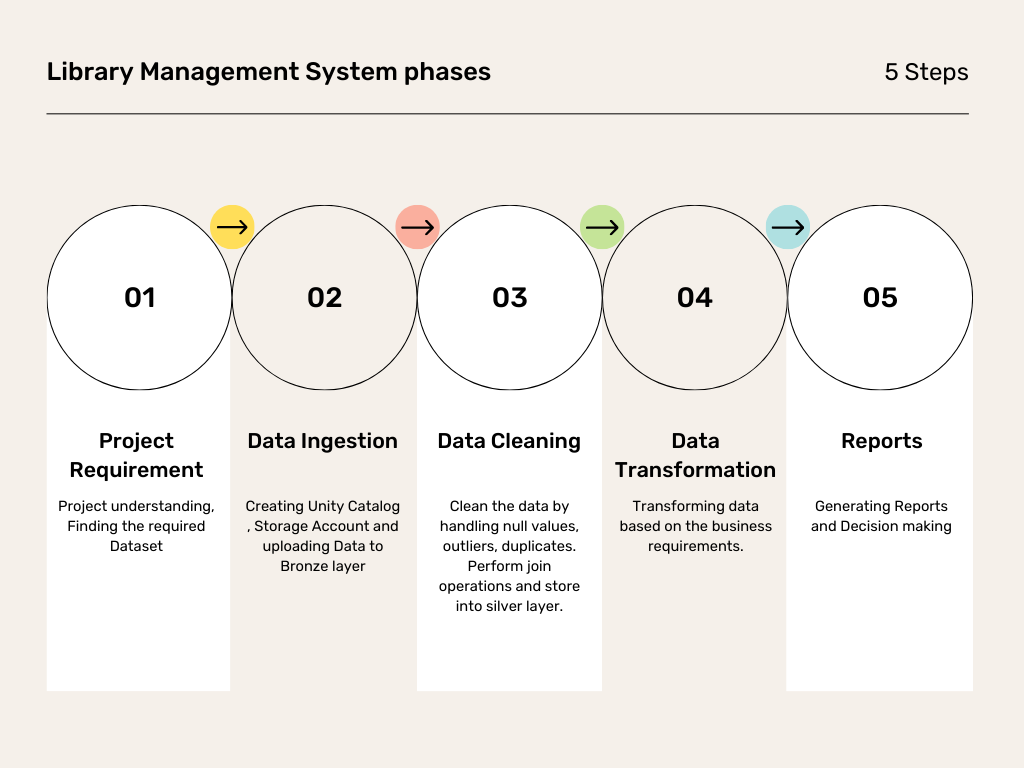


**Library Management System**

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**Library Utilization Metrics 📊**

* 📈 Total Number of Transactions → Metric Card *(Count of transaction\_id)*
* 📊 Monthly/Yearly Transaction Trends → Bar Chart/Line Chart *(issue\_date, Count of transaction\_id grouped by month/year)*

**Book Insights 📚**

* 📖 Most Borrowed Books → Bar Chart *(Top book\_id by count of transaction\_id from transaction\_table)*
* 🏷 Books by Department → Pie Chart/Bar Chart *(department from books\_table, Count of book\_id borrowed)*
* 🔁 Average Borrowing Duration → Box Plot/Bar Chart *(return\_date - issue\_date for transaction\_id)*

**Student Engagement & Fines 🎓**

* 🎓 Top Borrowing Students → Bar Chart *(Top student\_id by count of transaction\_id from transaction\_table)*
* 💰 Total Fine Collected → Metric Card *(Sum of fine\_amount from transaction\_table)*
* ⏳ Late Return Rate (%) → Pie Chart *(On-time vs Late returns → return\_date > due\_date from transaction\_table)*
* 📌 Most Fined Students → Bar Chart *(Top student\_id by total fine\_amount from transaction\_table)*

**Book Condition & Maintenance 🔄**

* 📦 Books Returned as Damaged (%) → Pie Chart *(final\_status = damaged vs final\_status = good from transaction\_table)*
* 📕 Copies Needing Replacement → Bar Chart *(Books with the highest number of damaged status from transaction\_table)*