

FUNCTIONAL & NON-FUNCTIONAL REQUIRMENTS OF RECYCLING MACHINE SYSTEM

Functional Requirements

No.	Functional Requirement	Description
1	Deposit Items	The system shall allow a customer to deposit one or more recyclable items into the machine.
2	Scan and Recognize Items	The system must be able to scan and recognize the type of each item (e.g., plastic bottle, aluminium can, glass).
3	Calculate Refund	The system shall calculate the total refund amount based on the quantity and type of items returned.
4	Dispense Refund	The system shall give the calculated refund to the customer after the return process is complete.
5	Record Transaction	The system must record all details of each transaction (items, refund, date, time).
6	Print Receipt	The system shall allow the customer to print a physical receipt for their transaction.
7	Generate Reports	An authenticated operator should be able to create reports on daily usage and machine status.
8	Update Refund Values	An authenticated operator should be able to update refund values for different item types.
9	Trigger Alarm/Notification	The system shall give an alert if a bin is full or a malfunction happens during report generation.
10	System Maintenance	A system admin should be able to perform system-level tasks such as initialization, shutdown, and maintenance.

Non-Functional Requirements

No.	Non-Functional Requirement	Description
1	Performance	The system must recognize and process each item in less than 3 seconds.
2	Reliability	The system should have an uptime of 99.5% during operation hours.
3	Security	Operator and Admin access must be protected by secure authentication (e.g., password or keycard).
4	Usability	The interface should be easy to use, allowing first-time users to finish a transaction within two minutes.
5	Capacity	The database must be able to store transaction records for at least one year.