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**RECYCLING MACHINE APP**

**Functional Requirements:**

| **#** | **Requirement Title** | **Description** |
| --- | --- | --- |
| FR-01 | Material Detection | The machine/app must detect the type of recyclable material (plastic, metal, paper, etc.). |
| FR-02 | User Input/Scan | Users can insert waste or scan items to start recycling. |
| FR-03 | Reward Points Allocation | The system should award points or tokens for each acceptable recycled item. |
| FR-04 | Item Count Display | The machine should display the total number of items recycled in the session. |
| FR-05 | Session Summary | At the end, it should show a summary (items recycled + points earned). |
| FR-06 | Reject Non-Recyclable Items | The system must detect and reject items that are not recyclable. |
| FR-07 | Data Logging *(Optional)* | The system should store session data for record keeping or analytics. |

**Non-Functional Requirements:**

| **#** | **Requirement Title** | **Description** |
| --- | --- | --- |
| NFR-01 | Performance | Item detection and reward calculation should be completed instantly. |
| NFR-02 | Usability | The interface should be user-friendly, especially for public usage. |
| NFR-03 | Accuracy | The system should correctly identify recyclable and non-recyclable items. |
| NFR-04 | Durability *(Machine-side)* | The machine should be able to handle multiple items without malfunction. |
| NFR-05 | Reliability | The system should work continuously without data loss. |
| NFR-06 | Feedback & Alerts | The system should show clear alerts for errors like “Invalid Item” or “System Full.” |
| NFR-07 | Expandability | The system should support new material types or reward mechanisms later. |

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