customer** – Person returning bottles or cans for refund
* **Deposit Value** – Refund amount per item type

**1.4 References**

Mentions any reference materials (standards, manuals, or regulations related to recycling systems).

**1.5 Overview**

Describes the structure of the SRS — what each section covers (e.g., system overview, functional and non-functional requirements, etc.).

**2. Overall Description**

**2.1 Product Perspective**

Explains how the Recycling Machine fits into the overall recycling process.  
The system is a **standalone embedded application** that interacts with customers and operators.

**2.2 Product Functions**

Summarizes major functions:

* Accept bottles/cans
* Recognize item type and quantity
* Record transactions
* Print receipts
* Generate daily reports
* Allow operator to update deposit values
* Trigger alarms on errors

**2.3 User Characteristics**

Defines the two main user types:

* **Customers:** General public, no technical expertise required.
* **Operators:** Trained personnel managing maintenance and configurations.

**2.4 Constraints**

Lists system limitations such as:

* Machine hardware dependency
* Limited receipt roll capacity
* Predefined item types (bottles, cans)

**2.5 Assumptions and Dependencies**

States assumptions like:

* Machine sensors correctly identify item type.
* Network or power availability for report generation.

**3. Specific Requirements**

**3.1 Functional Requirements**

Lists detailed system behaviors:

* **FR1:** Accept and recognize returned items.
* **FR2:** Record item type and quantity.
* **FR3:** Generate and print receipt upon request.
* **FR4:** Display and update deposit values (operator only).
* **FR5:** Generate daily usage and deposit reports.
* **FR6:** Detect malfunctions and trigger alarms.

**3.2 Interface Requirements**

Describes interactions between users and system:

* **Customer Interface:** Touch screen or display for depositing items and printing receipts.
* **Operator Interface:** Admin panel for reports, settings, and alarms.

**4. System Features**

**4.1 Customer Transaction Feature**

* Supports depositing bottles/cans and records each transaction.
* Displays total refund amount and prints receipt.

**4.2 Operator Management Feature**

* Provides daily statistics, report generation, and configuration updates (e.g., deposit values).

**4.3 Machine Monitoring Feature**

* Tracks machine status, detects issues, and triggers alarms for operator attention.

**5. Non-Functional Requirements**

**5.1 Performance Requirements**

* Must process item recognition and receipt printing within a few seconds per item.
* Handle multiple transactions per day efficiently.

**5.2 Reliability**

* Ensure accurate counting and refund calculations.
* Automatic data backup for transaction history.

**5.3 Availability**

* System should operate continuously during business hours.

**5.4 Security**

* Restrict access to operator functions.
* Protect refund data and operator settings.

**5.5 Usability**

* Simple, clear interface for customers and operators.

**5.6 Maintainability**

* Easy configuration updates (e.g., deposit value changes).

**5.7 Safety**

* Safe operation even in case of hardware or sensor malfunction.

**6. Other Supporting Information**

**6.1 Appendices**

Includes diagrams, glossary, and references if required.

**6.2 Future Enhancements**

Possible future features such as:

* Support for new item types.
* Integration with mobile refund apps.
* Cloud-based reporting.