University Library Analytics System

End-User Guide (Non-Technical Documentation)

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1. Introduction

The University Library Analytics System is designed to help library management, staff, and academic departments understand how library resources are used. This guide explains how to access and use the dashboards and reports without needing technical knowledge of databases or programming.

This user guide is written for non-technical users, including library directors, department heads, librarians, and reporting staff.

2. System Overview

The system collects library data from multiple sources such as book borrowing transactions, digital resource usage, and study room bookings. The data is cleaned, stored in a data warehouse, and analyzed using interactive dashboards.

Main Components:

- Data Sources: Book Transactions, Digital Usage, Room Bookings
- Data Warehouse: Stores cleaned and integrated data
- Dashboards: Visual analysis using Power BI
- Reports: Exportable files in Excel/CSV/PDF formats
- Security: Controlled access using user roles (RBAC)

3. How to Access the System

To access the dashboards, you will use Power BI Desktop (or Power BI Service if published online). Your access depends on your role: Admin, Analyst, or Department Head.

Login Requirements:

- A computer with Power BI installed (recommended)
- A valid username and password provided by the system administrator
- Network access to the database server (if dashboards are connected live)

If you do not have access credentials, contact the library IT administrator.

4. Dashboard Navigation (Power BI)

Power BI dashboards are interactive. You can filter, drill down, and highlight data by clicking charts.

Key Navigation Features:

- Filters Panel: Allows you to select department, year, month, or resource type
- Slicers: Quick filters shown directly on the dashboard
- Drill-Down: Click a bar/line to explore more detailed data
- Tooltips: Hover over visuals to see exact numbers
- Reset Button: Clears selections and returns dashboard to default view

5. Executive Dashboard (Library Director)

The Executive Dashboard provides high-level Key Performance Indicators (KPIs) for library management. It is mainly used by the library director and senior administrators.

KPIs Included:

- Total Library Usage (all activities combined)
- Total Book Transactions (borrow/return activities)
- Total Digital Downloads/Usage
- Total Room Bookings
- Top 5 Most Used Resource Types
- Yearly Usage Trend

How to Use: Select a year or month filter to view performance for a specific time period.

6. Department Dashboard (Academic Units)

The Department Dashboard focuses on resource usage by faculty or academic unit. It helps department heads understand how students and staff use library services.

Charts Included:

- Bar Chart: Total usage per department
- Heat Map: Resource usage by department and month
- Pie Chart: Percentage usage per resource category
- Table: Department comparison (digital usage vs room bookings)

How to Use: Choose a department slicer to focus on one academic unit. Click on any bar to highlight related values across the dashboard.

7. Operational Dashboard (Daily Metrics)

The Operational Dashboard supports daily library operations. It helps librarians monitor day-to-day performance and resource demand.

Operational Metrics:

- Daily total usage trend (line graph)
- Daily digital usage counts
- Daily room bookings
- Peak days (highest traffic)
- Room booking demand by room type

How to Use: Use the date filter to focus on a specific week or month. The dashboard is useful for staffing decisions and operational planning.

8. Reports and Exports (Excel/CSV/PDF)

Reports can be exported for offline analysis and submission to management. Power BI allows exporting visuals and tables into Excel, CSV, or PDF.

Export Options:

- Export Data: Download raw table data as CSV
- Export Visual: Export a chart or table as an image or PDF
- Export Report: Export the entire dashboard report as PDF
- Excel Dashboard File: Use pre-generated CSV/Excel files for reporting

9. Common User Tasks (Step-by-Step)

Task 1: View yearly library usage

1. Open Power BI report file (.pbix).
2. Go to Executive Dashboard tab.
3. Select the Year slicer.
4. Review KPI cards and trend chart.

Task 2: Check top used resource type

1. Open Executive Dashboard.
2. Locate the 'Top Resource Types' chart.
3. Hover on bars to see exact numbers.

Task 3: Compare department usage

1. Open Department Dashboard tab.
2. Use Department filter to select multiple departments.
3. Compare digital usage and room bookings.

Task 4: Monitor daily operational traffic

1. Open Operational Dashboard tab.
2. Select a date range.
3. Review daily usage line chart for peak days.

10. Data Security, Roles, and Privacy

The system uses Role-Based Access Control (RBAC) to ensure users only see the data they are allowed to access. Sensitive information such as Student IDs may be masked in reports.

Role	Access Level
Admin	Full access to all tables, views, and security configuration
Analyst	Read-only access to all dashboards and masked views
Department Head	Read-only access to data limited to their department

Important: Users must never share passwords. All access is monitored through audit logs.

11. Troubleshooting & FAQs

Q: Dashboard is not loading

A: Check internet connection and confirm database server is running.

Q: No data is displayed

A: Ensure filters are not too restrictive. Click reset filters.

Q: Permission denied error

A: You may not have access rights. Contact administrator.

Q: Power BI cannot connect to database

A: Verify username/password and confirm MySQL is running in XAMPP.

Q: Data seems outdated

A: Ask admin to run ETL pipeline and refresh Power BI dataset.

12. Support and Maintenance

If you experience technical issues or require new dashboard features, contact the system administrator. Regular backups are performed to ensure recovery in case of system failure.

Recommended Maintenance Practices:

- Refresh dashboards weekly or after ETL updates
- Review audit logs monthly
- Run full backups weekly and store backups on external drive
- Update Power BI visuals based on management needs
- Ensure antivirus and system updates are active on the server machine