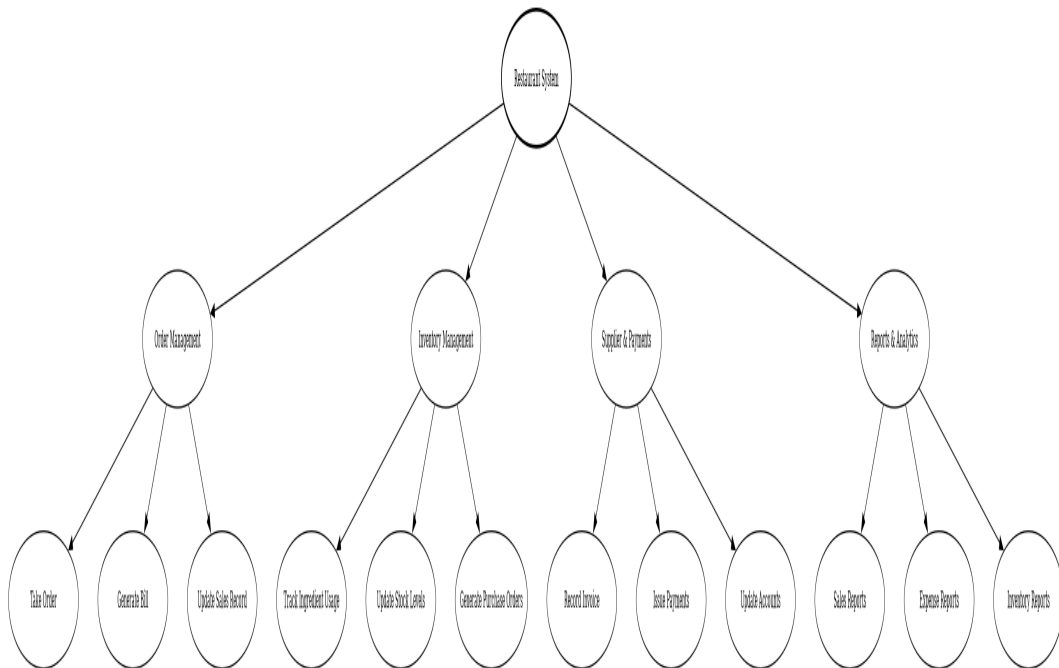
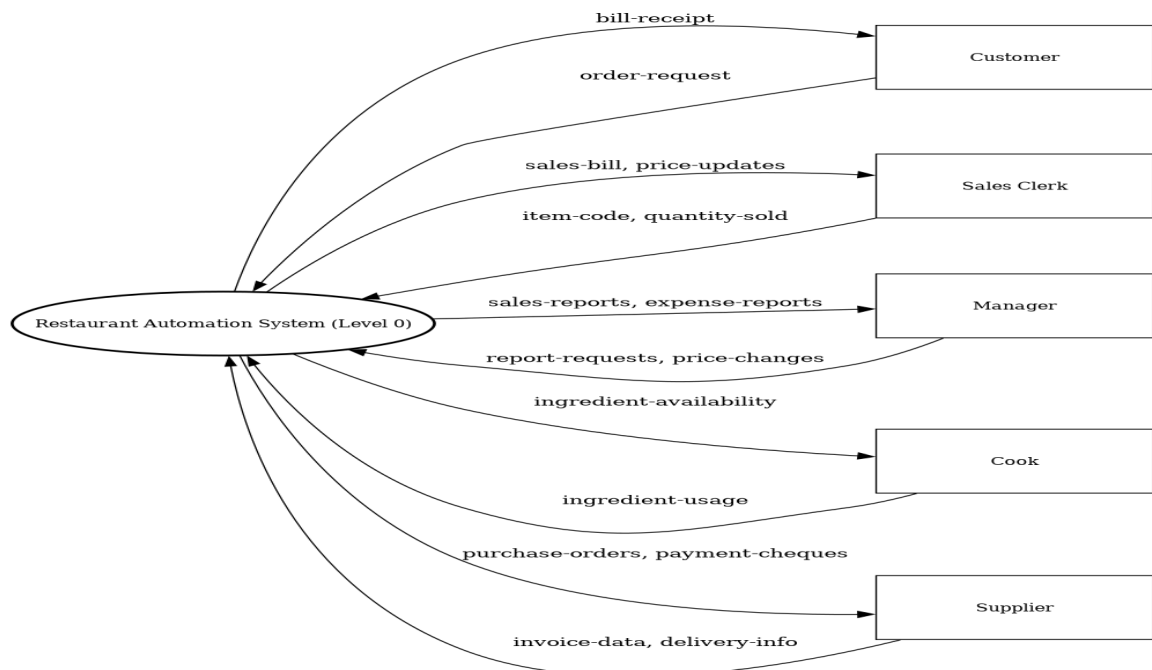


Q20. Restaurant Automation System

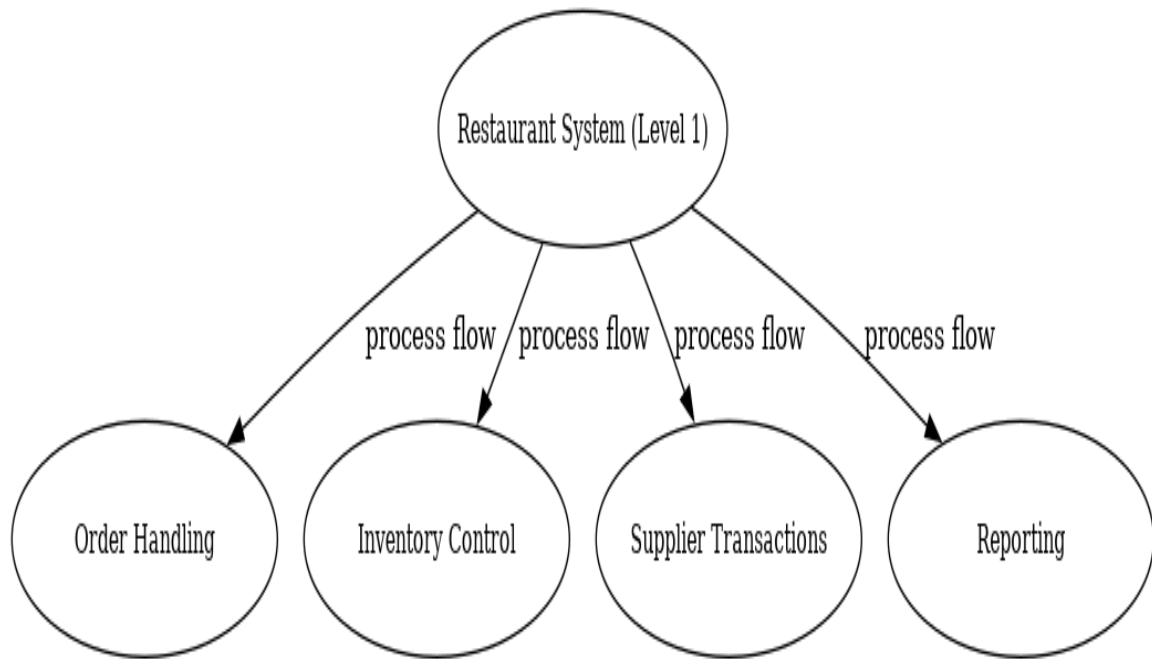
Structured Chart:



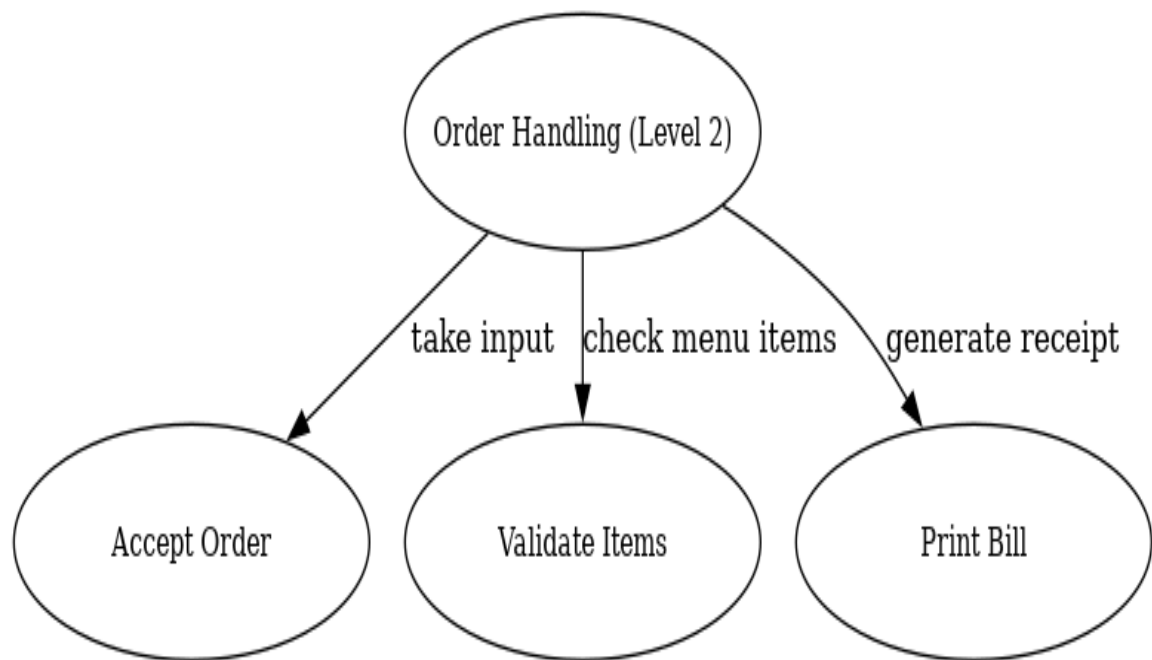
Context Diagram (Level 0):



Level 1 DFD:



Level 2 (Order Handling):



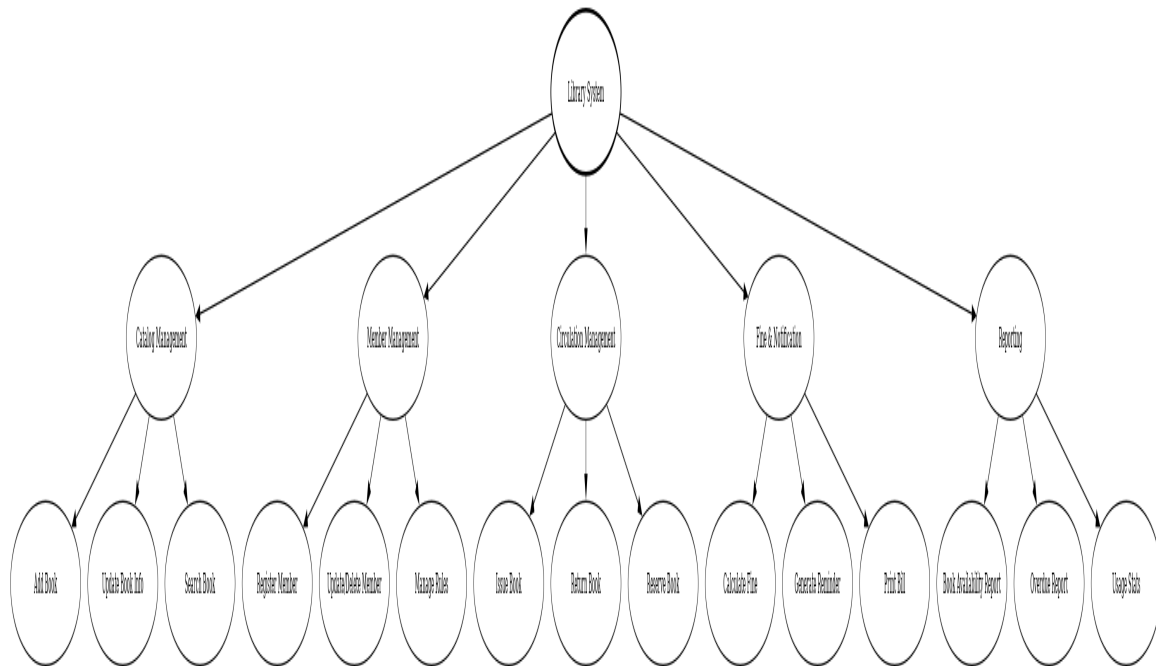
Data Dictionary:

- customer-order: {order-id, item-id, quantity, timestamp}
- bill-slip: {bill-no, order-id, list-of-items, total-amount, tax, net-amount}
- menu-item: {item-id, item-name, category, price, availability-status}
- ingredient-stock: {ingredient-id, ingredient-name, unit, quantity-in-hand, reorder-level}
- purchase-order: {po-id, supplier-id, ingredient-list, order-date, estimated-cost}
- supplier-invoice: {invoice-id, supplier-id, date, ingredient-list, total-cost, payment-status}
- sales-record: {transaction-id, item-id, qty-sold, total-price, date-time}
- expense-record: {invoice-id, amount-paid, supplier-id, payment-date}
- account-balance: {account-id, available-balance, last-updated}

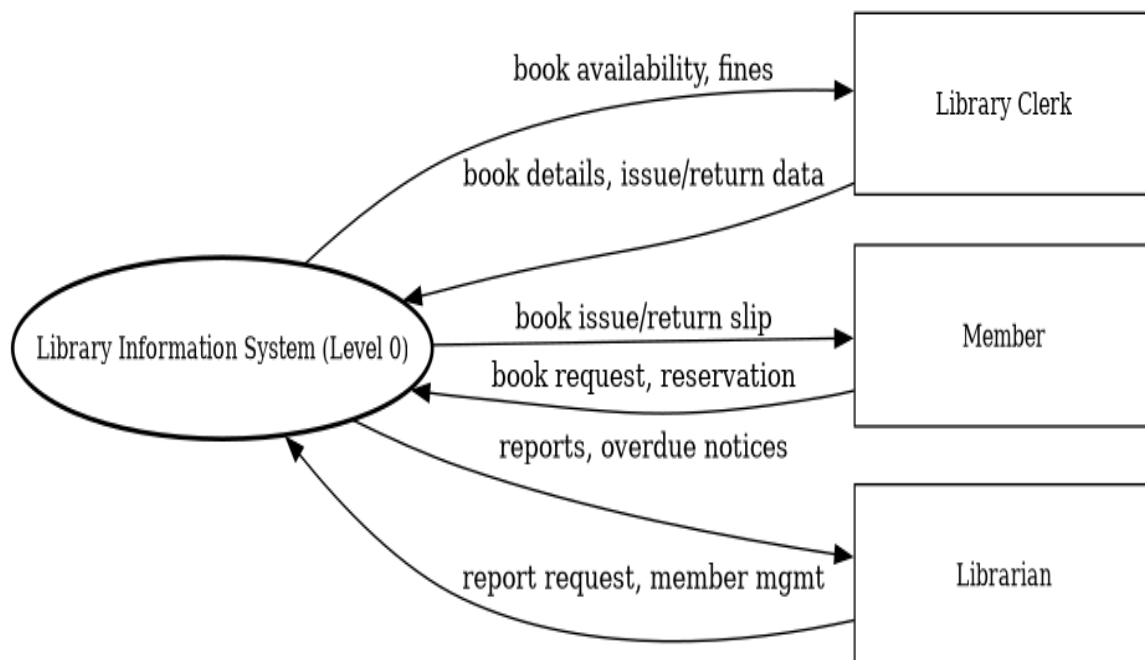
- sales-report: {period, item-id, total-sold, revenue}

Q22. Library Information System

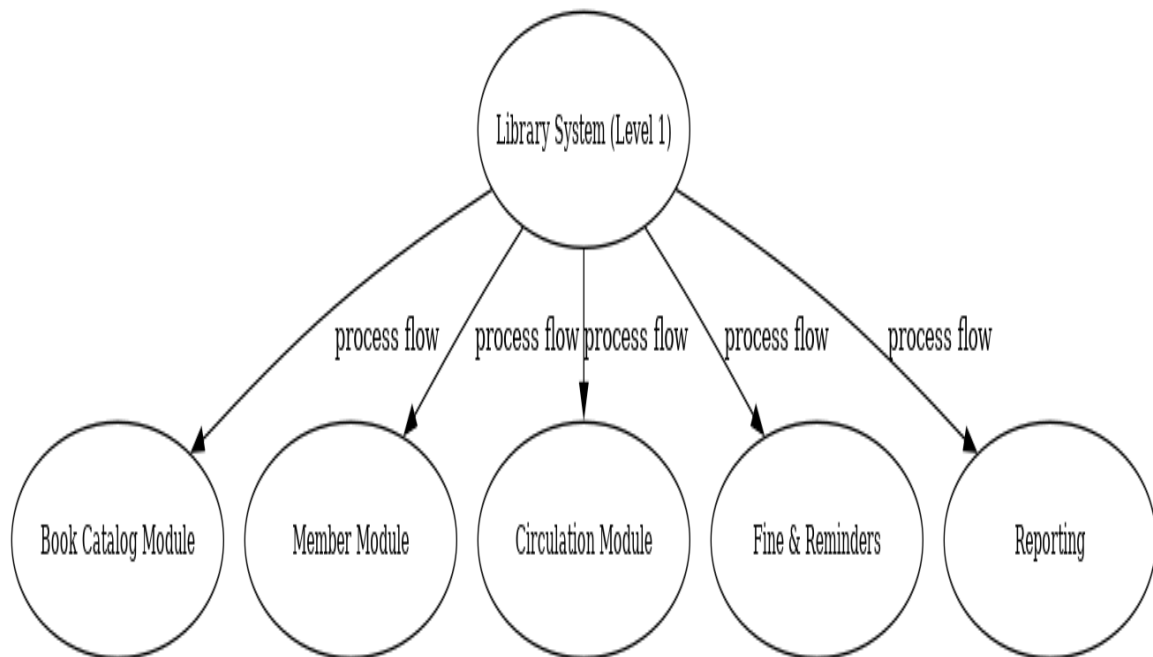
Structured Chart:



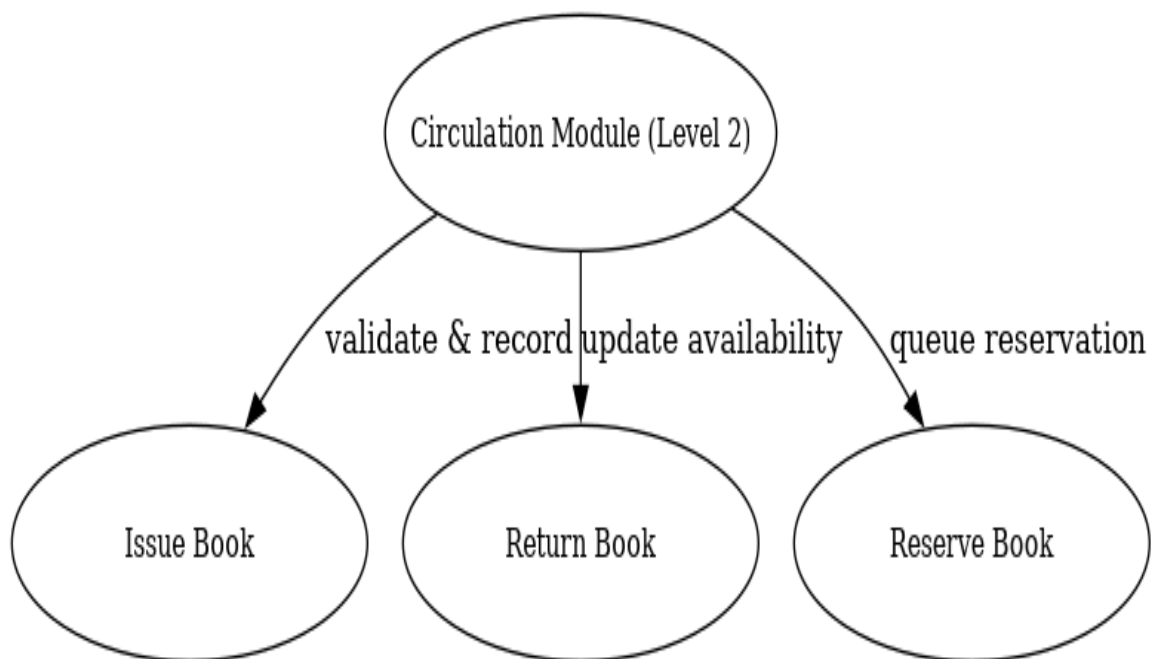
Context Diagram (Level 0):



Level 1 DFD:



Level 2 (Circulation Module):



Data Dictionary:

- book-record: {ISBN, title, author, publisher, rack-no, copies-available}
- member-record: {member-id, name, category, max-books, issue-duration}
- book-issue: {issue-id, member-id, ISBN, issue-date, due-date}
- book-return: {return-id, member-id, ISBN, return-date, overdue-days}
- book-reservation: {res-id, member-id, ISBN, reservation-date, status}
- fine-slip: {fine-id, member-id, ISBN, overdue-days, fine-amount, date}
- reminder-note: {member-id, list-of-overdue-books, message}

- availability-report: {ISBN, title, rack-no, available-copies}
- overdue-report: {member-id, name, book-list, total-fine}
- usage-stats: {time-period, total-books-issued, total-books-returned, fine-collected}