



Library Management System

Software Testing

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Black-Box Testing for Issue Book Module:

Test Case 1: Number of books allowed to be issued at once by a single user.

Division of Input Domain: (Equivalence Classes)

EC1: 0 to 4 → Valid domain.

EC2: 5 → Valid domain.

EC3: Greater than 5 → Invalid domain.

EC4: Lesser than 0 → Invalid domain.

EC5: Empty → Invalid domain.

Division of Output Domain: (Equivalence Classes)

For EC1: Expected output → Allow user to issue more books.

For EC2: Expected output → Ask user to return a book to issue more.

For EC3: Expected output → Alert for invalid data.

For EC4: Expected output → Alert for invalid data.

For EC5: Expected output → Alert for invalid data.

Test Case 2: Number of days allowed to keep a book issued.

Division of Input Domain: (Equivalence Classes)

EC1: 0 to 30 → Valid domain.

EC2: Greater than 30 → Invalid domain.

EC3: Lesser than 0 → Invalid domain.

EC4: Empty → Invalid domain.

Division of Output Domain: (Equivalence Classes)

For EC1: Expected output → User returned book on time.

For EC2: Expected output → Calculate fine at Rs. 50 per day over the due date.

For EC3: Expected output → Alert for invalid data.

For EC4: Expected output → Alert for invalid data.

Test Case 3: Issue a **specific book** to a member.

Division of Input Domain: (Equivalence Classes)

EC1: Book not issued by another member → Valid domain.

EC2: Book issued by another member → Invalid domain.

EC3: Empty → Invalid domain.

Division of Output Domain: (Equivalence Classes)

For EC1: Expected output → Issue book to the member and store in database.

For EC2: Expected output → Alert book already issued by another member.

For EC3: Expected output → Alert for invalid book.

Test Case 4: Issue book to a **specific member**.

Division of Input Domain: (Equivalence Classes)

EC1: Member ID found in database → Valid domain.

EC2: Member ID not found in database → Invalid domain.

EC3: Empty Member ID → Invalid domain.

Division of Output Domain: (Equivalence Classes)

For EC1: Expected output → Issue book to the specific member and store in database.

For EC2: Expected output → Alert invalid Member ID used.

For EC3: Expected output → Alert for invalid data entry.

Black-Box Testing for Return Book Module:

Test Case 5: Return a **specific book** issued by a member.

Division of Input Domain: (Equivalence Classes)

EC1: Book issued by a member → **Valid domain.**

EC2: Book not issued by any member → **Invalid domain.**

EC3: Empty → **Invalid domain.**

Division of Output Domain: (Equivalence Classes)

For EC1: Expected output → Return book issued by the member and update the database.

For EC2: Expected output → Alert book not issued by any member.

For EC3: Expected output → Alert for invalid book.

Test Case 6: Return a book to a **specific member**.

Division of Input Domain: (Equivalence Classes)

EC1: Book issued to the specific Member ID found in database → **Valid domain.**

EC2: Book issued to the specific Member ID not found in database → **Invalid domain.**

EC3: Empty Member ID → **Invalid domain.**

Division of Output Domain: (Equivalence Classes)

For EC1: Expected output → Return book by the specific member and store in database.

For EC2: Expected output → Alert book not issued by the specific Member ID.

For EC3: Expected output → Alert for invalid data entry.